FIBRO

PRODUCT CATALOG

Composite plate systems

↗ from FIBRO

precision is our standard

PED
2014/68/EU

Composite plate systems
General

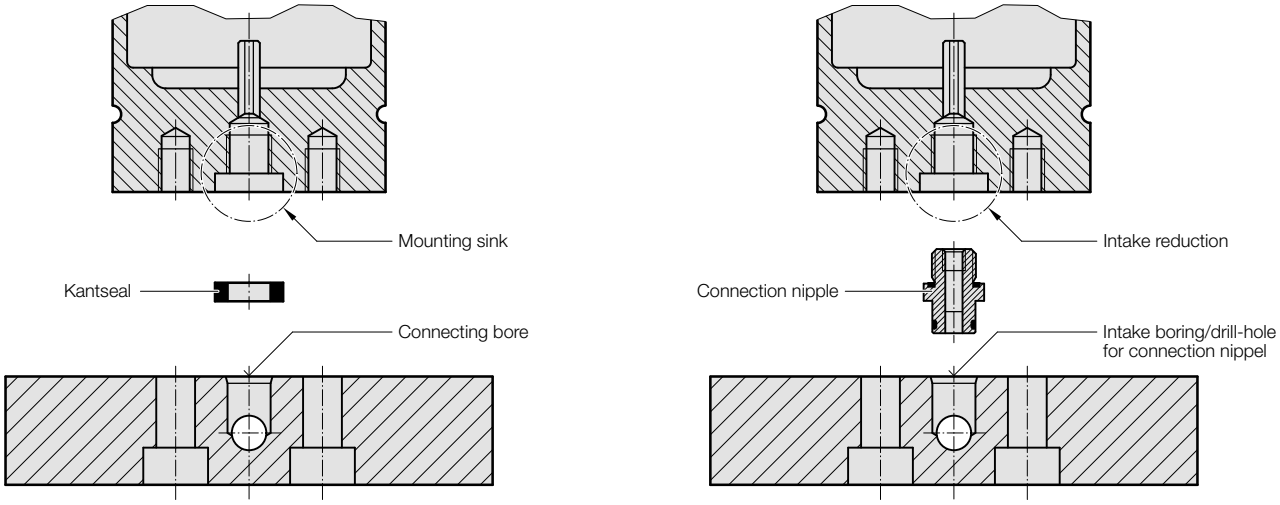
The connection of gas compression springs in one or more systems offers the user the option to monitor the gas pressure of the gas compression springs outside the tool, adjusting them as required, filling them and discharging them.

The advantages of the composite system lie in the ease of maintenance, safety and quality improvement of the gas pressure spring application in the tool.

Composite plate systems

Composite plate systems are advantageously used where, due to minimal space conditions, there is no option to connect the gas compression springs via tubing in the assembly. Ideally, the bottom-side threaded bores are used for fastening the gas springs. Sealing is implemented either via a connecting nipple or a flat gasket in the spring base as well as with a receiving bore in the composite plate.

Both seal types can be used in the same gas spring



FIBRO – Composite plate systems

+ can be used as an alternative to gas pressure springs in a hose assembly
+ Composite panel gas springs are flat-sealing or can be used with a connecting nipple.
+ Edge seal and connecting nipple are both included in the scope of supply.
+ offers high ease of maintenance with long maintenance intervals
+ no hose connections necessary between the gas pressure springs
+ Leak-tightness guarantee even with frequent installation or removal of the system
+ no special tools required for set-up and disassembly
+ is approved under Pressure Equipment Directive 2014/68/EU and assembled ready for installation
+ Gas springs can be repaired, see appendix for order numbers for replacement part sets.

Further information:

+ Customer-specific design of the FIBRO composite panel by qualified personnel
+ individual machining according to customer specifications
+ Quick availability of composite panel gas springs
+ Control fittings with hose lines or optionally mounted directly on composite plate

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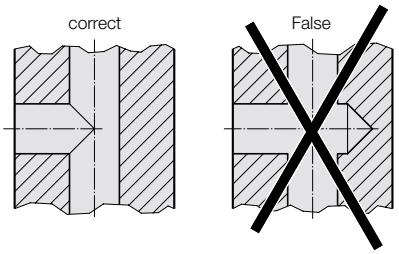
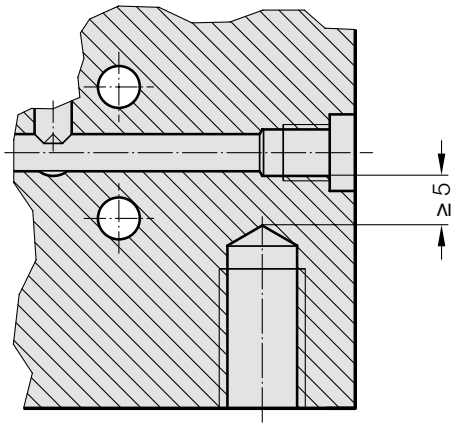
Composite plate systems
Design instructions

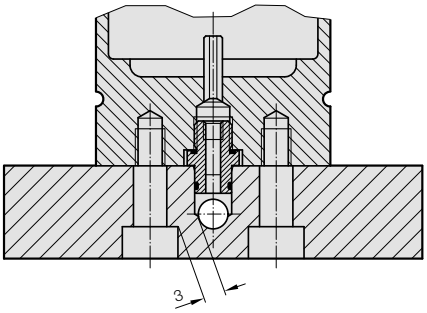
The following figures show the most important general design instructions and minimum dimensions to be observed. Your FIBRO specialist staff will provide you with further information.

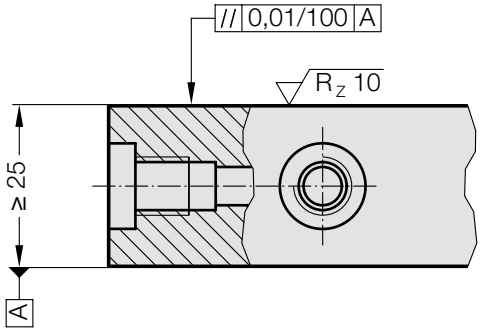
Blind bore holes are to be avoided as otherwise impurities can settle or chip-free cleaning after plate production is made more difficult.



The minimum distance to the deep-hole bore must not be less than 5 mm.







General design instructions

During manufacturing, attention must be paid to the parallelism of the plate.
It is therefore machine-ground to achieve the corresponding surface roughness.

To loosen burr and dirt particles, the deep-hole bores must be brushed out. Unremoved dirt particles can migrate to the sealing surface of the gas springs and destroy it over the medium or long term.

Safety information

Before disassembly, it is essential to release the pressure completely at the designated vent valve on the control fitting.
The reworking of the gas pressure springs and control fittings may only be carried out by FIBRO.

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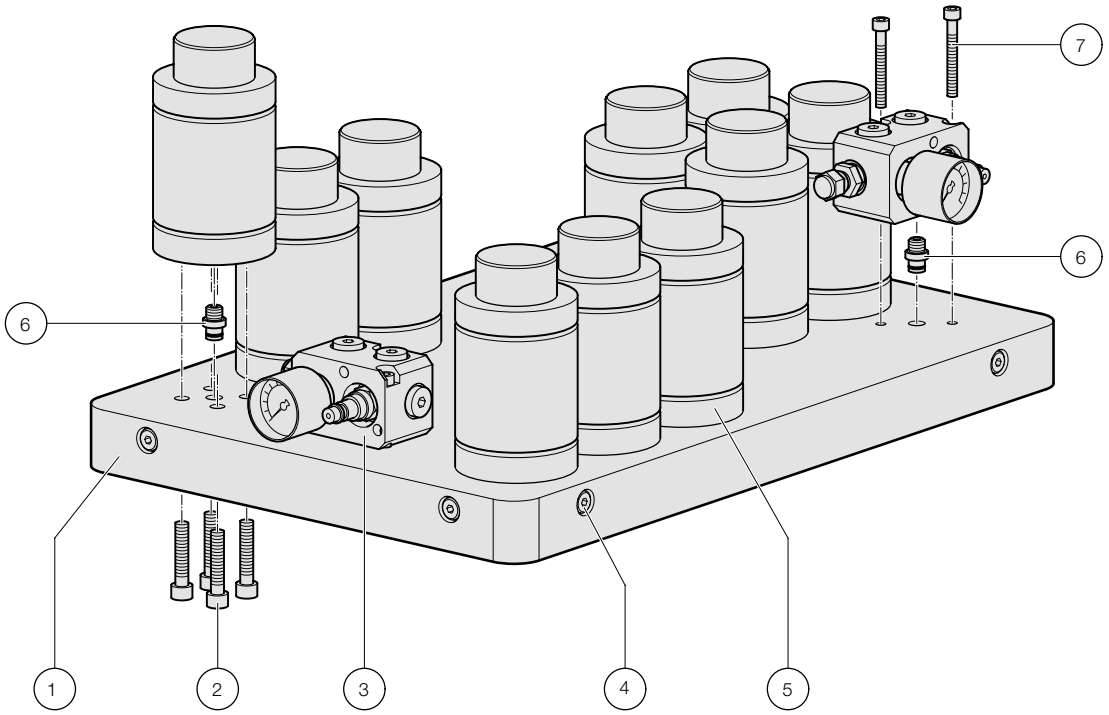
Composite plate systems
Example



Item	Description	Order No.
1	Composite plate	2494.xxxxxxx.xxxx.100
2	Socket head cap screw	2192.12.08.040
3	Control fitting	2480.94.00.31.01.0x
4	Pipe plug G1/8	248.00.43.2
5	Gas spring POWERLINE	2490.95.15.04700.025
6	Connecting nipple	mounted in spring base/control fitting
7	Socket head cap screw	2192.12.06.050

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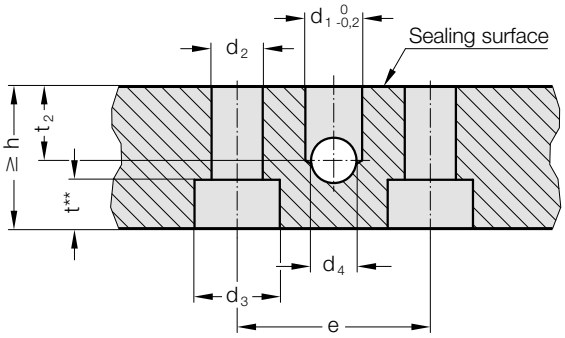
Composite plate systems
2480.95.25. – Gas spring Standard, for composite panel

Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 25 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2480.95.25.00200.	18	5	6,4	11	6	7	6	2	20

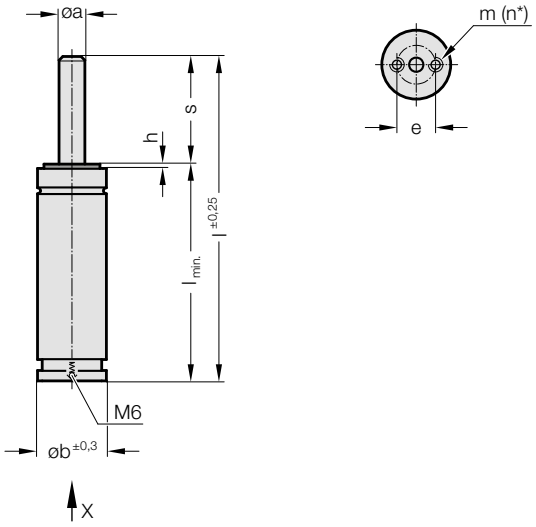
n* Number of gas spring mounting holes

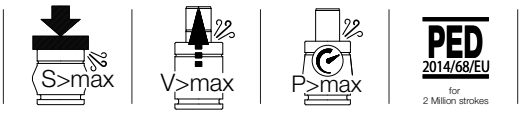
t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Gas spring	Order No. Flap disc DIN 6798 Form A	Order No. Lock washer type "S"
2480.95.25.00200.	2480.95.00.03.06	2480.95.00.04.06

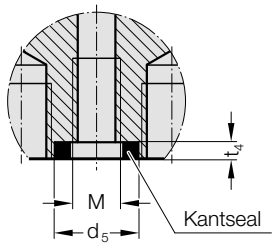
Composite plate systems
2480.95.25. – Gas spring Standard, for composite panel

View/Design X - gas spring





View/Design
gas spring with flat seal



Technical information

Pressure medium: Nitrogen	N_2
Max. filling pressure:	180 bar
Min. filling pressure:	20 bar
Working temperature:	0°C to +80°C
Temperature related force increase:	± 0,3%/°C
Max. recommended extensions per minute:	approx. 80 to 100 (at 20°C)
Max. piston rod speed:	1,8 m/s
Order No for spare parts kit:	see appendix

