



Gas springs and dampers for medical applications

[Product catalog](#)

Higher quality of life with technology from SUSPA

Chronically ill people, injured patients or people with physical constraints are dependent on support for their movements and in their daily life. A self-determined support independent of third parties improves quality of life significantly.

SUSPA technology can help here: thanks to variable adjustments, beds, wheelchairs or tables can easily be adjusted to meet a multitude of needs. At the same time, the height adjustment systems from SUSPA make the work of qualified personnel easier. They help saving effort and support during the patient care. Moreover, since adjustment systems from SUSPA can be installed in the smallest of spaces, there are no limits regarding design and layout.

Adjustment systems from SUSPA are resilient and reliable. No matter if you are the patient, nursing relatives or qualified personnel – technology from SUSPA brings ergonomics into daily life.



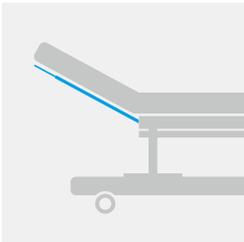
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e.g. for wheelchairs

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e.g. for massage couches

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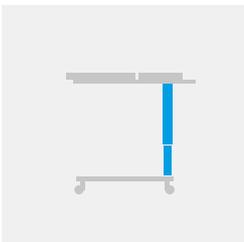


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e.g. for overbed tables

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e.g. for trolleys/carts

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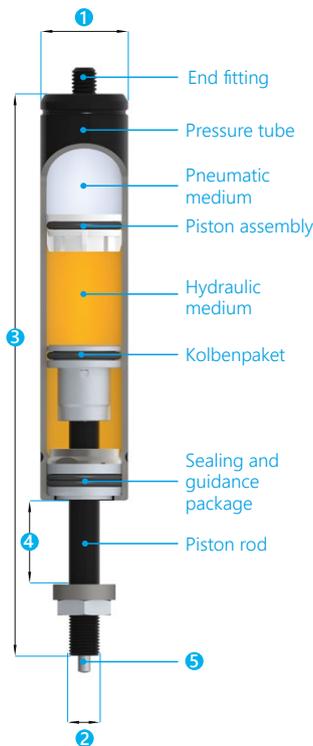
Hydraulic damper Softline

e.g. for hospital beds

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Lockable gas spring Lockline

The lockable gas springs provide ergonomics and comfort for the comfortable and safe adjustment of the sitting and lying positions of therapy beds, massage tables or rehabilitation equipment.



Elastic locking

Specification		EL1	EL2
Release pin		on piston rod side	
In compression direction	rigid until [N]	elastic	elastic
	max. load [N]	6,500*	10,000*
In extension direction	rigid until [N]	elastic	elastic
	max. load [N]	3,500*	7,000*
① Tube diameter [mm]		22	28
② Piston rod diameter [mm]		10	
③ min. install. length without end fitting [mm]		2 x stroke + 70	
④ Stroke [mm]		10 - 450	10 - 450
⑤ Release systems		see below	
Extension forces F_1 [N]		80 - 800	80 - 1,000
Progression ratio (F_2/F_1)		~1.30	~1.20
Release force [N]		$0.25 \times F_1$	
Release travel, short [mm]		< 0.5	
Release travel, normal [mm]		2,5 - 3,5	
Recommended installation position		piston rod pointing downwards	
Permissible operating temperature		-20 °C to +60 °C	
Permissible storage temperature		-20 °C to +80 °C	
Color tube			

Bowden cable

SUSPA supplies a wide variety of bowden cables in various lengths and designs. They can be operated by means of buttons or levers.

i For the bowden cables the following parameters can be selected: length, low friction casing, cables, adjustment elements



Example for bowden cables

Rigid locking

i For the lockable gas springs the following parameters can be selected: length, color, fitting, diameter

