

NSP-SPRING-PACK product line "STANDARD"

for external filling via hose connection,
hose pipe, control instrument and compentor reserv oir.

- full spring load at start position of piston stroke
- load adjustable by user
- constant load all over service life
- bunched load on minimum space
- solid construction, long service life

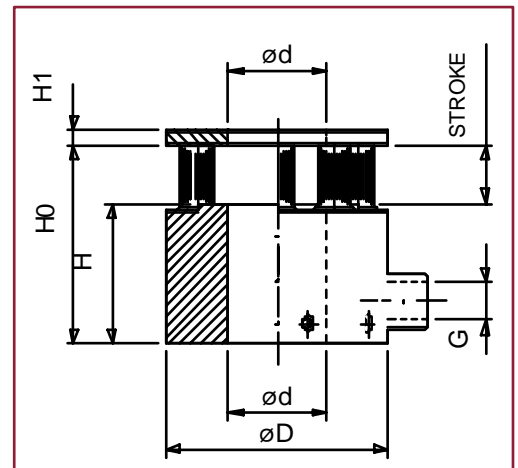
Standard delivery pack without pressure disk type DS,
if required, please order separately .
Fill with gas only when installed!

Compentor reserv oir can be delivered on demand!

- (1) max. adm. working pressure 150 bar!
- (2) other threaded connections possible!

Subject to dimensional changes! Further dimensions on demand!

[\(Installation, mounting and safety advices site 5\)](#)



D	d	stroke S	H0	H	H1	G(2)	F1 (N) 50bar	F2(N) 100bar	F3(N) 150bar (1)	type article-No.
47	12	10	58	48	4	G1/8"	3980	7960	11940	S 04701210-6-13
		15	68	53	S 04701215-6-13					
		20	78	58	S 04701220-6-13					
		30	98	68	S 04701230-6-13					
50	15	10	58	48	4	G1/8"	3980	7960	11940	S 05001510-6-13
		15	68	53	S 05001515-6-13					
		20	78	58	S 05001520-6-13					
		30	98	68	S 05001530-6-13					
52	17	10	58	48	4	G1/8"	3980	7960	11940	S 05201710-6-13
		15	68	53	S 05201715-6-13					
		20	78	58	S 05201720-6-13					
		30	98	68	S 05201730-6-13					
55	20	10	58	48	4	G1/8"	3980	7960	11940	S 05502010-6-13
		15	68	53	S 05502015-6-13					
		20	78	58	S 05502020-6-13					
		30	98	68	S 05502030-6-13					
60	20	10	58	48	4	G1/8"	4952	9904	14856	S 06002010-6-14
		15	68	53	S 06002015-6-14					
		20	78	58	S 06002020-6-14					
		30	98	68	S 06002030-6-14					
60	25	10	58	48	4	G1/8"	5064	10128	15920	S 06002510-8-13
		15	68	53	S 06002515-8-13					
		20	78	58	S 06002520-8-13					
		30	98	68	S 06002530-8-13					
65	30	10	58	48	4	G1/8"	5064	10128	15192	S 06503010-8-13
		15	68	53	S 06503015-8-13					
		20	78	58	S 06503020-8-13					
		30	98	68	S 06503030-8-13					

NSP-SPRING-PACK product line "STANDARD"

D	d	stroke S	H0	H	H1	G(2)	F1 (N) 50bar	F2(N) 100bar	F3(N) 150bar (1)	type article-No.
70	25	10	58	48	5	G1/8"	6092	12058	18086	S 07002510-6-13
		20	78	58						S 07002515-6-13
		30	98	68						S 07002520-8-13
		40	118	78						S 07002530-8-13
		50	138	88						S 07002530-8-13
70	30	10	58	48	4	G1/8"	6602	13204	19806	S 07003010-8-14
		15	68	53						S 07003015-8-14
		20	78	58						S 07003020-8-14
		30	98	68						S 07003030-8-14
70	35	10	58	48	4	G1/8"	6633	13266	19899	S 07003510-10-13
		15	68	53						S 07003515-10-13
		20	78	58						S 07003520-10-13
		30	98	68						S 07003530-10-13
75	40	10	58	48	4	G1/8"	6633	13266	19899	S 07504010-10-13
		15	68	53						S 07504015-10-13
		20	78	58						S 07504020-10-13
		30	98	68						S 07504030-10-13
80	30	10	63	53	5	G1/4"	7630	15260	22890	S 08003010-6-18
		20	83	63						S 08003020-6-18
		30	103	73						S 08003030-6-18
		40	123	83						S 08003040-6-18
		50	143	93						S 08003050-6-18
		60	163	103						S 08003060-6-18
		70	183	113						S 08003070-6-18
80	35	15	68	53	5	JNF1/2"-2l	8038	16077	24115	S 08003515-8-16
		20	78	58						S 08003520-8-16
		30	98	68						S 08003530-8-16
		40	118	78						S 08003540-8-16
		50	138	88						S 08003550-8-16
80	40	10	58	48	4	G1/4"	8252	16504	24756	S 08004010-10-14
		15	68	53						S 08004015-10-14
		20	78	58						S 08004020-10-14
		30	98	68						S 08004030-10-14
80	45	10	58	48	4	G1/4"	7960	15920	23880	S 08004510-12-13
		15	68	53						S 08004515-12-13
		20	78	58						S 08004520-12-13
		30	98	68						S 08004530-12-13
90	40	10	63	53	5	G1/4"	10174	20347	30521	S 09004010-8-18
		20	83	63						S 09004020-8-18
		30	103	73						S 09004030-8-18
		40	123	83						S 09004040-8-18
		50	143	93						S 09004050-8-18
		60	163	103						S 09004060-8-18
		70	183	113						S 09004070-8-18

