

# CATALOGUE GAS SPRINGS



www.gasfedern.co.at

## CHARACTERISTIC GAS SPRINGS

The gas strut is a multipurpose product of a simple cylindrical shape with different varieties of attachment working as a gas spring with a damping effect on the basis of compressed gas (nitrogen) and oil filling. It helps, or facilitates the opening and closing, extraction or insertion and locking in the limit position on the appropriate, adjusted moving parts of different devices. Gas struts are used in the handling of bodies such as: lifting, lowering, alternating lifting and lowering, creating the forces opposing the movement of bodies in a single movement between two exactly identified end points at a controlled speed. The use of gas struts is numerous and versatile. The options for use are versatile in the engineering industry, food industry, construction industry, the furniture industry, agriculture, maintenance, and also in the private sector for various adjustments and repairs. Gas struts are an assortment that occurs in virtually every industry sector, and also in homes. The advantage of using a gas spring consists of its long lifetime, trouble-free and maintenance-free operation and high reliability even under extreme climatic temperature changes. Gas struts are manufactured with a piston diameter of 6 mm, 8 mm, 10 mm or 14 mm, depending on the pressure, which the given strut should provide, i.e. the strut of smaller piston diameter can be pressurized at a lower pressure value than a strut with a piston diameter. Struts with different piston diameters are also divided by different lengths and different strokes. For specific customer requirements, it is possible to manufacture a strut of non-standard size or non-standard material after consultation with the manufacturer.

#### **Dimensional and pressure characteristics:**

All dimensions are in millimeters (mm), the pressure and power values given in Newtons (N).

Information about temperatures are given in Celsius (°C)

#### **Assembly conditions:**

Gas struts are mounted generally downwards with the piston while keeping a minimum gradient of 15°. Horizontal assembly and assembly with the piston upwards must be consulted in advance.

Gas struts must not be exposed to lateral pressure.

In the case of gas struts with welded eyelets it is necessary to leave an allowance of 0.3 to 0.5 mm on the axle in terms of its diameter and an allowance of 0.5 to 1 mm on both sides of the eyelet.

The ordering of gas struts filled with maximum allowable spreadsheet pressure should be avoided.

When varnishing it is necessary to fully protect the gas strut's piston. Never use solvents to clean the piston.

#### Warnings for the installation of gas struts:

Protect the piston from the effects of various shocks and splashing during arc welding, from sparks created during grinding, and from the spraying of paint during surface treatment. Never clamp the piston in a vise or pliers without using safety clamps made of lead, aluminum, or copper.

#### **Conditions of use:**

Number of strokes per minute: max. 5. In case of a greater number of strokes, contact us by phone or email.

Period of maintaining original characteristics: average of 30,000 cycles. Loss of technical parameters after this maximum load threshold: max 15%.

Operating temperature:  $-30^{\circ}$ C to  $+ 80^{\circ}$ C.

The relative temperature: 20°C, deviation of the extraction strength in relation to the temperature: 1% per  $3^\circ\text{C}$ 

#### Example for exertion force F1 at the value of 500 N:

at  $35^{\circ}$ C - +5% = 525 N at -16°C - -12% = 440 N

#### Storage conditions before using the gas strut:

In the case of a storage period up to 3 months the gas struts may be stored in a horizontal position and in a closed room at room temperature. In the case of a longer storage period and in countries with a warm climate, gas struts must be stored in an upright position, with the piston downward.

#### Warranty:

• one-year warranty from the date of filling the gas spring. Example: 01/2007 = first calendar week of 2008,

• in order for the warranty to be recognized, for example after a color surface treatment, the label with the date of filling must be readable.

#### **Disposal of gas struts:**

Gas struts are pressurized by a pressure of 20 to 180 bar. But before their disposal they must remain free of pressure.

For your own safety, we would like to ask that you follow these steps: • lightly secure the gas strut in a vise

• saw off the piston rod at a distance of 30-35 mm from its edge.

### While doing so, you must observe the following recommendations:

- use safety goggles while working
- use a handsaw
- throw a working cloth over the saw blade
- stop sawing when you hear the sound characteristic for pressure balancing
- release of gas from the gas strut is finished when you are able to move the piston freely with your hand

#### **Tolerance with pressurized gas springs:**

During each gas spring pressurization, the following tolerance is allowed depending on the amount of its pressure:

Pressurizing from 50 – 250N = Pressurizing from 250 – 750N = Pressurizing from 750+N =

allowable tolerance 20N
allowable tolerance 30N
allowable tolerance 40N

## Peter Ofner GmbH offers the following types of gas springs:

- Compression gas springs
- Traction gas springs
- Locking gas springs
- Stainless steel gas springs
- Protection tubes
- End fittings and accessories



Reliable and fast delivery

## **TRACTION** GAS SPRINGS

Tension gas springs have a special structure that makes the piston rod to be pulled in the body of the spring, which is also the starting position of the piston rod in this type of spring. In pulling the piston rod of the spring body it is necessary to expend the tensile strength corresponding to the tension gas spring's pressurizing. This type of spring is used to open or close hatches of different types, for lifting loads, in particular where it is not possible to use a compression gas spring. We offer tension gas springs in seven different lengths, pressurized according to customer requirements ranging from 100N - 1200N.