Ordering Code (example): 2480.95.25.00200.013

	Spring force F in daN at 150 bar/+20°C									
Order No.	**$F_{initial}$**	**F_{final} [1)]**	**øa**	**øb**	**d_5**	**e**	**h**	**m**	**n***	**t_4**
2480.95.25.00200.	180	230	12	32	7,5	18	2	M6 x 8 deep	2	5,2

[1)] at full stroke (s) / * Number of gas spring mounting holes

Order No. Stroke (s)		010	013	016	025	038	050	063	080	100	125
	s	10	12,7	16	25	38,1	50	63,5	80	100	125
2480.95.25.00200. .1	l	70	75,4	82	100	126	150	177	210	250	300
	l_{min}	60	62,7	66	75	88	100	113,5	130	150	175

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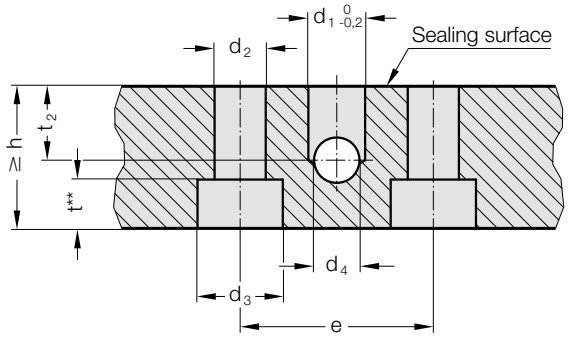
Composite plate systems
2480.95.15. – Gas spring Standard, for composite panel

Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 25 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



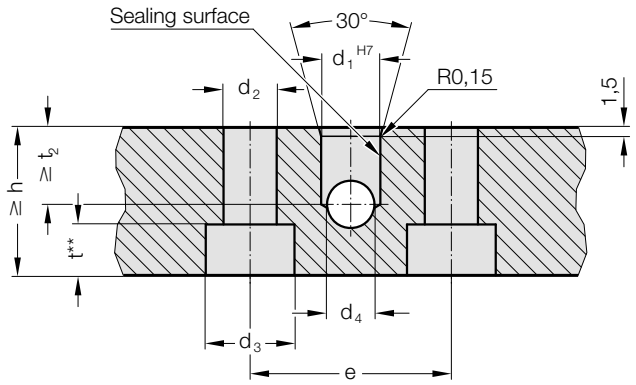
Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2480.95.15.00250.	18	5	6,4	11	6	7	6	2	20
2480.95.15.00500.	20	5	8,4	15	6	9	6	2	20
2480.95.15.00750.	20	5	8,4	15	6	9	6	2	20
2480.95.15.01500.	40	8	8,4	15	8	9	10	4	20
2480.95.15.03000.	60	8	8,4	15	8	9	10	4	20
2480.95.15.05000.	80	8	10,5	18	8	11	10	4	20
2480.95.15.07500.	100	8	10,5	18	8	11	10	4	20
2480.95.15.10000.	120	8	13	20	8	13	10	4	20

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Connection geometry, connecting nipple

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 30 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2480.95.15.00250.	18	6	6,4	11	6	7	13	2	25
2480.95.15.00500.	20	10	8,4	15	6	9	13	2	30
2480.95.15.00750.	20	10	8,4	15	6	9	13	2	25
2480.95.15.01500.	40	10	8,4	15	8	9	13	4	25
2480.95.15.03000.	60	10	8,4	15	8	9	13	4	25
2480.95.15.05000.	80	10	10,5	18	8	11	13	4	25
2480.95.15.07500.	100	10	10,5	18	8	11	13	4	25
2480.95.15.10000.	120	10	13	20	8	13	13	4	25

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Gas spring	Order No. Flap disc DIN 6798 Form A	Order No. Lock washer type "S"
2480.95.15.00250.	2480.95.00.03.06	2480.95.00.04.06
2480.95.15.00500.	2480.95.00.03.08	2480.95.00.04.08
2480.95.15.00750.	2480.95.00.03.08	2480.95.00.04.08
2480.95.15.01500.	2480.95.00.03.08	2480.95.00.04.08
2480.95.15.03000.	2480.95.00.03.08	2480.95.00.04.08
2480.95.15.05000.	2480.95.00.03.10	2480.95.00.04.10
2480.95.15.07500.	2480.95.00.03.10	2480.95.00.04.10
2480.95.15.10000.	2480.95.00.03.12	2480.95.00.04.12

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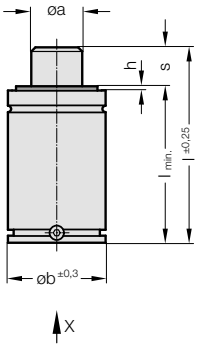
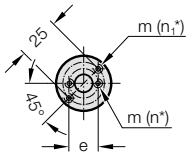
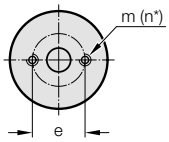
2480.95.15. – Gas spring Standard, for composite panel



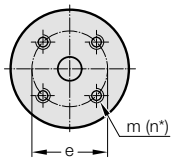
View/Design X - gas spring
2480.95.15.00250.

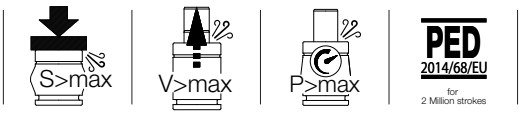


2480.95.15.00500.-.00750.

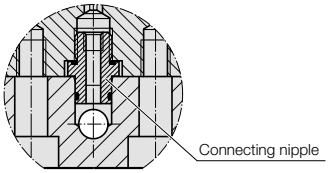


2480.95.15.01500. - .10000.

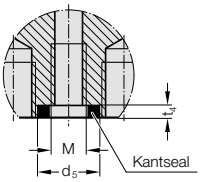




View
Gas pressure spring with connecting nipple



View/Design
gas spring with flat seal



Technical information

Pressure medium: Nitrogen	N_2
Max. filling pressure:	150 bar
Min. filling pressure:	20 bar
Working temperature:	0°C to +80°C
Temperature related force increase:	± 0,3%/°C
Max. recommended extensions per minute:	approx. 15 to 50 (at 20°C)
Max. piston rod speed:	1,8 m/s
Order No for spare parts kit:	see appendix

Ordering Code (example): 2480.95.15.00500.013

Spring force F in daN at 150 bar/+20°C

Order No.	$F_{initial}$	F_{final} [1)]	øa	øb	d_5	e	h	M	m	n*	t_4
2480.95.15.00250. [2)]	260	305 - 355	15	38	7,5	18	2	M6	M6 x 8 deep	2	5,2
2480.95.15.00500. [2)]	470	614 - 741	20	45	11	20	2	M7	M8 x 13 deep	2	3,5
2480.95.15.00750. [2)]	740	922 - 1250	25	50	11	20	3	M7	M8 x 13 deep	2	3,5
2480.95.15.01500.	1530	1831 - 2298	36	75	15	40	3	G1/8	M8 x 13 deep	4	4,5
2480.95.15.03000.	2945	3532 - 4582	50	95	15	60	3	G1/8	M8 x 13 deep	4	4,5
2480.95.15.05000.	4980	6344 - 7954	65	120	15	80	3	G1/8	M10 x 16 deep	4	4,5
2480.95.15.07500.	7540	9357 - 11736	80	150	15	100	3	G1/8	M10 x 16 deep	4	4,5
2480.95.15.10000.	10600	12918 - 16046	95	195	15	120	3	G1/8	M12 x 16 deep	4	4,5

[1)] at full stroke (s) / * Number of gas spring mounting holes / [2)] without lateral filling connection on the cylinder tube

Order No. Stroke (s)		010	013	016	019	025	038	050	063	075	080	088	100	113	125	138	150	160	175	200	225	250	275	300
	s	10	12,7	16	19	25	38,1	50	63,5	75	80	87,5	100	112,5	125	137,5	150	160	175	200	225	250	275	300
2480.95.15.00250.	l	70	75,4	82	88	100	126	150	177	-	210	-	250	-	125	-	-	-	-	-	-	-	-	-
	$l_{min.}$	60	62,7	66	69	75	88	100	113,5	-	130	-	150	-	175	-	-	-	-	-	-	-	-	-
2480.95.15.00500.	l	105	110,4	-	-	135	161	185	212	-	245	-	285	-	335	-	-	405	-	485	-	-	-	-
	l_{min}	95	97,7	-	-	110	123	135	148,5	-	165	-	185	-	210	-	-	245	-	285	-	-	-	-
2480.95.15.00750.	l		120,4	-	-	145	171	195	222	245	255	270	295	320	345	370	395	415	445	495	545	595	645	695
	l_{min}		107,7	-	-	120	133	145	158,5	170	175	182,5	195	207	220	232	245	255	270	295	320	345	370	395
2480.95.15.01500.	l	-	135	-	-	160	186	210	237	260	270	285	310	335	360	385	410	430	460	510	560	610	660	710
	l_{min}	-	122	-	-	135	148	160	173,5	185	190	197,5	210	222,5	235	247,5	260	270	285	310	335	360	385	410
2480.95.15.03000.	l	-	145	-	-	170	196	220	247	270	280	295	320	345	370	395	420	440	470	520	570	620	670	720
	$l_{min.}$	-	132	-	-	145	158	170	183,5	195	200	207,5	220	232	245	257	270	280	295	320	345	370	395	420
2480.95.15.05000.	l	-	-	-	-	190	216	240	267	290	300	315	340	365	390	415	440	460	490	540	590	640	690	740
	$l_{min.}$	-	-	-	-	165	178	190	203,5	215	220	227,5	240	252,5	265	277,5	290	300	315	340	365	390	415	440
2480.95.15.07500.	l	-	-	-	-	205	231	255	282	305	315	330	355	380	405	430	455	475	505	555	605	655	705	755
	$l_{min.}$					180	193	205	218,5	230	235	242,5	255	267	280	292	305	315	330	355	380	405	430	455
2480.95.15.10000.	l	-	-	-	-	210	236	260	287	-	320	-	360	-	410	-	-	480	-	560	-	660	-	760
	$l_{min.}$	-	-	-	-	185	198	210	223,5	-	240	-	260	-	285	-	-	320	-	360	-	410	-	460

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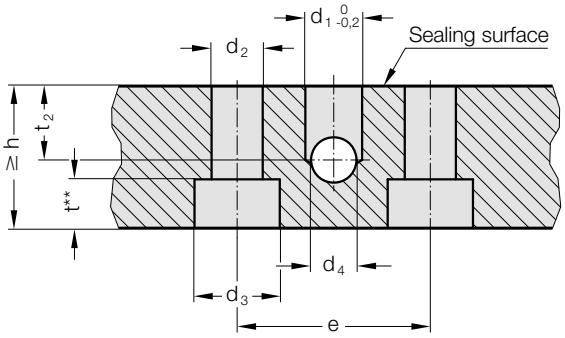
Composite plate systems
2487.95.15. – Gas spring POWERLINE, for composite panel

Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 25 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



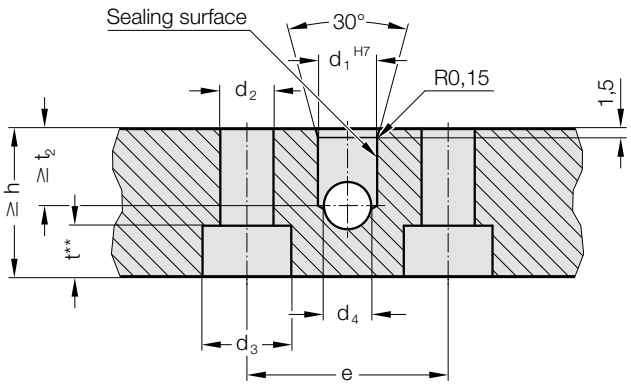
Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2487.95.15.00350.	20	5	6,4	11	6	7	6	2	20
2487.95.15.00500.	20	5	6,4	11	6	7	6	2	20
2487.95.15.00750.	20	5	6,4	11	6	7	6	2	20
2487.95.15.01000.	20	5	8,4	15	6	9	6	2	20
2487.95.15.01500.	20	5	8,4	15	6	9	6	2	20
2487.95.15.02400.	40	5	8,4	15	8	9	10	4	20
2487.95.15.04200.	60	8	8,4	15	8	9	10	4	20
2487.95.15.06600.	80	8	10,5	18	8	11	10	4	20
2487.95.15.09500.	100	8	10,5	18	8	11	10	4	20
2487.95.15.20000.	120	8	13	20	8	13	10	4	20