HY1	HY3	HY4	HY6	VOB18-1
on piston rod side				on tube side
3.6 x F ₁ *	5.8 x F ₁ *	10,000*	1,200*	3,000*
6,500*	10,000*	10,000*	1,200*	3,000*
3,500*	7,000*	4.8 x F ₁ *	1.6 x F ₁ *	1.5 x F ₁ *
3,500*	7,000*	7,000*	1.6 x F ₁ *	1.5 x F ₁ *
22	28	28	27	28
10				
2.6 x stroke + 76	2.4 x stroke + 76	2.6 x stroke + 85	2 x stroke + 100	2 x stroke + 90
10 - 300	10 - 450	10 - 300	150 - 450	20 - 300
<i>see below</i>				
80 - 800	80 - 1,000		70 - 400	150 - 1,000
~1.60	~1,50	~1.60	~1.60	~1.70
0.25 x F ₁				0.4 x F ₁
< 0.5				-
2,5 - 3,5				
any	any	piston rod pointing downwards	any	any
-20 °C to +60 °C			-10 °C to +60 °C	-20 °C to +60 °C
-20 °C to +80 °C				
● silver-gray		○ white		● black

Release systems

* Depending on the length of the piston rod (stroke) and extension force, restrictions may apply.

Lever with bowden cable



Metal lever



Buttons

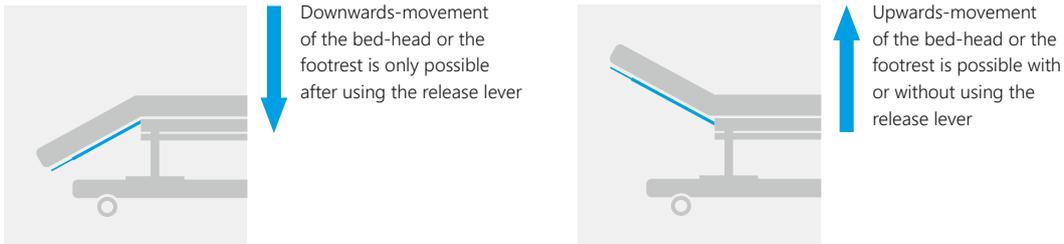


Examples for buttons

Lockline OverloadProtection OP

for lockable gas struts HY3 and HY4

The **special function OverloadProtection OP** for the lockable gas struts HY3 and HY4 is used for the safe adjustment of the application in the extension direction without release. Thus, for example, massage couches, armrests and footrests can be adjusted comfortably and intuitively without using the release lever:



Operating mode

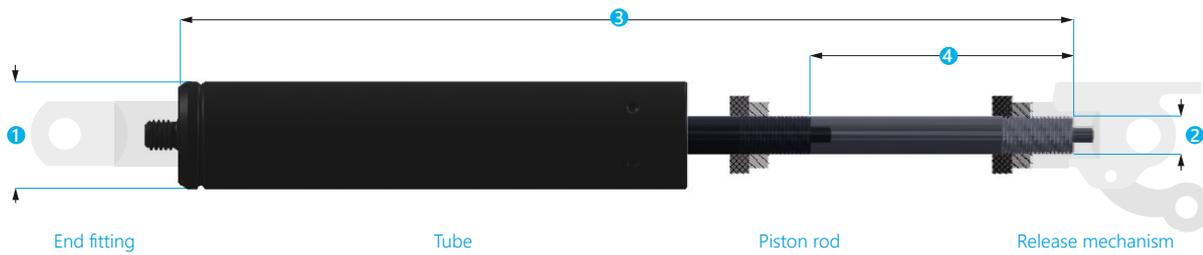
Upon exceeding a defined force in the extension direction, a valve opens and an adjustment in the extension direction is possible without using the release lever. Until this limited force is reached, the gas strut locks on extension as well as on compression load according to the selected types HY3 or HY4.



Advantages

- Adjustment in extension direction without using the release lever
- Infinitely lockable
- Intuitive adjustment
- Long lifetime
- Installation independent on position in case of HY3
- Enables use with one hand

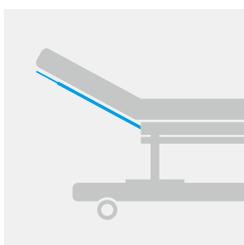
Specification of lockable gas struts HY3 and HY4