The piston rod is made of C35 steel and spring body made of ST34 2-BK steel.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
100	300	100-1200	ST T28 100 + F1 V
150	400	100-1200	ST T28 150 + F1 V
200	500	100-1200	ST T28 200 + F1 V
250	600	100-1200	ST T28 250 + F1 V
300	700	100-1200	ST T28 300 + F1 V
350	800	100-1200	ST T28 350 + F1 V
400	900	100-1200	ST T28 400 + F1 V





#### **COMPRESSION GAS** WITH A PISTON DIAMETER OF 6 mm COMPLETED WITH M6 THREAD

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with an M6 thread, for which there is a wide range of end fittings. End fittings for this type of spring can be found in many materials created on demand 9.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
20	80	30-250	ST 020+F1 V+D6
40	115	30-400	ST 040+F1 V+D6
60	155	30-400	ST 060+F1 V+D6
80	195	30-400	ST 080+F1 V+D6
100	225	30-400	ST 100+F1 V+D6E225
100	235	30-400	ST 100+F1 V+D6
120	275	30-400	ST 120+F1 V+D6
150	335	30-400	ST 150+F1 V+D6

#### Instructions for ordering the correct type of gas springs:

If you need a gas spring with a piston diameter of 6 mm, finished M6 thread, stroke of C = 100 mm and with a force of F1 = 200N – the spring will have order number ST100 200 VD6.



### **COMPRESSION GAS** GAS SPRINGS WITH A PISTON DIAMETER OF 6 mm WITH WELDED MESH

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with a welded mesh with a diameter of 6.5 mm and a mesh thickness of 3 mm.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
20	94	30-250	ST 020+F1+D6
40	145	30-400	ST 040+F1+D6
60	185	30-400	ST 060+F1+D6
80	225	30-400	ST 080+F1+D6
100	265	30-400	ST 100+F1+D6
120	305	30-400	ST 120+F1+D6
150	365	30-400	ST 150+F1+D6

Instructions for ordering the correct type of gas springs:

If you need a gas spring with a piston diameter of 6 mm, with a welded mesh, stroke of C = 100 mm and with a force of F1 = 200N – the spring will have order number ST100 200 D6.

#### **COMPRESSION GAS** WITH A PISTON DIAMETER OF 8 mm COMPLETED WITH M6 THREAD

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with an M6 thread, for which there is a wide range of end fittings. End fittings for this type of spring can be found in many materials created on demand 9.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
60	165	50-750	ST 060+F1 V+D8
70	183	50-750	ST 070+F1 V+D8
80	205	50-750	ST 080+F1 V+D8
89	268	50-750	ST 089+F1 V+D8
90	225	50-750	ST 090+F1 V+D8
100	245	50-750	ST 100+F1 V+D8
120	285	50-750	ST 120+F1 V+D8
140	325	50-750	ST 140+F1 V+D8
160	365	50-750	ST 160+F1 <mark>V</mark> +D8
180	405	50-700	ST 180+F1 V+D8
200	445	50-700	ST 200+F1 V+D8
220	485	50-700	ST 220+F1 V+D8
250	545	50-700	ST 250+F1 V+D8
250	600	50-700	ST 250+F1 V+D8E600
300	645	50-700	ST 300+F1 V+D8

Instructions for ordering the correct type of gas springs

If you need a gas spring with a piston diameter of 8 mm, finished M6 thread, stroke of C = 100 mm and with a force of F1 = 600N – the spring will have order number ST100 600 VD8.