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Connection geometry, connecting nipple

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 30 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2487.95.15.00350.	20	6	6,4	11	6	6,8	13	2	25
2487.95.15.00500.	20	6	6,4	11	6	6,8	13	2	25
2487.95.15.00750.	20	10	6,4	11	6	6,8	13	2	25
2487.95.15.01000.	20	10	8,4	15	6	9	13	2	30
2487.95.15.01500.	20	10	8,4	15	6	9	13	2	30
2487.95.15.02400.	40	10	8,4	15	8	9	13	4	25
2487.95.15.04200	60	10	8,4	15	8	9	13	4	25
2487.95.15.06600.	80	10	10,5	18	8	11	13	4	25
2487.95.15.09500.	100	10	10,5	18	8	11	13	4	25
2487.95.15.20000.	120	10	13	20	8	13	13	4	25

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Gas spring	Order No. Flap disc DIN 6798 Form A	Order No. Lock washer type "S"
2487.95.15.00350.	2480.95.00.03.06	2480.95.00.04.06
2487.95.15.00500.	2480.95.00.03.06	2480.95.00.04.06
2487.95.15.00750.	2480.95.00.03.06	2480.95.00.04.06
2487.95.15.01000.	2480.95.00.03.08	2480.95.00.04.08
2487.95.15.01500.	2480.95.00.03.08	2480.95.00.04.08
2487.95.15.02400.	2480.95.00.03.08	2480.95.00.04.08
2487.95.15.04200.	2480.95.00.03.08	2480.95.00.04.08
2487.95.15.06600.	2480.95.00.03.10	2480.95.00.04.10
2487.95.15.09500.	2480.95.00.03.10	2480.95.00.04.10
2487.95.15.20000.	2480.95.00.03.12	2480.95.00.04.12

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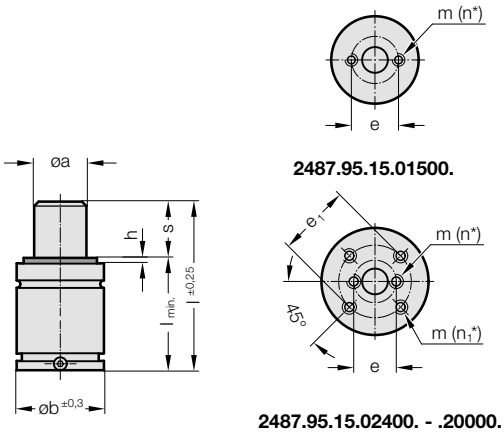
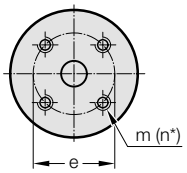
Composite plate systems
2487.95.15. – Gas spring POWERLINE, for composite panel

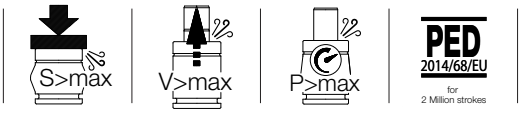
View/Design X - gas spring
2487.95.15.00350./.00500./.00750./.01000.



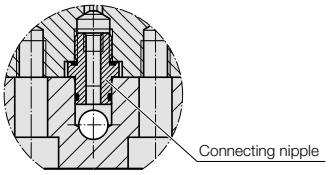
2487.95.15.01500.

2487.95.15.02400. - .20000.

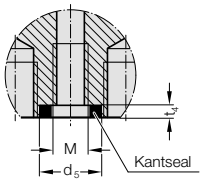




View
Gas pressure spring with connecting nipple



View/Design
gas spring with flat seal



Technical information

Pressure medium: Nitrogen	N_2
Max. filling pressure:	180 bar
Min. filling pressure:	20 bar
Working temperature:	0°C bis +80°C
Temperature related force increase:	± 0,3%/°C
Max. recommended extensions per minute:	approx. 20 to 100 (at 20°C)
Max. piston rod speed:	1,8 m/s
Order No for spare parts kit:	see appendix

Ordering Code (example): 2487.95.15.00350.013

Spring force F in daN at 150 bar/+20°C

Order No.	$F_{initial}$	F_{final} [1)]	øa	øb	d_5	e	e_1	h	M	m	n*	n_1	t_4
2487.95.15.00350. [2)]	360	531 - 606	16	32	7,5	20	-	2	M6	M6 x 6 deep	2	-	5,2
2487.95.15.00500. [2)]	470	696 - 801	20	38	7,5	20	-	2	M6	M6 x 6 deep	2	-	5,2
2487.95.15.00750.	740	1118 - 1300	25	45	11	20	-	2	M7	M8 x 6 deep	2	-	3,5
2487.95.15.01000.	920	1321 - 1629	28	50	11	20	-	3	M7	M8 x 6 deep	2	-	3,5
2487.95.15.01500. [2)]	1530	2089 - 2628	36	63	11	20	40	3	M7	M8 x 6 deep	2	4	3,5
2487.95.15.02400.	2385	3279 - 4183	45	75	11	40	-	3	M7	M8 x 6 deep	4	-	3,5
2487.95.15.04200.	4240	6103 - 7639	60	95	15	60	-	3	G1/8	M8 x 12 deep	4	-	4,5
2487.95.15.06600.	6630	9141 - 11669	75	120	15	80	-	3	G1/8	M10 x 12 deep	4	-	4,5
2487.95.15.09500.	9540	13135 - 16216	90	150	15	100	-	3	G1/8	M10 x 13 deep	4	-	4,5
2487.95.15.20000.	19910	27636 - 37526	130	195	15	120	-	3	G1/8	M12 x 16 deep	4	-	4,5

[1)] at full stroke (s) / * Number of gas spring mounting holes / [2)] without lateral filling connection on the cylinder tube

Order No. Stroke (s)		010	013	016	019	025	032	038	050	063	075	080	100	125
	s	10	13	16	19	25	32	38	50	63	75	80	100	125
2487.95.15.00350.	l	50	56	62	68	80	94	106	130	156	180	190	230	280
	$l_{min.}$	40	43	46	49	55	62	68	80	93	105	110	130	155
2487.95.15.00500.	l	50	56	62	68	80	94	106	130	156	180	190	230	280
	$l_{min.}$	40	43	46	49	55	62	68	80	93	105	110	130	155
2487.95.15.00750.	l	52	58	64	70	82	96	108	132	158	182	192	232	282
	$l_{min.}$	42	45	48	51	57	64	70	82	95	107	112	132	157
2487.95.15.01000.	l	-	64	70	76	88	102	114	138	164	188	198	238	288
	$l_{min.}$	-	51	54	57	63	70	76	88	101	113	118	138	163
2487.95.15.01500.	l	-	70	76	82	94	108	120	144	170	194	204	244	294
	$l_{min.}$	-	57	60	63	69	76	82	94	107	119	124	144	169
2487.95.15.02400.	l	-	-	77	83	95	109	121	145	171	195	205	245	295
		-	-	61	64	70	77	83	95	108	120	125	145	170
2487.95.15.04200.	l	-	-	90	96	108	122	134	158	184	208	218	258	308
	$l_{min.}$	-	-	74	77	83	90	96	108	121	133	138	158	183
2487.95.15.06600.	l	-	-	100	106	118	132	144	168	194	218	228	268	318
	$l_{min.}$	-	-	84	87	93	100	106	118	131	143	148	168	193
2487.95.15.09500.	l	-	-	-	116	128	142	154	178	204	228	238	278	328
	$l_{min.}$	-	-	-	97	103	110	116	128	141	153	158	178	203
2487.95.15.20000.	l	-	-	-	148	160	174	186	210	236	260	270	310	360
	$l_{min.}$	-	-	-	129	135	142	148	160	173	185	190	210	235

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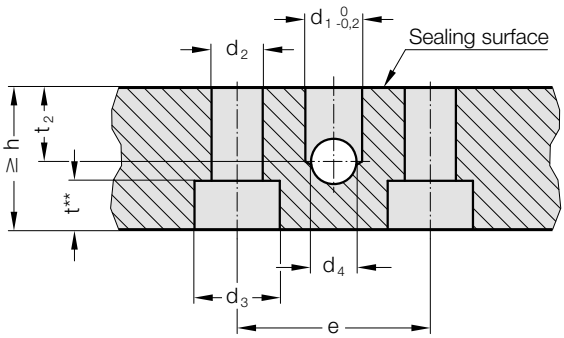
Composite plate systems
2488.95.15. – Gas spring HEAVY DUTY, for composite panel

Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 25 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



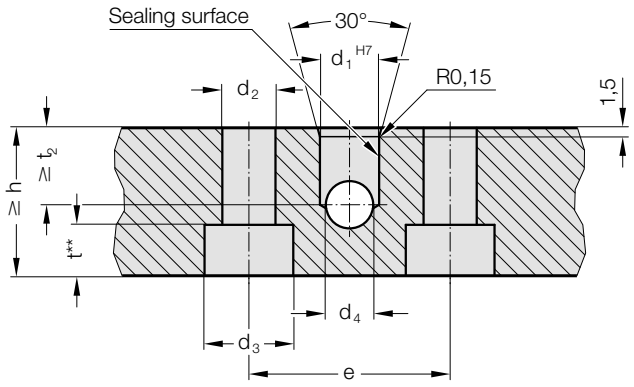
Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2488.95.15.00750.	20	5	8,4	15	6	9	6	2	20
2488.95.15.01000.	20	5	8,4	15	6	9	6	2	20
2488.95.15.01500.	40	5	8,4	15	8	9	10	2	20
2488.95.15.02400.	40	5	8,4	15	8	9	10	4	20
2488.95.15.04200.	60	8	8,4	15	8	9	10	4	20
2488.95.15.06600.	80	8	10,5	18	8	11	10	4	20
2488.95.15.09500.	100	8	10,5	18	8	11	10	4	20
2488.95.15.20000.	120	8	13	20	8	13	10	4	20

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Connection geometry, connecting nipple

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 30 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2488.95.15.00750.	20	10	8,4	15	6	9	13	2	30
2488.95.15.01000.	20	10	8,4	15	6	9	13	2	30
2488.95.15.01500.	40	8	8,4	15	8	9	13	2	25
2488.95.15.02400.	40	10	8,4	15	8	9	13	4	25
2488.95.15.04200	60	10	8,4	15	8	9	13	4	25
2488.95.15.06600.	80	10	10,5	18	8	11	13	4	25
2488.95.15.09500.	100	10	10,5	18	8	11	13	4	25
2488.95.15.20000.	120	10	13	20	8	13	13	4	25

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Gas spring	Order No. Flap disc DIN 6798 Form A	Order No. Lock washer type "S"
2488.95.15.00750.	2480.95.00.03.08	2480.95.00.04.08
2488.95.15.01000.	2480.95.00.03.08	2480.95.00.04.08
2488.95.15.01500.	2480.95.00.03.08	2480.95.00.04.08
2488.95.15.02400.	2480.95.00.03.08	2480.95.00.04.08
2488.95.15.04200.	2480.95.00.03.08	2480.95.00.04.08
2488.95.15.06600.	2480.95.00.03.10	2480.95.00.04.10
2488.95.15.09500.	2480.95.00.03.10	2480.95.00.04.10
2488.95.15.20000.	2480.95.00.03.12	2480.95.00.04.12

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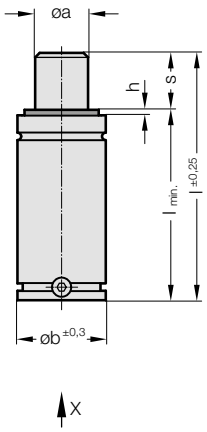
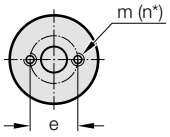
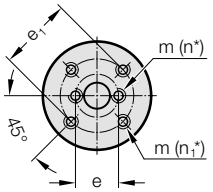
Composite plate systems
2488.95.15. – Gas spring HEAVY DUTY, for composite panel



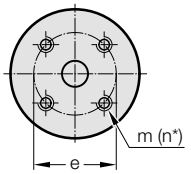
View/Design X - gas spring
2488.95.15.00750. - .01000.

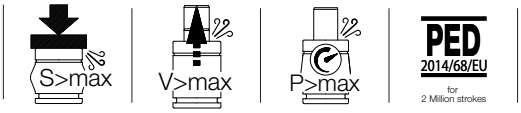


2488.95.15.01500.