Specification		HY3	HY4
Release pin		on piston rod side	
In compression direction	rigid until [N]	$5.8 \times F_1^*$	10,000*
	max. load [N]	10,000*	10,000*
In extension direction	rigid until [N]	$\approx 0.5 \times F_1^*$	$\approx 0.5 \times F_1^*$
	max. load [N]	7,000*	$4.8 \times F_1^*$
① Tube diameter [mm]		28	
② Piston rod diameter [mm]		10	
③ Min. installation length L_{out} [mm]		$2.4 \times Hub + 81$	$2.6 \times Hub + 90$
④ Stroke [mm]		10 - 450	10 - 300
Bowden cable		see page 4-5	
Release force F_1 [N]		200 - 1,000 N	
Progression ratio $[F_2 / F_1]$		< 1.4	< 1.5
Release force [N]		$0.25 \times F_1$	
Release travel [mm]		< 3,5	
Recommended installation position		any	piston rod pointing downwards
Operating temperature		-20°C to +60°C	
Storage temperature		-20°C to +80°C	
Color tube		<input type="radio"/> silver-gray <input type="radio"/> white <input checked="" type="radio"/> black	

* Depending on the length of the piston rod (stroke) and extension force, restrictions may apply.

Applications



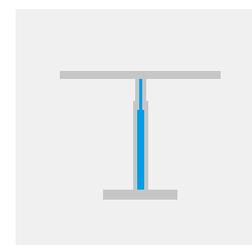
Massage couch



Relax chair



Armrest



Side table

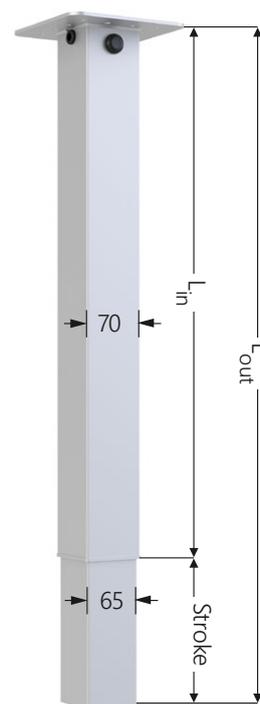
VariBase

Height-adjustable table column (square column)

The pneumatic height adjustable system VariBase is a professional and extremely robust holistic solution for table applications. It is particularly characterized by ease of handling and Plug & Play installation. VariBase stands out for its application with a long service life and offers comfortable height adjustment.

VariBase is available in the version Big Tube Up (BTU) or Big Tube Down (BTD).

Characteristics	Technical data		
Dimension BTU (Big Tube Up)	□ 70/□ 65 mm		
Dimension BTD (Big Tube Down)	□ 60/□ 65 mm		
Length when extended (L_{out})	1,040 mm	815 mm	655 mm
Stroke	400 mm	290 mm	215 mm
Length when compressed (L_{in})	640 mm	525 mm	440 mm
Stroke force	120 N, recommended weight of table top ~ 6 kg, further F_1 -force on request (70 - 400 N)		
Activation/release	Lever or cable release		
Tabletop fitting	Flange adapter (with 12 drillholes, distance 32 mm)		
Base fitting	Flange with 4 x M6		
Non-rotation function	standard		
Colors	<input checked="" type="radio"/> silver-gray <input type="radio"/> white <input type="radio"/> black		



Big Tube Up (BTU)

All dimensions in mm

Features

- Elegant design with square tubes
- Available in versions BTU - Big Tube Up and BTD - Big Tube Down
- Robust guide system
- Available in two versions of gas springs (rigid and elastic locking)
- Non-rotational column
- Quick and easy to adjust
- Plug & Play assembly

Applications

- Overbed tables
- Side table
- Trolleys, carts



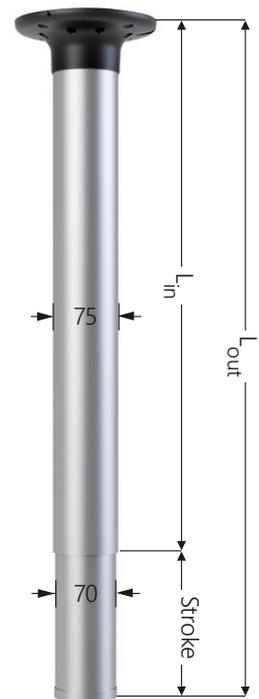
VariStand

Height-adjustable table column (round column)

The VariStand table column is a professional, sophisticated, design-orientated solution for all table and cart applications. It is characterized by its ease of use and plug & play assembly.

VariStand is available in version Big Tube Up (BTU).