### **COMPRESSION GAS** GAS SPRINGS WITH A PISTON DIAMETER OF 8 mm WITH WELDED MESH

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with a welded mesh with a diameter of 8.1 mm and a mesh thickness of 5 mm.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
40	155	50-750	ST 040+F1+D8E155
60	205	50-750	ST 060+F1+D8
72	225	50-750	ST 072+F1+D8
80	245	50-750	ST 080+F1+D8
90	255	50-750	ST 090+F1+D8
100	285	50-750	ST 100+F1+D8
120	325	50-750	ST 120+F1+D8
140	365	50-750	ST 140+F1+D8
150	385	50-750	ST 150+F1+D8
160	405	50-750	ST 160+F1+D8
180	445	50-700	ST 180+F1+D8
200	485	50-700	ST 200+F1+D8
200	500	50-700	ST 200+F1+D8E500
220	525	50-700	ST 220+F1+D8
250	585	50-700	ST 250+F1+D8
250	600	50-700	ST 250+F1+D8E600

Instructions for ordering the correct type of gas springs: If you need a gas spring with a piston diameter of 8 mm, with a welded mesh, stroke C = 100mm and with a force of F1 = 600N – the spring will have order number ST100 600 [

## ACCESSORIES STANDARD M6

USE ONLY FOR THE GAS SPRINGS WITH A PISTON DIAMETER OF 6 mm AND 8 mm



## ACCESSORIES STANDARD M6

USE ONLY FOR THE GAS SPRINGS WITH A PISTON DIAMETER OF 6 mm AND 8 mm



#### **COMPRESSION GAS** WITH A PISTON DIAMETER OF 10 mm COMPLETED WITH M8 THREAD

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with an M8 thread, for which there is a wide range of end fittings. End fittings for this type of spring can be found in many materials created on demand 13, 14 and 15.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
60	180	100-1150	ST 060+F1 V+D10
100	255	100-1150	ST 100+F1 V+D10
150	355	100-1150	ST 150+F1 V+D10
150	405	250-1150	ST 150+F1 V+D10E405
200	455	100-1150	ST 200+F1 V+D10
250	555	100-1050	ST 250+F1 V+D10
250	610	100-1050	ST 250+F1 V+D10E610
300	655	100-1050	ST 300+F1 V+D10
300	711	100-1000	ST 300+F1 V+D10E711
350	735	100-1000	ST 350+F1 V+D10E735
350	755	100-1000	ST 350+F1 V+D10
400	855	100-900	ST 400+F1 V+D10
440	960	100-900	ST 440+F1 V+D10E960
500	1055	100-700	ST 500+F1 V+D10
550*	1155	100-700	ST 550+F1 V+D10VA
600*	1255	100-700	ST 600+F1 V+D10VA
650*	1355	100-700	ST 650+F1 V+D10VA
700*	1455	100-700	ST 700+F1 V+D10VA

\*Delivery date specified on demand.

Instructions for ordering the correct type of gas springs:

If you need a gas spring with a piston diameter of 10 mm, finished M8 thread, stroke of C = 100 mm and with a force of F1 = 1000N – the spring will have order number ST100 1000 VD10.

### **COMPRESSION GAS** GAS SPRINGS WITH A PISTON DIAMETER OF 10 mm WITH WELDED MESH

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with a welded mesh with a diameter of 8.1 mm and a mesh thickness of 5 mm.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
100	285	50-1150	ST 100+F1+D10
150	385	50-1150	ST 150+F1+D10
200	485	50-1150	ST 200+F1+D10
250	585	50-1050	ST 250+F1+D10
300	685	50-1050	ST 300+F1+D10
330	740	50-1050	ST 330+F1+D10
350	785	50-1000	ST 350+F1+D10
400	885	50-900	ST 400+F1+D10

Instructions for ordering the correct type of gas springs:

If you need a gas spring with a piston diameter of 10 mm, with a welded mesh, stroke of C = 100 mm and with a force of F1 = 1000N – the spring will have order number ST100 1000 D10.

#### **COMPRESSION GAS** WITH A PISTON DIAMETER OF 14 mm COMPLETED WITH M8 THREAD

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein. Gas springs are finished with an M8 thread, for which there is a wide range of end fittings. End fittings for this type of spring can be found in many materials created on demand 13, 14 and 15.

The piston rod is made of C35 steel, which is treated by nitriding (QPQ). The cylinder body is made of ST34 2-BK steel and painted with black epoxy paint.



C - stroke [mm]	E - length [mm]	F1 - force [N]	Reference
60	180	100-2100	ST 060+F1 V+D14
100	255	100-2100	ST 100+F1 V+D14
150	355	200-2100	ST 150+F1 V+D14
200	455	200-2100	ST 200+F1 V+D14
250	555	300-2100	ST 250+F1 V+D14
300	655	300-2100	ST 300+F1 V+D14
350	755	300-2100	ST 350+F1 V+D14
400	855	300-2100	ST 400+F1 V+D14
450	955	300-2100	ST 450+F1 V+D14
500	1055	300-2100	ST 500+F1 V+D14
600*	1255	300-2100	ST 600+F1 V+D14VA
650*	1355	300-2100	ST 650+F1 V+D14VA
700*	1455	300-1800	ST 700+F1 V+D14VA
750*	1555	300-1800	ST 750+F1 <b>V</b> +D14VA
800*	1655	300-1500	ST 800+F1 V+D14VA
850*	1855	300-1500	ST 850+F1 V+D14VA

\*Finished by M10 threads. Delivery date specified on demand.