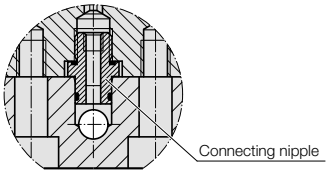


2488.95.15.02400. - .20000.

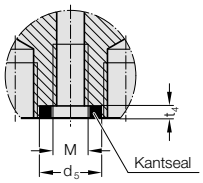




View
Gas pressure spring with connecting nipple



View/Design
gas spring with flat seal



Technical information

Pressure medium: Nitrogen	N_2
Max. filling pressure:	150 bar
Min. filling pressure:	20 bar
Working temperature:	0°C to +80°C
Temperature related force increase:	± 0,3%/°C
Max. recommended extensions per minute:	ca. 20 to 100 (at 20°C)
Max. piston rod speed:	1,8 m/s
Order No for spare parts kit:	see appendix

Ordering Code (example): 2488.95.15.00750.013

	Spring force F in daN at 150 bar/+20°C													
Order No.	**$F_{initial}$**	**F_{final} 1)**	**øa**	**øb**	**d_5**	**e**	**e_1**	**h**	**M**	**m**	**n***	**n_1**	**t_4**
2488.95.15.00750. 2)	740	967 - 1313	25	45	11	20	-	2	M7	M8 x 16 deep	2	-	3,5
2488.95.15.01000. 2)	920	1201 - 1654	28	50	11	20	-	3	M7	M8 x 16 deep	2	-	3,5
2488.95.15.01500.	1530	1982 - 2804	36	63	11	20	40	3	M6	M8 x 16 deep	2	4	3,5
2488.95.15.02400.	2385	3282 - 4230	45	75	15	40	-	3	G1/8	M8 x 16 deep	4	-	4,5
2488.95.15.04200.	4240	5877 - 8123	60	95	15	60	-	3	G1/8	M8 x 16 deep	4	-	4,5
2488.95.15.06600.	6630	8646 - 11846	75	120	15	80	-	3	G1/8	M10 x 16 deep	4	-	4,5
2488.95.15.09500.	9540	12146 - 16152	90	150	15	100	-	3	G1/8	M10 x 16 deep	4	-	4,5
2488.95.15.20000.	19910	26054 - 38067	130	195	15	120	-	3	G1/8	M12 x 16 deep	4	-	4,5

1) at full stroke (s) / * Anzahl der Gasdruckfeder-Befestigungsbohrungen / 2) without lateral filling connection on the cylinder tube

Order No. Stroke (s)		013	025	038	050	063	075	080	100	125	150	160	175	200	250	300
	s	13	25	38	50	63	75	80	100	125	150	160	175	200	250	300
2488.95.15.00750.	l	110,7	135	161	185	211,5	235	245	285	335	385	405	435	485	-	-
	$l_{min.}$	97,7	110	123	135	148,5	160	165	185	210	235	245	260	285	-	-
2488.95.15.01000.	l	120,7	145	171	195	221	245	255	295	345	395	415	445	495	595	695
	$l_{min.}$	107,7	120	133	145	158	170	175	195	220	245	255	270	295	345	395
2488.95.15.01500.	l	120,7	145	171	195	221	245	255	295	345	395	415	445	495	595	695
	$l_{min.}$	107,7	120	133	145	158	170	175	195	220	245	255	270	295	345	395
2488.95.15.02400.	l	-	160	186	210	236	260	270	310	360	410	430	460	510	610	710
		-	135	148	160	173	185	190	210	235	260	270	285	310	360	410
2488.95.15.04200.	l	-	170	196	220	246	270	280	320	370	420	440	470	520	620	720
	$l_{min.}$	-	145	158	170	183	195	200	220	245	270	280	295	320	370	420
2488.95.15.06600.	l	-	190	216	240	266	290	300	340	390	440	460	490	540	640	740
	$l_{min.}$	-	165	178	190	203	215	220	240	265	290	300	315	340	390	440
2488.95.15.09500.	l	-	205	231	255	281	305	315	355	405	455	475	505	555	655	755
	$l_{min.}$	-	180	193	205	218	230	235	255	280	305	315	330	355	405	455
2488.95.15.20000.	l	-	210	236	260	286	310	320	360	410	460	480	510	560	660	760
	$l_{min.}$	-	185	198	210	223	235	240	260	285	310	320	335	360	410	460

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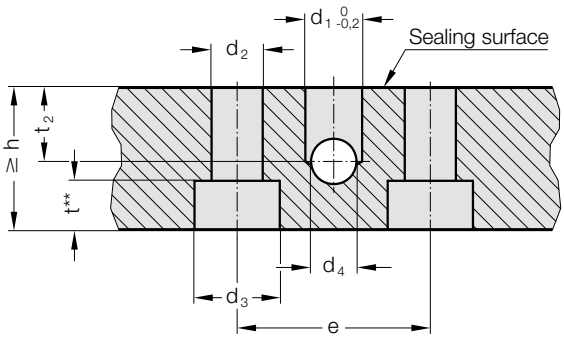
Composite plate systems
2490.95.15. – Gas spring Compact, for composite panel

Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 25 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



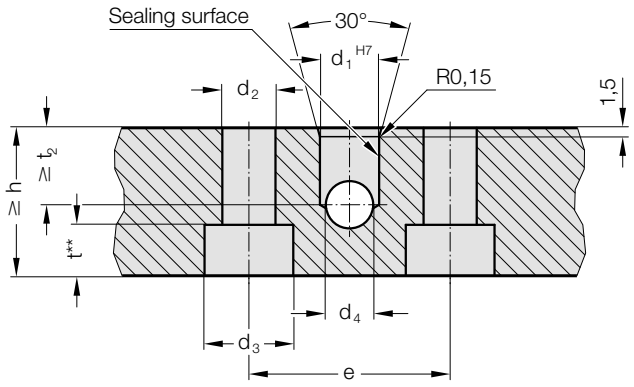
Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2490.95.15.00750.	24	5	6,4	11	6	6,8	6	2	20
2490.95.15.01000.	20	5	6,4	11	6	6,8	6	4	20
2490.95.15.01800.	26	5	6,4	11	6	6,8	10	4	20
2490.95.15.03000.	34	8	8,4	15	8	9	10	4	20
2490.95.15.04700.	40	8	8,4	15	8	9	10	4	20
2490.95.15.07500.	52	8	8,4	15	8	9	10	4	20
2490.95.15.11800.	68	8	10,5	18	8	11	10	4	20
2490.95.15.18300.	90	8	10,5	18	8	11	10	4	20

n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

Connection geometry, connecting nipple

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive and, from a plate thickness of 30 mm, additionally DIN 6798 Form A or SCHNORR® locking washer type "S". (Not included!)



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t**	t_2	n*	h
2490.95.15.00750.	24	8	6,4	11	6	6,8	13	2	25
2490.95.15.01000.	20	8	6,4	11	6	6,8	13	4	25
2490.95.15.01800.	26	10	6,4	11	6	6,8	13	4	25
2490.95.15.03000.	34	10	8,4	15	8	9	13	4	25
2490.95.15.04700.	40	10	8,4	15	8	9	13	4	25
2490.95.15.07500.	52	10	8,4	15	8	9	13	4	25
2490.95.15.11800.	68	10	10,5	18	8	11	13	4	25
2490.95.15.18300.	90	10	10,5	18	8	11	13	4	25

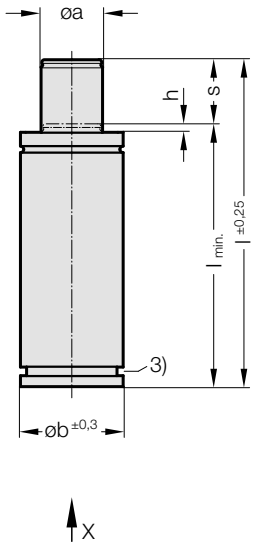
n* Number of gas spring mounting holes

t** Lowering depth without flap washer DIN 6798 Form A or SCHNORR® locking washer type "S"

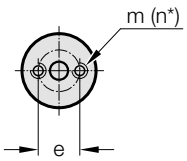
Gas spring	Order No. Flap disc DIN 6798 Form A	Order No. Lock washer type "S"
2490.95.15.00750.	2480.95.00.03.06	2480.95.00.04.06
2490.95.15.01000.	2480.95.00.03.06	2480.95.00.04.06
2490.95.15.01800.	2480.95.00.03.06	2480.95.00.04.06
2490.95.15.03000.	2480.95.00.03.08	2480.95.00.04.08
2490.95.15.04700.	2480.95.00.03.08	2480.95.00.04.08
2490.95.15.07500.	2480.95.00.03.08	2480.95.00.04.08
2490.95.15.11800.	2480.95.00.03.10	2480.95.00.04.10
2490.95.15.18300.	2480.95.00.03.10	2480.95.00.04.10

PED 2014/68/EU

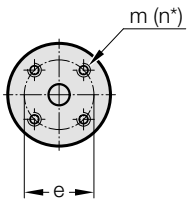
Composite plate systems
2490.95.15. – Gas spring Compact, for composite panel

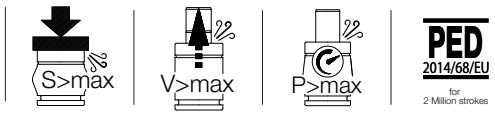


View/Design X - gas spring
2490.95.15.00750.

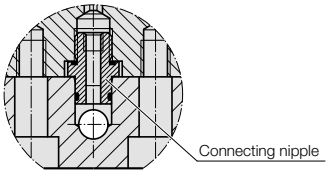


2490.95.15.01000. - .18300.

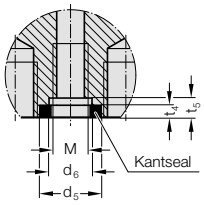




View
Gas pressure spring with connecting nipple



View/Design
gas spring with flat seal



Technical information

Spring size		
Pressure medium: Nitrogen		N_2
Max. filling pressure:		150 bar
Min. filling pressure:		25 bar
Working temperature:		0°C to +80°C
Temperature related force increase:		± 0,3%/°C
Max. recommended extensions per minute:	.00750., .01800. .03000. - .07500.	approx. 50 to 100 (at 20°C) approx. 80 to 100 (at 20°C)
Max. piston rod speed:		0,8 m/s
Order No for spare parts kit:		see appendix

Ordering Code (example): 2490.95.15.00750.010

Spring force F in daN at 150 bar/+20°C

Order No.	$F_{initial}$	F_{final} [1)]	øa	øb	d_5	d_6	e	e_1	h	M	m	n*	t_4	t_5
2490.95.15.00750. [3)]	740	1214 - 1515	13	32	11	-	24	-	4,8	M6	M6 x 8 deep	2	3,5	-
2490.95.15.01000.	1060	1936 - 1753	18	38	11	-	20	-	4,8	M6	M6 x 8 deep	4	3,5	-
2490.95.15.01800.	1885	3026 - 3259	25	50	11	-	26	40	4,8	M7	M6 x 8 deep	4	3,5	-
2490.95.15.03000.	2945	5028 - 5616	32	63	22,2	15	34	-	4,8	G1/8	M8 x 8 deep	4	3	4,5
2490.95.15.04700.	4675	8001 - 7924	45	75	22,2	15	40	-	4,8	G1/8	M8 x 8 deep	4	3	4,5
2490.95.15.07500.	7540	11818 - 12805	55	95	22,2	15	52	-	4,8	G1/8	M8 x 8 deep	4	3	4,5
2490.95.15.11800.	11780	17843 - 18133	70	120	22,2	15	68	-	4,8	G1/8	M10 x 12 deep	4	3	4,5
2490.95.15.18300.	18410	25880 - 28055	95	150	22,2	15	90	-	4,8	G1/8	M10 x 12 deep	4	3	4,5

[1)] at full stroke (s) / * Number of gas spring mounting holes / [3)] without U-groove

Order No. Stroke (s)		006	010	016	025	032	040	050	065
	s	6	10	16	25	32	40	50	65
2490.95.15.00750.	l	63	75	93	120	140	165	195	-
	$l_{min.}$	57	65	77	95	108	125	145	-
2490.95.15.01000.	l	61	78	100	135	167	195	230	-
	$l_{min.}$	55	68	84	110	135	155	180	-
2490.95.15.01800.	l	66	80	106	135	162	190	220	271
	$l_{min.}$	60	70	90	110	130	150	170	206
2490.95.15.03000.	l	-	85	103	130	150	175	205	256
	l_{min}	-	75	87	105	118	135	155	191
2490.95.15.04700.	l	-	80	106	135	167	200	240	273
	$l_{min.}$	-	70	90	110	135	160	190	208
2490.95.15.07500.	l	-	90	116	145	182	210	255	279
	$l_{min.}$	-	80	100	120	150	170	205	214
2490.95.15.11800.	l	-	100	126	155	187	220	260	320
	$l_{min.}$	-	90	110	130	155	180	210	255
2490.94.15.18300.	l	-	110	136	165	197	235	270	323
	$l_{min.}$	-	100	120	140	165	195	220	258

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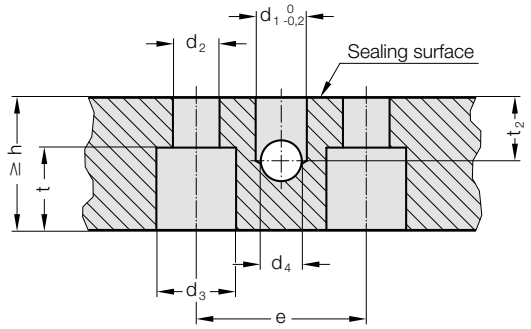
2014/68/EU

Composite plate systems
2497.95.15. – Gas spring MAXFORCE, for composite panel

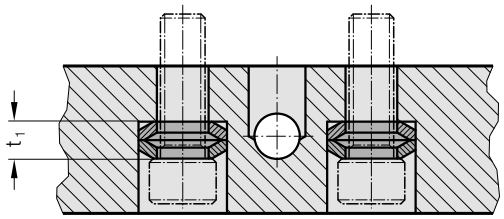
Connection geometry, flat sealing

Note:
We recommend securing the fastening screws with medium-strength threadlocker adhesive (FIBRO 281.243) and the clamping washers included in the scope of delivery (2x per fastening screw).