Characteristics	Technical data	
Dimension BTU (Big Tube Up)	Ø 75 / Ø 70 mm	
Length when extended (L_{out})	1,040 mm	660 mm
Stroke	415 mm	225 mm
Length when compressed (L_{in})	625 mm	435 mm
Stroke force	120 N, recommended weight of table top ~ 6 kg, further F_1 -force on request (70 - 400 N)	
Activation / release	Lever or cable release	
Tabletop fitting	Flange adapter (with 12 drillholes, distance 32 mm)	
Base fitting	Flange or cone with 3 x M6	
Non-rotation function	standard	
Farben	<input type="radio"/> silver-gray <input type="radio"/> white <input type="radio"/> black <input type="radio"/> bright chrome-plated	



Big Tube Up (BTU)
All dimensions in mm

Features

- Elegant design with round tubes
- Precise and silent roller guide system
- Rigid or elastic locking in any position
- Constant remaining adjustment force in any position
- Optimal anti-twist protection
- Large adjustment range with small installation length
- Quick and easy adjustability
- Easy installation due to plug & play
- Override function: lifting without release actuation (optional)

Applications

- Overbed tables
- Side table
- Trolleys, carts

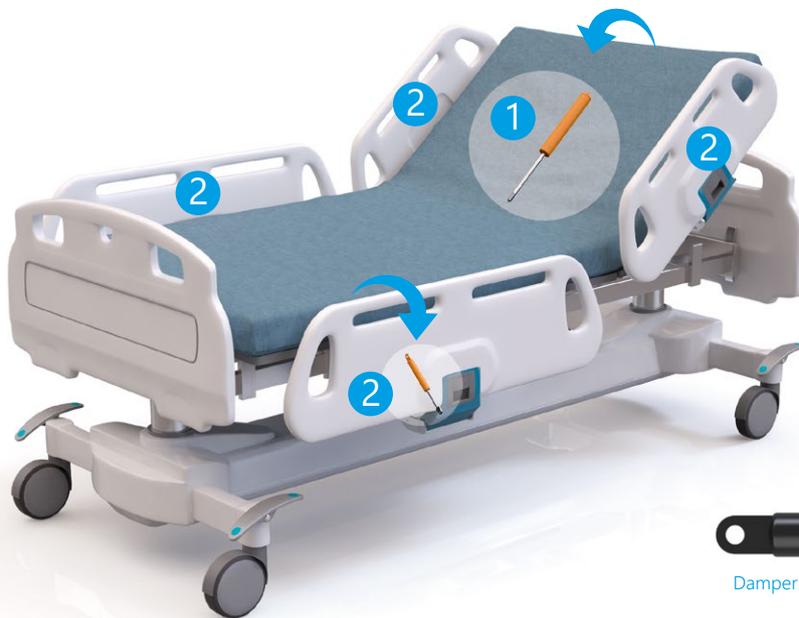
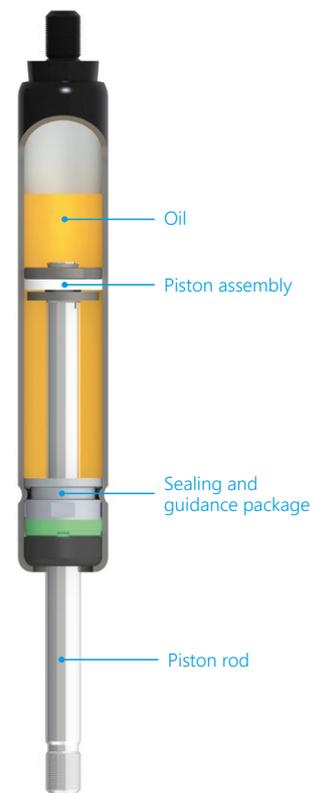


Damper Softline

For a comfortable and vibration-free adjustment of the swivelling bed side rail, our dampers HD15 and HD18 from the Softline series are customizable. The advantages are the small installation space, the variable damping force and the durable economic solution.