Instructions for ordering the correct type of gas springs: If you need a gas spring with a piston diameter of 14 mm, finished M8 thread, stroke of C = 100mm and with a force of F1 = 1500N – the spring will have order number ST100 1500 VD14.

## ACCESSORIES STANDARD M8

USE ONLY FOR THE GAS SPRINGS WITH A PISTON DIAMETER OF 10 mm AND 14 mm



## ACCESSORIES STANDARD M8

USE ONLY FOR THE GAS SPRINGS WITH A PISTON DIAMETER OF 10 mm AND 14 mm



## **SPECIFIC ACCESSORIES**





## **SPECIFIC ACCESSORIES**

REF.	D2	В	Μ	Ο	D1	F	L	GL	Κ	J	Е	THREAD	SW	ANGLE	WEIGHT
ST GI6	6	9	6,75	8,90	20	30	40	12	13	10	5	M6	11	13	27
ST GI8	8	12	9	10,40	24	36	48	16	16	12,50	5	M8	13	13	46



REF.	SIZE	А	В	С	D	Е	F	G
ST F6	6x12	12	6	12	24	M6	6	14,50
ST F8	8x16	16	8	16	32	M8	8	18,50
ST ES6	Ø6						6	
ST ES8	Ø8						8	



## **SPECIFIC ACCESSORIES**

#### **PROTECTIVE TUBE**

The protective tube protects the piston rod of the gas spring against mechanical or chemical damage. It is mainly used in polluted environments or in environments where there is an increased risk of mechanical damage. It is made of ST34 steel, which is painted with epoxy paint. This component can be used only in gas springs finished by a thread.



#### **DIRT WIPER**

ST RAC dirt wiper protect the internal seal of the gas spring against surrounding contaminants that may reduce its life. ST RAC consists of a scraper (aluminum + nitrile NBR 90SH) and a cap made of PVC. This component is not compatible with safety or protective tubes and can be used only with gas spring finished by a thread.

#### SAFETY TUBE

The safety tube allows the locking of the gas spring in the extreme (open) position. Releasing the lock is attained by the slight lifting of the load.

This component is made of STN 34 steel, which is painted in black epoxy paint. Safety tubes can only be used with a gas spring finished by a thread.



### **STAINLESS STEEL** COMPRESSION GAS SPRINGS WITH FINISHED BY AN M8 THREAD

Compression gas springs are a multipurpose product of a simple cylindrical shape with different mounting variants producing an extending power under pressurized nitrogen. The compression of the piston rod into the cylinder compresses nitrogen, resulting in the formation of force, which extends the piston from the cylinder. The amount of force depends on the cross section of the piston rod, the cylinder volume and the amount of nitrogen therein.

Compression gas springs of stainless steel-types are used in aggressive or otherwise specific environments. This kind of spring is available with

a piston diameter of 8 mm, 10 mm and 14 mm, a stroke of 60 mm to 350 mm and a force of 50N to 2100N (listed in the table below).

The piston rod is made of AISI 316L stainless steel. The spring body is made of AISI 304 stainless steel.

The terminals for this type of spring are made of AISI 316L stainless steel and can be found on page19.



Reference	Piston diameter [mm]	Tube diameter [mm]	C - stroke [mm]	E - length [mm]	F1 - force [N]	Thread
TV D8C60Vi	8	18	60	165	50-650	M8
TV D8C80Vi	8	18	80	205	50-650	M8
TV D8C100Vi	8	18	100	245	50-650	M8
TV D8C120Vi	8	18	120	285	50-650	M8
TV D8C160Vi	8	18	160	365	50-650	M8
TV D8C180Vi	8	18	180	405	50-650	M8
TV D8C200Vi	8	18	200	445	50-650	M8
TV D8C250Vi	8	18	250	545	50-650	M8
TV D10C200Vi	10	21	200	455	100-1000	M8
TV D10C250Vi	10	21	250	555	100-1000	M8
TV D10C300Vi	10	21	300	655	100-1000	M8
TV D10C350Vi	10	21	350	755	100-900	M8
TV D10C400Vi	10	21	400	855	100-800	M8
TV D14C200Vi	14	28	200	455	200-2100	M8
TV D14C250Vi	14	28	250	555	200-2100	M8
TV D14C300Vi	14	28	300	655	200-2100	M8
TV D14C350Vi	14	28	350	755	200-2100	M8



### ACCESSORIES STANDARD STAINLESS STEEL







#### Peter Ofner GmbH

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Information about our further product range including locks, hinges, gaskets, etc. can be found on our homepage: www.dirak.at