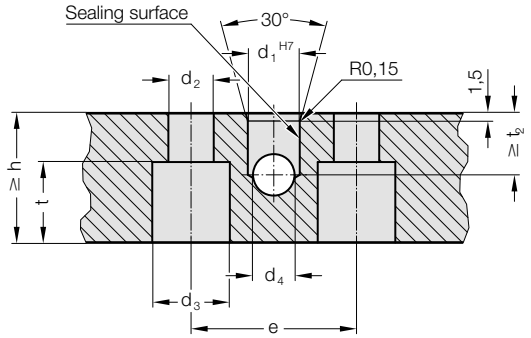
Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t	t_1	t_2	n*	h
2497.95.15.01000.	17	5	6,4	≥10,25	6	≥9,15	3,15	6	2	20
2497.95.15.01900.	26	8	6,4	≥10,25	6	≥9,15	3,15	6	4	20
2497.95.15.03000.	34	8	8,4	≥18,3	8	≥12	4	10	4	20
2497.95.15.04700.	40	8	8,4	≥18,3	8	≥12	4	10	4	20
2497.95.15.07500.	52	8	8,4	≥18,3	8	≥12	4	10	4	20
2497.95.15.12800.	68	8	10,5	≥23,3	8	≥15	5	10	4	20

n* Number of gas spring mounting holes



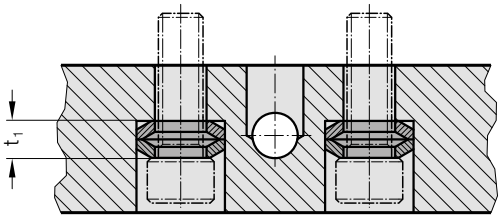
Gas springs Order No. for composite plate connection	Order No. for reorder clamping washer	Note
2497.95.15.01000.	2497.95.00.11.06	-
2497.95.15.01900.	2497.95.00.11.06	-
2497.95.15.03000.	2497.95.00.11.08	-
2497.95.15.04700.	2497.95.00.01.08	DIN 6796
2497.95.15.07500.	2497.95.00.01.08	DIN 6796
2497.95.15.12800.	2497.95.00.01.10	DIN 6796

Connection geometry, connecting nipple



Gas springs Order No. for composite plate connection	e	d_1	d_2	d_3	d_4	t	t_1	t_2	n*	h
2497.95.15.01000.	17	6	6,4	≥10,25	6	≥9,15	3,15	13	2	30
2497.95.15.01900.	26	6	6,4	≥10,25	6	≥9,15	3,15	13	4	25
2497.95.15.03000.	34	6	8,4	≥18,3	8	≥12	4	13	4	25
2497.95.15.04700.	40	10	8,4	≥18,3	8	≥12	4	13	4	25
2497.95.15.07500.	52	10	8,4	≥18,3	8	≥12	4	13	4	25
2497.95.15.12800.	68	10	10,5	≥23,3	8	≥15	5	13	4	25

n* Number of gas spring mounting holes



Gas springs Order No. for composite plate connection	Order No. for reorder clamping washer	Note
2497.95.15.01000.	2497.95.00.11.06	-
2497.95.15.01900.	2497.95.00.11.06	-
2497.95.15.03000.	2497.95.00.11.08	-
2497.95.15.04700.	2497.95.00.01.08	DIN 6796
2497.95.15.07500.	2497.95.00.01.08	DIN 6796
2497.95.15.12800.	2497.95.00.01.10	DIN 6796

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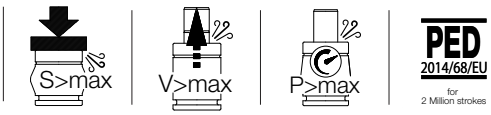
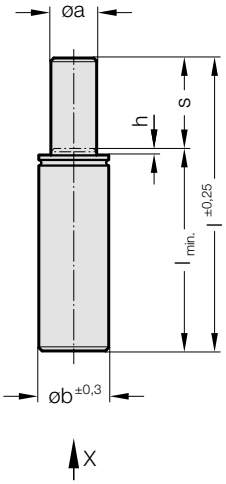
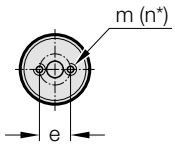
Composite plate systems
2497.95.15. – Gas spring MAXFORCE, for composite panel

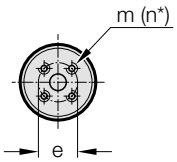


View/Design X - gas spring
2497.95.15.01000.

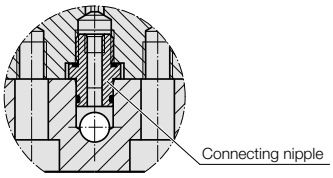




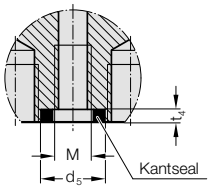
2497.95.15.01900. - .12800.



View
Gas pressure spring with connecting nipple



View/Design
gas spring with flat seal



Technical information

Pressure medium: Nitrogen	N_2
Max. filling pressure:	200 bar
Min. filling pressure:	20 bar
Working temperature:	0°C to +80°C
Temperature related force increase:	± 0,3%/°C
Max. recommended extensions per minute:	approx. 40 to 80 (at 20°C)
Max. piston rod speed:	1,6 m/s
Order No for spare parts kit:	see appendix

Ordering Code (example): 2497.95.15.01900.015

	Spring force F in daN at 150 bar/+20°C										
Order No.	**$F_{initial}$**	**F_{final} [1)]**	**øa**	**øb**	**d_5**	**e**	**h**	**M**	**m**	**n***	**t_4**
2497.95.15.01000.	980	1377 - 1805	25	38	7,5	17	3	M6	M6 x 7 deep	2	5,2
2497.95.15.01900.	1925	2828 - 3642	35	50	14,5	26	3	M8	M6 x 8 deep	4	4,4
2497.95.15.03000.	3180	4461 - 5793	45	63	14,5	34	3	M8	M8 x 8 deep	4	4,4
2497.95.15.04700.	4925	6982 - 9191	56	75	14,5	40	3	G1/8	M8 x 8 deep	4	4,4
2497.95.15.07500.	7700	10242 - 13883	70	95	14,5	52	3	G1/8	M8 x 8 deep	4	4,4
2497.95.15.12800.	12720	17910 - 23928	90	120	14,5	68	3	G1/8	M10 x 8 deep	4	4,4

[1)] at full stroke (s) / * Number of gas spring mounting holes

Order No. Hub (s)		010	015	025	038	050	063	080
	s	10	15	25	38	50	63	80
2497.95.15.01000.	l	75	85	105	135	160	205	240
	$l_{min.}$	65	70	80	97	110	142	160
2497.95.15.01900.	l	-	95	115	150	175	205	245
	$l_{min.}$	-	80	90	112	125	142	165
2497.95.15.03000.	l	-	100	120	150	180	210	250
	$l_{min.}$	-	85	95	112	130	147	170
2497.95.15.04700.	l	-	100	120	150	180	210	250
	l_{min}	-	85	95	112	130	147	170
2497.95.15.07500.	l	-	115	135	165	190	220	260
	$l_{min.}$	-	100	110	127	140	157	180
2497.95.15.12800.	l	-	115	135	165	195	225	265
	$l_{min.}$	-	100	110	127	145	162	185

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2014/68/EU

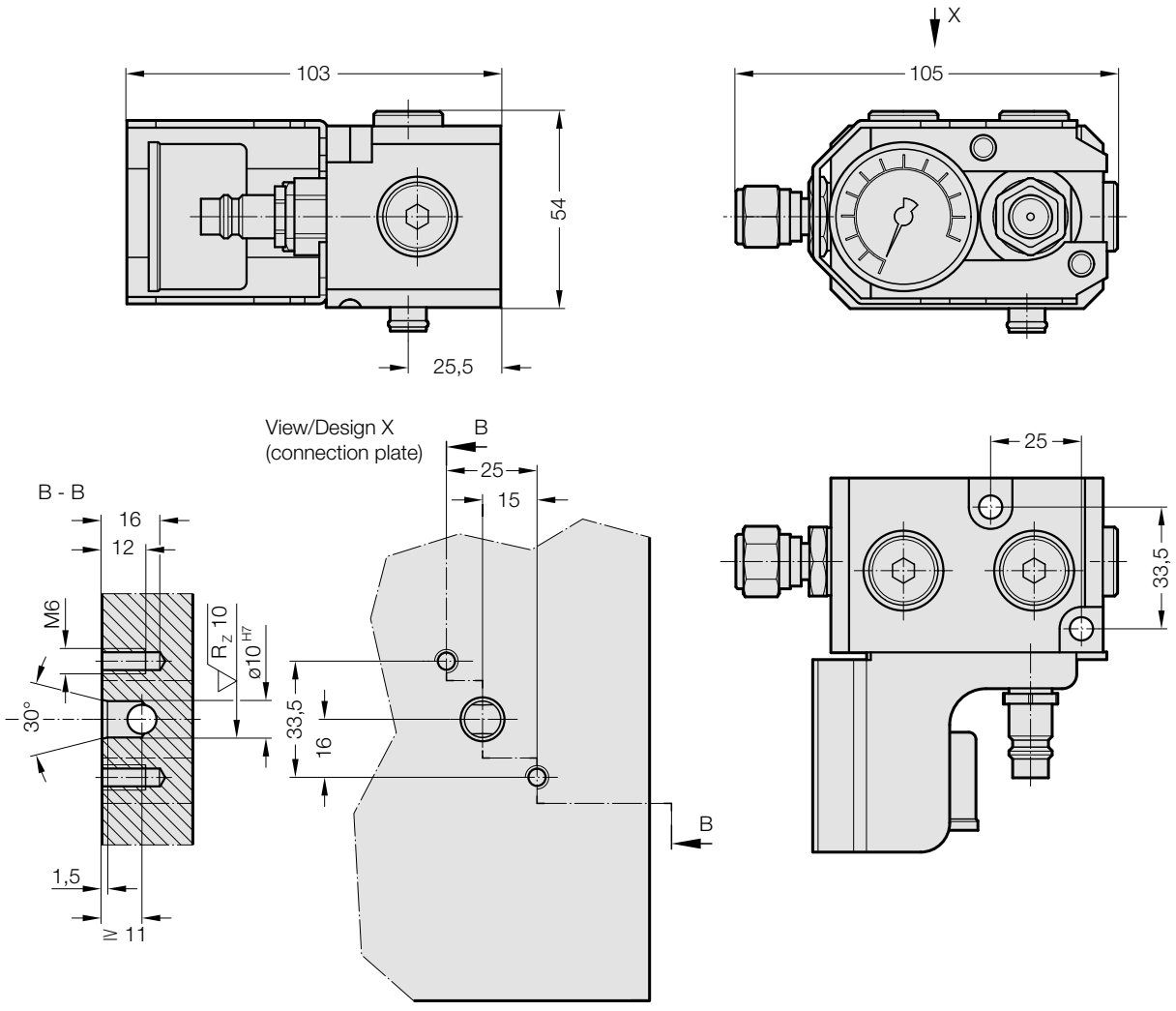
Composite plate systems
2480.94.00.31.01.11 – Control fitting with floor connection

The control valves offer a horizontal (floor) as well as vertical (wall) connection option. Refer to the corresponding connection drawing for the mounting holes.