NSP-SRING-PACK product line "STANDARD"

D	d	stroke S	H0	H	H1	G(2)	F1 (N) 50bar	F2(N) 100bar	F3(N) 150bar (1)	type article-No.
90	45	10	58	48	5	G1/4"	100487	20096	30144	S 09004510-10-16
		20	78	58	S 09004520-10-16					
		30	98	68	S 09004530-10-16					
		40	118	78	S 09004540-10-16					
		50	138	88	S 09004550-10-16					
100	40	10	68	58	5	G1/4"	11398	22796	34195	S 10004010-6-22
		20	88	68	S 10004020-6-22					
		30	108	78	S 10004030-6-22					
		40	128	88	S 10004040-6-22					
		50	148	98	S 10004050-6-22					
		60	168	108	S 10004060-6-22					
		70	188	118	S 10004070-6-22					
100	45	10	63	53	5	JNF1/2"-2(15260	25120	37680	S 10004510-8-20
		20	83	63	S 10004520-8-20					
		30	103	73	S 10004530-8-20					
		40	123	83	S 10004540-8-20					
		50	143	93	S 10004550-8-20					
		60	163	103	S 10004560-8-20					
		70	183	113	S 10004570-8-20					
100	50	10	63	53	5	G1/4"	10174	25434	38151	S 10005010-10-18
		20	83	63	S 10005020-10-18					
		30	103	73	S 10005030-10-18					
		40	123	83	S 10005040-10-18					
		50	143	93	S 10005050-10-18					
		60	163	103	S 10005060-10-18					
		70	183	113	S 10005070-10-18					
105	65	10	58	48	4	G1/4"	9903	19806	29709	S 10506510-12-14
		15	68	53	S 10506515-12-14					
		20	78	58	S 10506520-12-14					
		30	98	68	S 10506530-12-14					
		40	118	78	S 10506540-12-14					
112	57	10	63	53	5	G1/4"	15700	31400	47100	S 11205710-10-20
		20	83	63	S 11205720-10-20					
		30	103	73	S 11205730-10-20					
		40	123	83	S 11205740-10-20					
		50	143	93	S 11205750-10-20					
		60	163	103	S 11205760-10-20					
		70	183	113	S 11205770-10-20					
120	65	10	63	53	5	G1/4"	15700	31400	47100	S 12006510-10-20
		20	83	63	S 12006520-10-20					
		30	103	73	S 12006530-10-20					
		40	123	83	S 12006540-10-20					
		50	143	93	S 12006550-10-20					
		60	163	103	S 12006560-10-20					
		70	183	113	S 12006570-10-20					

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D	d	stroke S	H0	H	H1	G(2)	F1 (N) 50bar	F2(N) 100bar	F3(N) 150bar (1)	type article-No.
125	60	10	73	63	6	JNF1/2"-2l	19625	39250	58875	S 12506010-8-25
		20	93	73						S 12506020-8-25
		30	113	83						S 12506030-8-25
		40	133	93						S 12506040-8-25
		50	153	103						S 12506050-8-25
		60	173	113						S 12506060-8-25
		70	193	123						S 12506070-8-25
125	65	10	68	58	5	G1/4"	15198	30395	45593	S 12506510-8-22
		20	88	68						S 12506520-8-22
		30	108	78						S 12506530-8-22
		40	128	88						S 12506540-8-22
		50	148	98						S 12506550-8-22
		60	168	108						S 12506560-8-22
		70	188	118						S 12506570-8-22
125	70	10	63	53	5	G1/4"	15700	37680	56520	S 12507010-12-20
		20	83	63						S 12507020-12-20
		30	103	73						S 12507030-12-20
		40	123	83						S 12507040-12-20
		50	143	93						S 12507050-12-20
		60	163	103						S 12507060-12-20
		70	183	113						S 12507070-12-20
140	70	10	73	63	6	G3/8"	24531	49062	73593	S 14007010-10-25
		20	93	73						S 14007020-10-25
		30	113	83						S 14007030-10-25
		40	133	93						S 14007040-10-25
		50	153	103						S 14007050-10-25
		60	173	113						S 14007060-10-25
		70	193	123						S 14007070-10-25
140	80	10	68	58	5	G3/8"	18997	37994	56991	S 14008010-10-22
		20	88	68						S 14008020-10-22
		30	108	78						S 14008030-10-22
		40	128	88						S 14008040-10-22
		50	148	98						S 14008050-10-22
		60	168	108						S 14008060-10-22
		70	188	118						S 14008070-10-22
150	80	10	73	63	6	G3/8"	29437	58874	88312	S 15008010-12-25
		20	93	73						S 15008020-12-25
		30	113	83						S 15008030-12-25
		40	133	93						S 15008040-12-25
		50	153	103						S 15008050-12-25
		60	173	113						S 15008060-12-25
		70	193	123						S 15008070-12-25