Specification of dampers HD15 und HD18

Specification	HD15	HD18
Damping forces in extension and compression direction [N]	50 - 500	50 - 2,000
Tube diameter [mm]	15	18
Piston rod diameter [mm]	6	8
Stroke [mm]	50 - 200	50 - 400
Extension force F_1 [N]	on request	
Recommended installation position	any	
Operating temperature	-20°C to +60°C	
Storage temperature	-20°C to +80°C	
Color tube	<input type="radio"/> silver-gray <input type="radio"/> white <input type="radio"/> black	



Damper Softline for bed side rails

1 Lockable gas spring – Lockline

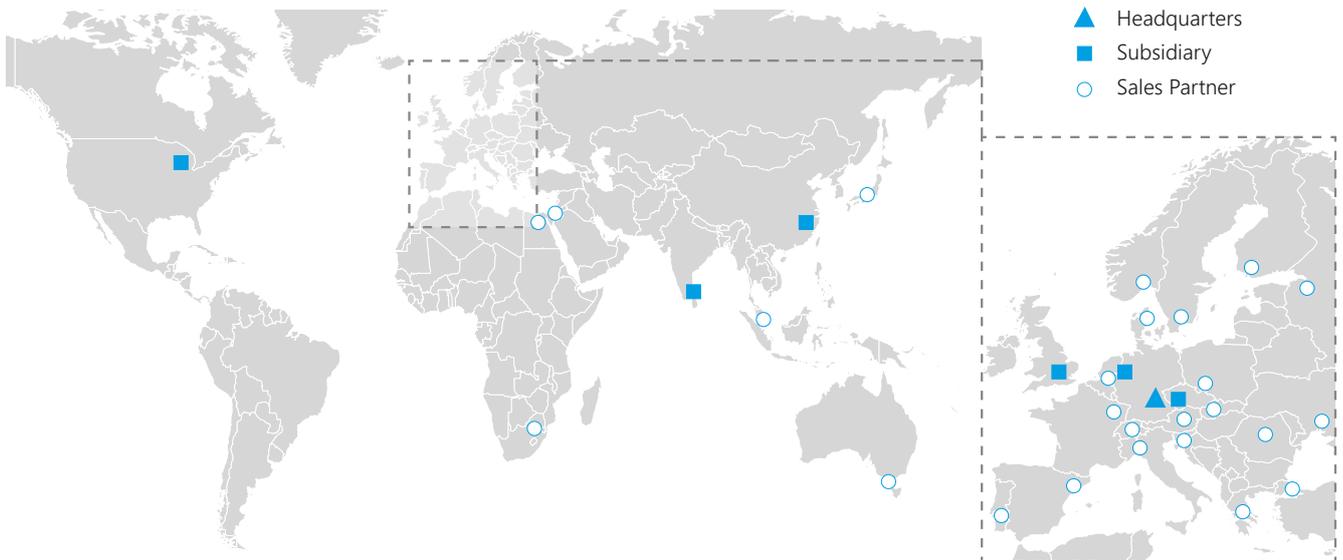
Customized for the variable adjustment of reclining surfaces in hospital beds.

- Rigid or elastic locking
- Direct or indirect release
- Many special functions available

2 Damper – Softline

For a comfortable adjustment of the bed side rails free from vibrations.

- Very small installation space
- Variable layout of damping force and connections
- Durable economic solution



SUSPA – Your strong industrial partner

For more than 60 years, SUSPA products have been present in your daily life - at home in furniture, refrigerators and washing machines, in means of transport like buses, trains and planes, in modern office furniture, in leisure and fitness equipment, but also in hospitals and rehab centers.

Although you may not be able to see our products, we are always there – increasing the comfort and safety level for all of you.

Major players in the automobile, office furniture, industrial, transportation, appliance, health care, leisure, and gaming industries depend on SUSPA as a developmental and systems solution partner. Our engineers and technical sales team will work seamlessly with your staff on a wide variety of projects, committed to providing the most effective solution for your organization.

Reliability as the highest standard

Requirements on quality are increasing in the automotive industry as well as in other industry sectors. SUSPA certifications according to IATF 16949 have therefore been an integral part.

Effective quality management from purchasing to production and sales and on to final application secures the worldwide great reputation and reliability of SUSPA products.

SUSPA moves.

With more than 2,000 employees worldwide SUSPA manufactures gas springs, dampers, adjustment systems as well as crash and safety systems for many sectors; from furniture through to automobile industry.

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