The central connection offers the user the option to monitor, adjust as required, fill and drain the composite plate system outside the tool.

Depending on its application, the control fitting can either be attached directly to the composite plate or attached to any point of the tool by means of a mini measuring hose.

Depending on the plate thickness, multiple pressure circuits in the composite plate are also possible.



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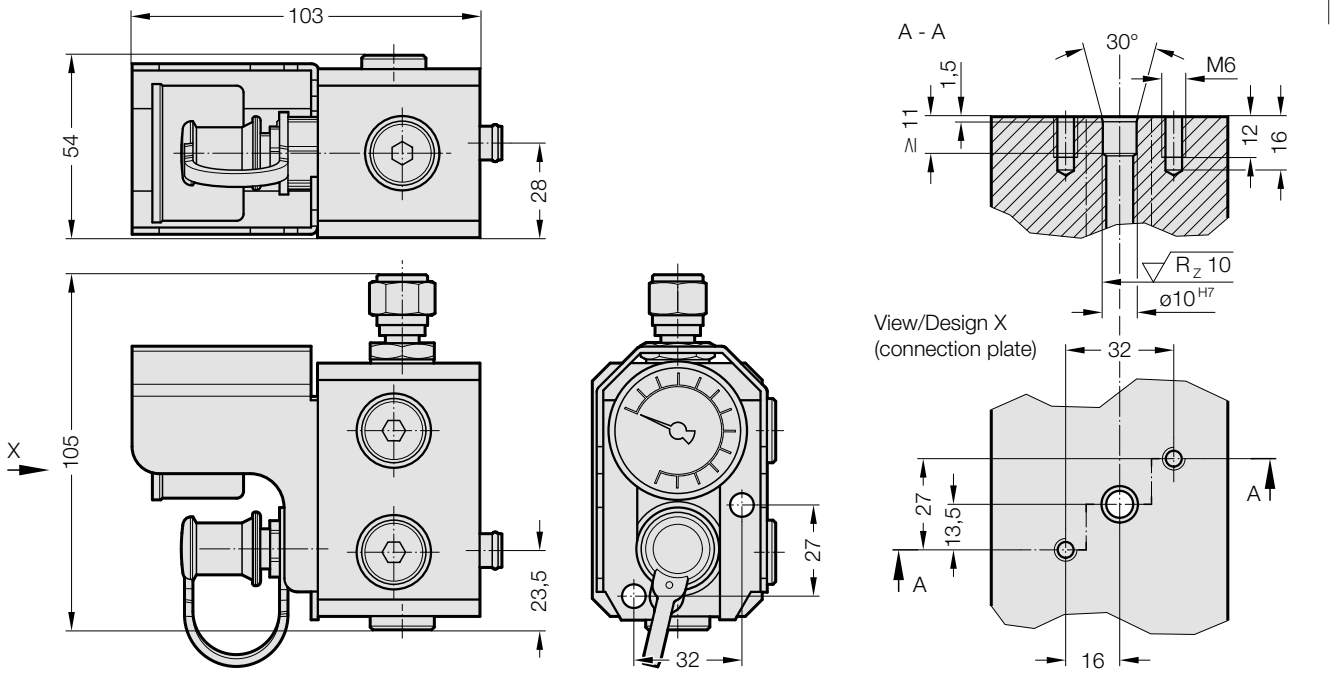
Composite plate systems
2480.94.00.31.01.12 – Control fitting with wall connection



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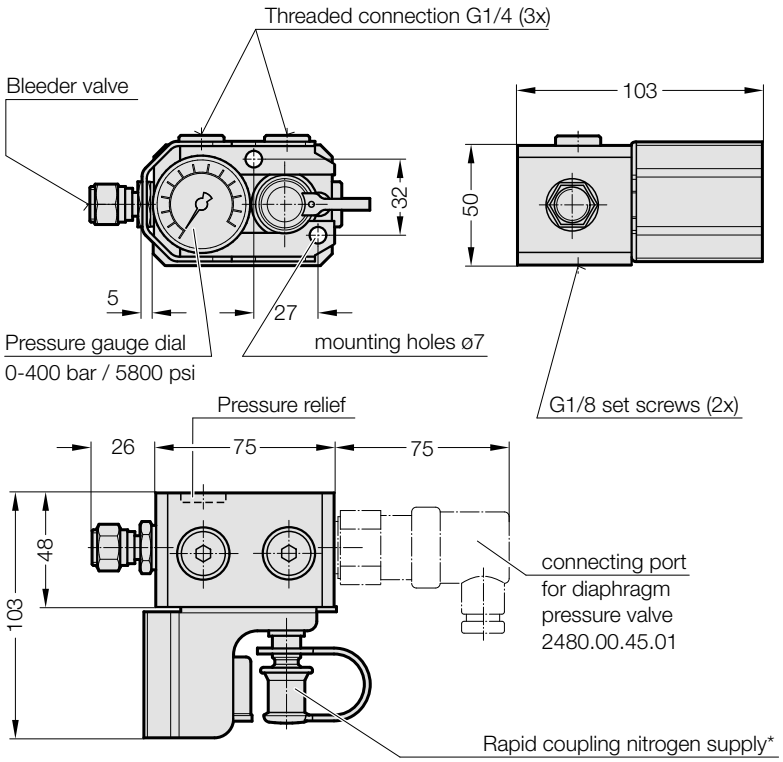
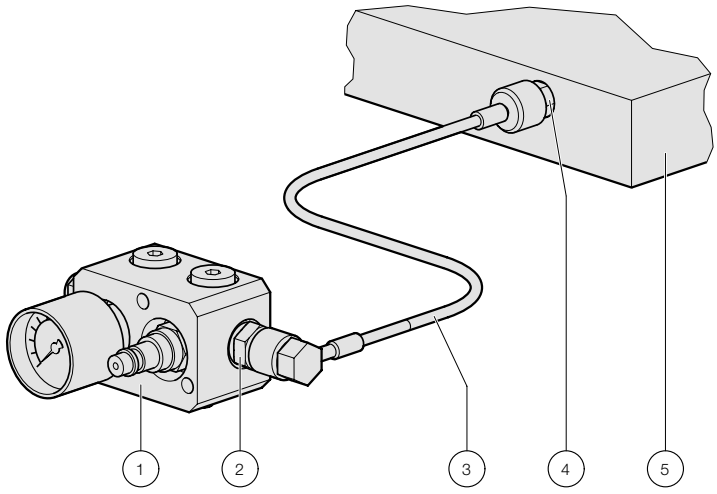
Composite plate systems
2480.00.31.0x.1 – Control fitting with hose fastening

2480.00.31.01.1 **without pressure switch**
2480.00.31.06.1 **with pressure switch**
2480.00.31.07.1 **without pressure switch and with pressure relief**
2480.00.31.08.1 **with pressure switch, with pressure relief**





Item	Description	Order No.
1	Control fitting	2480.00.31.0x.1
2	Measuring coupling without valve G1/4	2480.00.24.04
3	Gauging hose one end straight / 90°-angle	2480.00.23.02.xxxx
4	Measuring coupling without valve G1/8	2480.00.24.03
5	Composite plate	2494. ...

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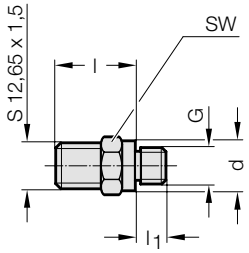
Composite plate systems
2480.00.24. – Gauging coupling

2480.00.24.03/.04

Measuring coupling 2480.00.24.03 without valve for screwing into the composite plate

Measuring coupling 2480.00.24.04 without valve for screwing into the control fitting

2480.00.24.0x.



Order No.	G	d	l	l_1	SW
2480.00.24.03	G $^1/_8$	14	22	8	14
2480.00.24.04	G$^1/_4$	19	21	10	19

SW = Width across flats

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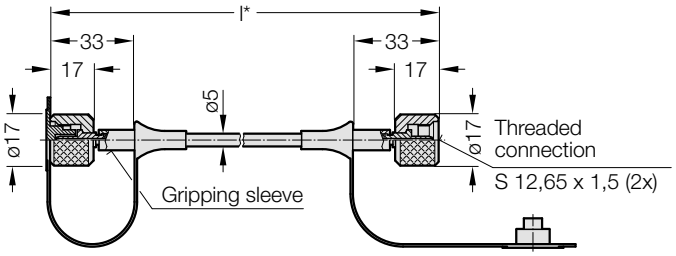
2014/68/EU

Composite plate systems
2480.00.23. – Minimess – Compound threaded joints

2480.00.23.01.

Gauging hose -
both ends straight

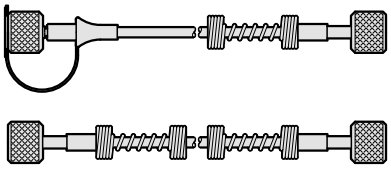


2480.00.23.01.----.1

Antikink spiral, at one end

2480.00.23.01.----.2

Antikink spiral, at both ends



2480.00.23.01.

Order No.	l*
2480.00.23.01.0200	200
2480.00.23.01.0300	300
2480.00.23.01.0400	400
2480.00.23.01.0500	500
2480.00.23.01.0630	630
2480.00.23.01.0800	800
2480.00.23.01.1000	1000
2480.00.23.01.1200	1200
2480.00.23.01.1500	1500
2480.00.23.01.2000	2000
2480.00.23.01.2500	2500
2480.00.23.01.3000	3000

Note:

shortest factory lengths:

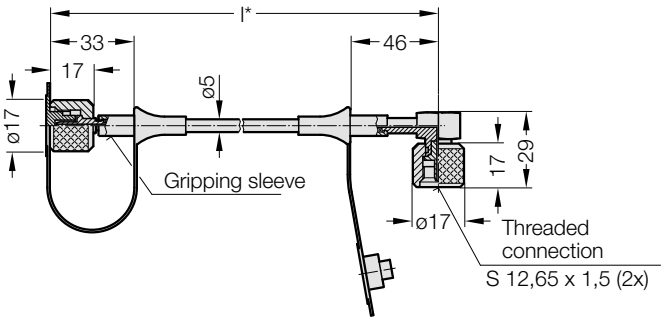
without antikink protection	90 mm
antikink protection at one end	150 mm
antikink protection at both ends	300 mm

* other lengths available in the following gradations:

≤ 1000 mm Gradation	5 mm
> 1000 mm Gradation	10 mm
> 4000 mm Gradation	100 mm
> 6000 mm Gradation	500 mm

2480.00.23.02.

Gauging hose -
one end straight
90°-angle



2480.00.23.02.----.1

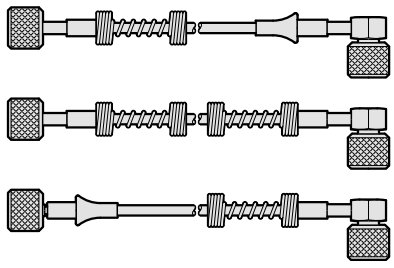
Antikink spiral, at one end, straight

2480.00.23.02.----.2

Antikink spiral, at both ends

2480.00.23.02.----.3

Antikink spiral, at one end, 90°



2480.00.23.02.

Order No.	l*
2480.00.23.02.0200	200
2480.00.23.02.0300	300
2480.00.23.02.0400	400
2480.00.23.02.0500	500
2480.00.23.02.0630	630
2480.00.23.02.0800	800
2480.00.23.02.1000	1000
2480.00.23.02.1200	1200
2480.00.23.02.1500	1500
2480.00.23.02.2000	2000
2480.00.23.02.2500	2500
2480.00.23.02.3000	3000

Note:

shortest factory lengths:

without antikink protection	90 mm
antikink protection at one end	150 mm
antikink protection at both ends	300 mm

* other lengths available in the following gradations:

≤ 1000 mm Gradation	5 mm
> 1000 mm Gradation	10 mm
> 4000 mm Gradation	100 mm
> 6000 mm Gradation	500 mm

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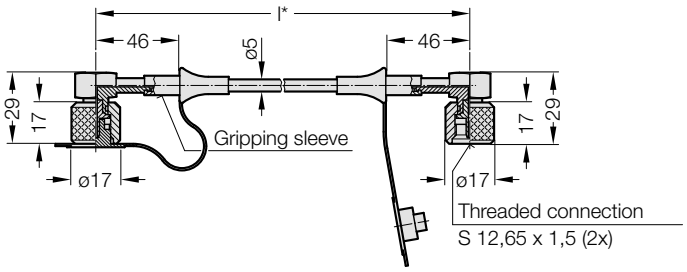
2014/68/EU

Composite plate systems
2480.00.23. – Minimess – Compound threaded joints

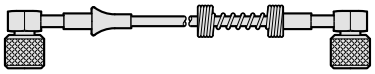
2480.00.23.03.

Gauging hose -
both ends
90°-angle



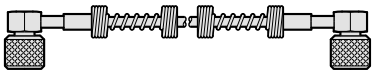
2480.00.23.03.----.3

Antikink spiral, at one end



2480.00.23.03.----.2

Antikink spiral, at both ends



2480.00.23.03.

Order No.	l*
2480.00.23.03.0200	200
2480.00.23.03.0300	300
2480.00.23.03.0400	400
2480.00.23.03.0500	500
2480.00.23.03.0630	630
2480.00.23.03.0800	800
2480.00.23.03.1000	1000
2480.00.23.03.1200	1200
2480.00.23.03.1500	1500
2480.00.23.03.2000	2000
2480.00.23.03.2500	2500
2480.00.23.03.3000	3000

Note:

shortest factory lengths:

without antikink protection	105 mm
antikink protection at one end	150 mm
antikink protection at both ends	300 mm

* other lengths available in the following gradations:

≤ 1000 mm Gradation	5 mm
> 1000 mm Gradation	10 mm
> 4000 mm Gradation	100 mm
> 6000 mm Gradation	500 mm

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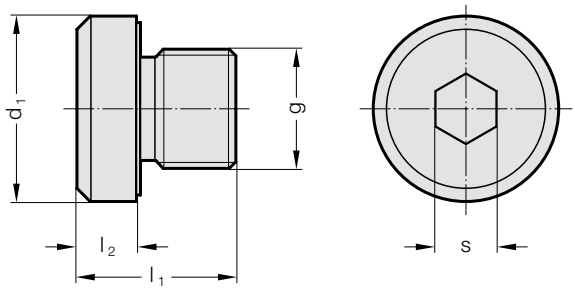
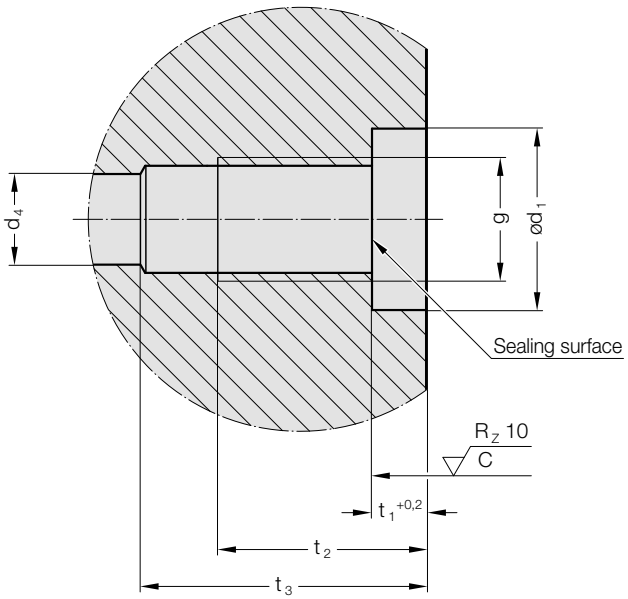
Composite plate systems
248.00.43.2 – Pipe plug
2480.00.30.0005 – Pipe plug



Description	Order No.	d_1	g	l_1	l_2	s
Pipe plug G1/8	248.00.43.2	14	G1/8	12	4	5
Pipe plug G1/4	2480.00.30.0005	19	G1/4	17	4	6

Connection geometry of locking screw

Locking screws are used to seal the through-holes.



RZ 10
C

Specification of the surface composition/texture based on DIN EN ISO 1302

Depiction of the groove direction:

Symbol: C

Groove direction: nearly centric to the centre point

d_4	g	d_1	t_1	t_2	t_3	Pipe plug
≤ 8	G1/8	16	5	15,5	20	248.00.43.2
> 8	G1/4	20	6	20	25	2480.00.30.0005

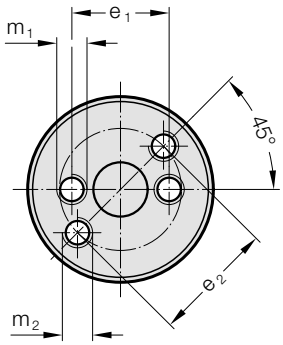
Item	Description	Order No.
1	Control fitting	2480.00.31.0x.1
2	Measuring coupling without valve G1/4	2480.00.24.04
3	Gauging hose one end straight / 90°-angle	2480.00.23.02.xxxx
4	Measuring coupling without valve G1/8	2480.00.24.03
5	Composite plate	2494. ...

PED
2014/68/EU

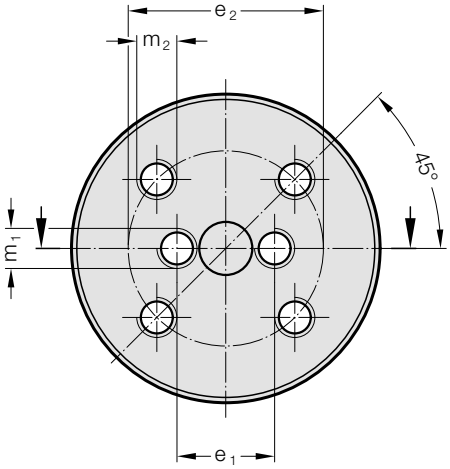
Composite plate systems
2480.93.00.40. – Cover disk

Cover disc incl. Kantseal, can only be used for flat gaskets

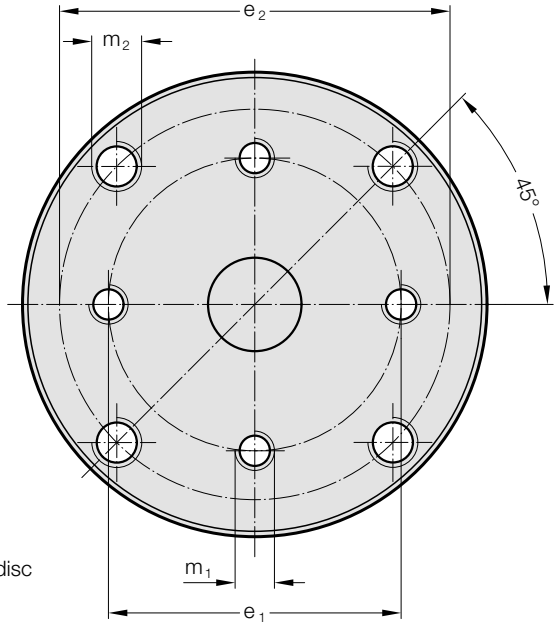
Execution 1

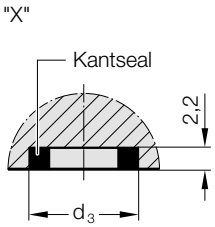


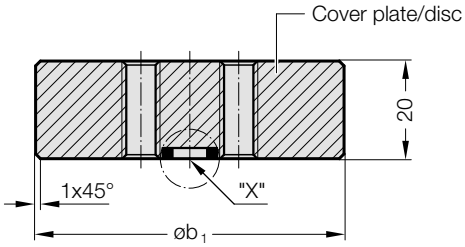
Execution 2



Execution 3/4







Order No. Cover disc incl. Kantseal	Execution	$øb_1$	m_1	e_1	m_2	e_2	m_3	d_3	t_1	Gas spring
2480.93.00.40.01	1	38	M6 (2x)	20	M6 (2x)	25	M8 (2x)	11,1	10	2487.95.15.00350.
										2487.95.15.00500.
										2480.95.15.00500.
										2480.95.15.00750.
										2487.95.15.00750.
										2487.95.15.01000.
										2487.95.15.01500.
										2488.95.15.00750.
										2488.95.15.01000.
2480.93.00.40.02	2	60	M6 (2x)	20	M6 (2x)	40	--	11,1	16	2480.95.15.01500.
										2487.95.15.02400.
										2488.95.15.01500.
										2488.95.15.02400.
2480.93.00.40.03	3	95	M8 (4x)	60	M10 (4x)	80	--	19	20	2480.95.15.03000.
										2480.95.15.05000.
										2487.95.15.04200.
										2487.95.15.06600.
										2488.95.15.04200.
										2488.95.15.06600.
2480.93.00.40.04	4	150	M10 (4x)	100	M12 (4x)	120	--	19	20	2480.95.15.07500.
										2480.95.15.10000.
										2487.95.15.09500.
										2487.95.15.20000.
										2488.95.15.09500.
										2488.95.15.20000.

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2014/68/EU

Appendix, replacement parts

Order No.	Replacement part set	Edge seal	Connecting nipple	O-ring for connecting nipple	Note
Gas spring Standard, for composite panel					
2480.95.25.00200.	2480.15.00150	2480.95.00.02.004			Stroke length 10 and 13 not repairable
Gas spring Standard, for composite panel					
2480.95.15.00250.	2480.15.00250	2480.95.00.02.004	2480.95.00.01.06.06	2480.95.00.01.06.06.1	Stroke length 10 and 13 not repairable
2480.95.15.00500.	2480.15.00500	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 10 and 13 not repairable
2480.95.15.00750.	2480.15.00750	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 13 not repairable
2480.95.15.01500.	2480.15.01500	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 13 not repairable
2480.95.15.03000.	2480.15.03000	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 13 not repairable
2480.95.15.05000.	2480.15.05000	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2480.95.15.07500.	2480.15.07500	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2480.95.15.10000.	2480.15.10000	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 25 not repairable
Gas spring POWERLINE, for composite panel					
2487.95.15.00350.	2487.15.00350	2480.95.00.02.004	2480.95.00.01.06.06	2480.95.00.01.06.06.1	Stroke length 10 not repairable
2487.95.15.00500.	2487.15.00500	2480.95.00.02.004	2480.95.00.01.06.06	2480.95.00.01.06.06.1	Stroke length 10 not repairable
2487.95.15.00750.	2487.15.00750	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 10 not repairable
2487.95.15.01000.	2487.15.01000	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 10 and 13 not repairable
2487.95.15.01500.	2487.15.01500	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 13 not repairable
2487.95.15.02400.	2487.15.02400	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 10 and 19 not repairable
2487.95.15.04200.	2487.15.04200	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 16 and 19 not repairable
2487.95.15.06600.	2487.15.06600	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 16 and 19 not repairable
2487.95.15.09500.	2487.15.09500	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 19 not repairable
2487.95.15.20000.	2487.15.20000	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 19 and 25 not repairable
Gas spring HEAVY DUTY, for composite panel					
2488.95.15.00750.	2488.15.00750	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 10 not repairable
2488.95.15.01000.	2488.15.01000	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	Stroke length 13 not repairable
2488.95.15.01500.	2488.15.01500.	2480.95.00.02.002	2480.95.00.01.06.08	2480.95.00.01.06.08.1	Stroke length 13 not repairable
2488.95.15.02400.	2488.15.02400	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2488.95.15.04200.	2488.15.04200	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2488.95.15.06600.	2488.15.06600	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2488.95.15.09500.	2488.15.09500	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2488.95.15.20000.	2488.15.20000	2480.95.00.02.001	2480.95.00.01.18.10	2480.95.00.01.18.10.1	Stroke length 25 not repairable
Gas spring Compact, for composite panel					
2490.95.15.00750.	2490.15.00750	2480.95.00.02.002	2480.95.00.01.06.08	2480.95.00.01.06.08.1	
2490.95.15.01000.	2490.15.01000	2480.95.00.02.002	2480.95.00.01.06.08	2480.95.00.01.06.08.1	Stroke length 6 not repairable
2490.95.15.01800.	2490.15.01800	2480.95.00.02.002	2480.95.00.01.07.10	2480.95.00.01.18.10.1	
2490.95.15.03000.	2490.15.03000	2480.95.00.02.006	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2490.95.15.04700.	2490.15.04700	2480.95.00.02.006	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2490.95.15.07500.	2490.15.07500	2480.95.00.02.006	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2490.95.15.11800.	2490.15.11800	2480.95.00.02.006	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2490.95.15.18300.	2490.15.18300	2480.95.00.02.006	2480.95.00.01.18.10	2480.95.00.01.18.10.1	

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2014/68/EU

Appendix, replacement parts

Order No.	Replacement part set	Edge seal	Connecting nipple	O-ring for connecting nipple	Note
Gas spring MAXFORCE, for composite panel					
2497.95.15.01000.	2497.15.01000	2480.95.00.02.004	2480.95.00.01.06.06	2480.95.00.01.06.06.1	
2497.95.15.01900.	2497.15.01900	2480.95.00.02.003	2480.95.00.01.08.06	2480.95.00.01.06.06.1	
2497.95.15.03000.	2497.15.03000	2480.95.00.02.003	2480.95.00.01.08.06	2480.95.00.01.06.06.1	
2497.95.15.04700.	2497.15.04700	2480.95.00.02.003	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2497.95.15.07500.	2497.15.07500	2480.95.00.02.003	2480.95.00.01.18.10	2480.95.00.01.18.10.1	
2497.95.15.12800.	2497.15.12800	2480.95.00.02.003	2480.95.00.01.18.10	2480.95.00.01.18.10.1	

FIBRO gas springs – For your safety
Maximum safety for persons and tools

At FIBRO, safety and reliability are paramount. Particularly when it comes to our gas springs. With their unique range of safety features, FIBRO gas springs are one of the safest on the market.

FIBRO safety features 1)

PED 2014/68/EU

PED approval for 2 million strokes

FIBRO gas springs are developed, manufactured and tested for a minimum of 2 million* full strokes in accordance with PED 2014/68/EU. The springs deliver this full performance at the maximum permissible limits in terms of filling pressure and operating temperature – even when combined with any of the various mounting types available.

* Calculation value for durability

The benefit for you:

▶ **Guaranteed safety and reliability for the entire service life of the spring**

Repair kits and qualified training sessions available through FIBRO Service offer increased effectiveness and process reliability.

Manuals

All current operating instructions are available under the link www.gassprings.fibro.com or can now also be scanned from the QR code of the label.

Overpressure protection

Conventional gas springs can burst if the internal pressure rises above a maximum permitted value. If this happens, parts flying around can become dangerous projectiles.

FIBRO gas springs are different:

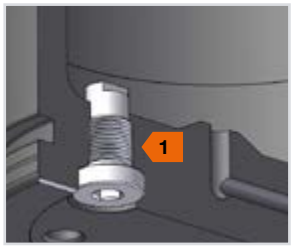
if the pressure rises above the maximum permitted value, the safety collar on the sealing set is automatically destroyed. The gas then escapes into the atmosphere and the gas spring is depressurised.

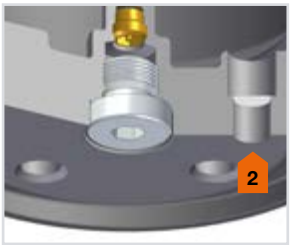
The benefit for you:

▶ **No risk of bursting parts in the event of overpressure**

Possible causes of triggering:

Incorrect filling (max. filling pressure 150 or 180 bar, nitrogen), infeed of liquid operating material, etc.





1 Bursting screw
2 Overpressure membrane
3 Evacuation groove

After a protection function is triggered, the spring cannot be repaired and can no longer be used. It must be replaced completely.

1) The safety features mentioned here have been implemented – with few exceptions – on all FIBRO gas springs.
Please refer to the relevant data sheets to check the current safety equipment which is provided with the gas spring you are interested in, or contact FIBRO GmbH directly for more information. For the safe handling of gas springs and other nitrogen products, the safety regulations must be observed. Maintenance work on the product may only be done, if nitrogen gas is no longer contained in the gas spring.

FIBRO gas springs – For your safety
Maximum safety for persons and tools

Overstroke protection

Conventional gas springs may burst in the event of an over-extended stroke. Components may come loose and be ejected.

FIBRO gas springs are different:

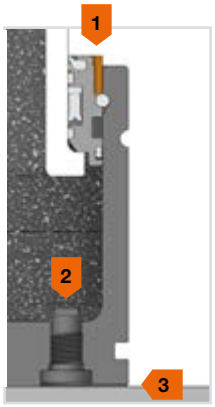
In the event of an over-extended stroke, the patented protection system (depending on the spring type) ensures that either the piston rod destroys a bursting screw in the base of the cylinder (A) or the seal on the cylinder wall of the gas spring loses its sealing function in a specific way (B).

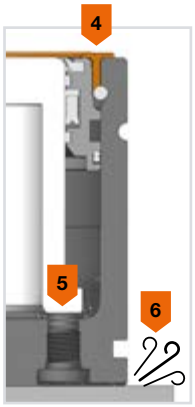
The benefit for you:

▶ **No risk of parts flying around in the event of an overstroke**

Possible causes of triggering:

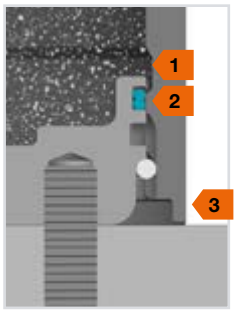
Lack of stroke limitations in the tool/machine and placing the piston rods under a load (e.g. sheet-metal holder, slide reset, etc.), double sheet, incorrect installation position, etc.

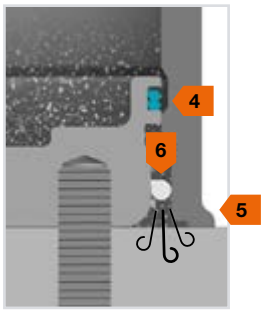




1 Over-extended stroke marking ring
2 Bursting screw
3 Evacuation groove

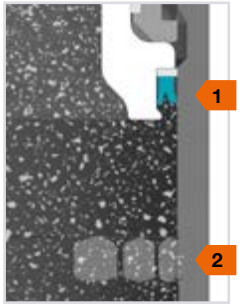
4 Marking ring deformed
5 Bursting screw triggered
6 Nitrogen escapes via evacuation groove

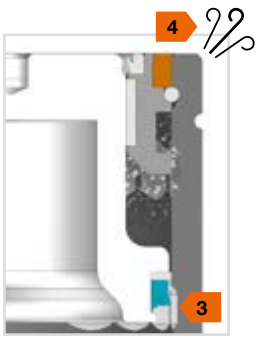




1 Recess
2 Seal
3 Deformation area

4 Release of seal
5 Targeted deformation
6 Nitrogen escapes via evacuation groove





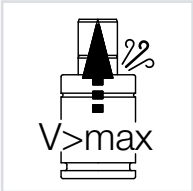
1 Seal
2 Overflow openings

3 No sealing function
4 Nitrogen gas escapes into the atmosphere

FIBRO gas springs – For your safety
Maximum safety for persons and tools

At FIBRO, safety and reliability are paramount. Particularly when it comes to our gas springs. With their unique range of safety features, FIBRO gas springs are one of the safest on the market.

FIBRO safety features 1)



Return stroke protection

If, for any reason, tool components should get stuck and the piston rod should be freely released from its compressed position, conventional gas springs may pose a safety risk as the piston may not be retained in the gas spring.

FIBRO gas springs are different:

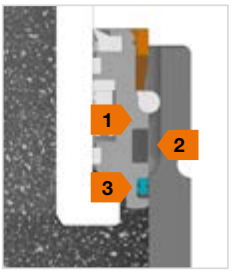
Special sealing inserts in combination with evacuation grooves ensure safety. If the speed is too high during the return stroke, the collar in the sealing insert will automatically break. The integrated evacuation grooves in the cylinder tube allow the gas to escape into the atmosphere and the gas spring becomes depressurised.

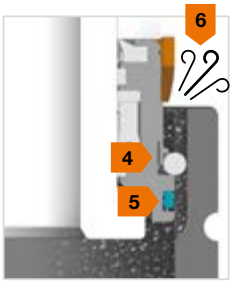
The benefit for you:

▶ **No risk of a piston rod firing out if the return stroke is too fast**

Possible causes of triggering:

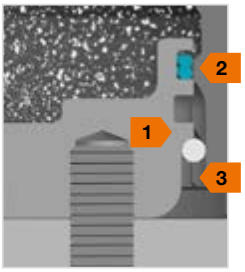
Sudden loosening of jammed components, such as sheet-metal holder, slide, ejector, scraper function, etc.

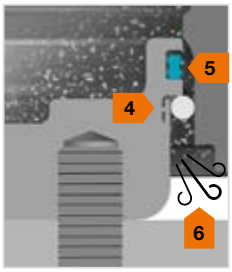




1 Safety collar
2 Evacuation groove
3 Seal

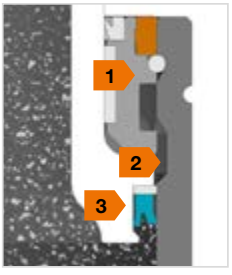
4 Deformation of the safety collar
5 Release of seal
6 Nitrogen gas escapes into the atmosphere

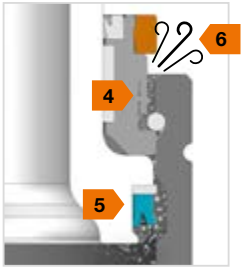




1 Safety collar
2 Seal
3 Evacuation groove

4 Deformation of the safety collar
5 Release of seal
6 Nitrogen gas escapes into the atmosphere





1 Safety collar
2 Evacuation groove
3 Seal

4 Deformation of the safety collar
5 Release of seal
6 Nitrogen gas escapes into the atmosphere

FIBRO gas springs – For your safety
Maximum safety for persons and tools

FIBRO reliability features

Wireless monitoring:

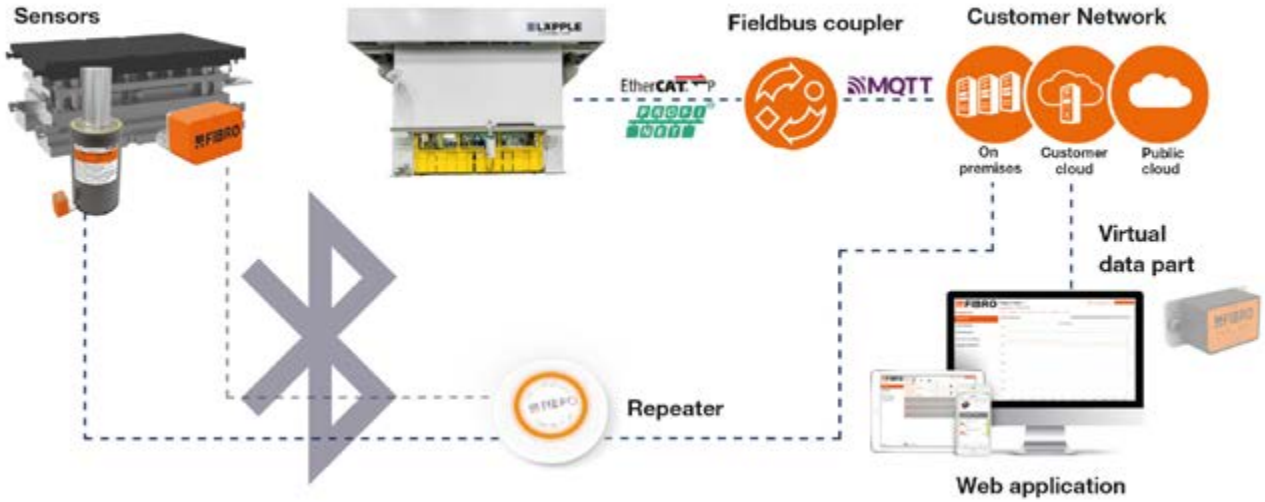
The Wireless Pressure Monitoring (WPM) System

The Wireless Pressure Monitoring System (WPM) (patent pending) wirelessly monitors the pressure and temperature of FIBRO gas springs. Before a defective part is produced, the press operator receives a message from the WPM and can take appropriate action.

The benefits for you:

- **Preventative quality assurance**
- **High process reliability**
- **Minimised tool down time**
- **Reduced maintenance and costs**

Potential faults are individually displayed. As a result, service intervals can be extended. Maintenance and repair costs are reduced.



Protected piston rods: The FIBRO-TEX

The FIBRO piston rod protection, FIBRO-TEX and the piston cover * reliably protects the piston rod of the gas spring against dirt, oil, and emulsion. This prevents damage to the surface of the piston rod and leakage at the inner seals.

The benefit for you:

- **Significantly longer service life for gas springs under harsh operating conditions**

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09/25 Order No. 2.2512.01.0825.0100000

precision +++
is our +++
standard +++