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D	d	stroke S	H0	H	H1	G(2)	F1 (N) 50bar	F2(N) 100bar	F3(N) 150bar (1)	type article-No.
160	90	10	73	63	6	G3/8"	29437	58874	88312	S 16009010-12-25
		20	93	73						S 16009020-12-25
		30	113	83						S 16009030-12-25
		40	133	93						S 16009040-12-25
		50	153	103						S 16009050-12-25
		60	173	113						S 16009060-12-25
		70	193	123						S 16009070-12-25
180	110	10	73	63	5	G3/8"	34343	68686	103030	S 18011010-14-25
		20	93	73						S 18011020-14-25
		30	113	83						S 18011030-14-25
		40	133	93						S 18011040-14-25
		50	153	103						S 18011050-14-25
		60	173	113						S 18011060-14-25
		70	193	123						S 18011070-14-25

Installation

If NSP-SPRING-PACKS are imbedded in a tool pallet, it is absolutely necessary to make a drainage bore in order to allow lubricants and cooling fluid to drain off – please take care that the bore hole is large enough for the fluid used.

In case of stroke travel exceeding 20 mm and moving speed exceeding 0.2 m/sec., NSP-SPRING-PACKS have to be installed with preload. Preload should be at least 1 mm.

Spring with a filling pressure of 150 bar and more must always be installed with preload!

Never load NSP-springs to solid length!

A resisting stroke of at least 1 mm must also be provided. Never exceed the filling pressure indicated in the catalogue! For filling, only use the original OEST-feeding-adapter.

Maintenance and cleaning

For cleaning the gas springs, please use only a clean polishing cloth! If necessary, damp the polishing cloth with detergent. Never spray detergent or solvent onto the gas spring or dip it into them.

Safe use

Gas springs are components provided with pressure (AUTONOMIC) or which have to be provided with pressure after installation and mounting (STANDARD). When working on a system or on the spring itself, first of all remove pressure! Dismounting or reparational work must only be done by specialists instructed by the manufacturer or by the manufacturer himself! Before initiation, carefully read the safety advices and make the operating staff familiar with the safe use.

NSP-SPRING-PACK product line "AUTONOMIC"

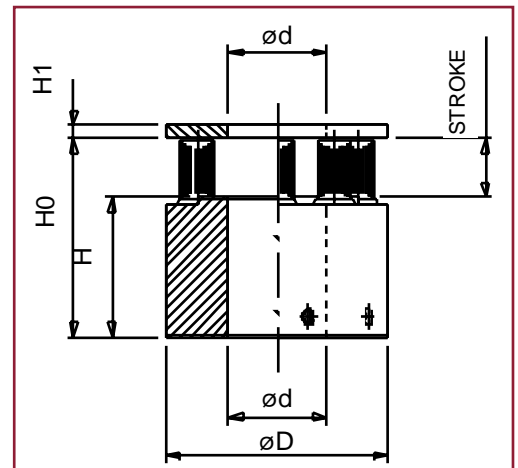
can be delivered as pre-set, independent unit, with feeding valve, without hose connection.

- high spring load at start position of piston stroke
- constant load all over service life
- bunched load on minimum space
- solid construction, long service life
- full compatibility to conventional disk-spring-units

Standard delivery pack without pressure disk type DS, if required, please order separately.

- (1) max. adm. filling pressure!
- (2) load at max. adm. working pressure 150 bar!
- (3) ratio load at start and end position of piston stroke!

Subject to dimensional changes! Further dimensions on demand!



D	d	stroke S	H0	H	H1	F1 (N)	P1 (bar) (1)	F max (N) (2)	spring-rate N/mm	l F1/Fmax (3)	type article-No.
50	15	10	68	58	4	5845	110	7960	212	1,36	A 05001510-4/2-13
		15	78	63		5342	101		175	1,49	A 05001515-4/2-13
		20	88	68		4989	94		149	1,60	A 05001520-4/2-13
		25	98	73		4727	89		129	1,68	A 05001525-4/2-13
		30	108	78		4525	85		114	1,76	A 05001530-4/2-13
52	17	10	68	58	4	5845	110	7960	212	1,36	A 05201710-4/2-13
		15	78	63		5342	101		175	1,49	A 05201715-4/2-13
		20	88	68		4989	94		149	1,60	A 05201720-4/2-13
		25	98	73		4727	89		129	1,68	A 05201725-4/2-13
		30	108	78		4525	85		114	1,76	A 05201730-4/2-13
55	20	10	68	58	4	5845	110	7960	212	1,36	A 05502010-4/2-13
		15	78	63		5342	101		175	1,49	A 05502015-4/2-13
		20	88	68		4989	94		149	1,60	A 05502020-4/2-13
		25	98	73		4727	89		129	1,68	A 05502025-4/2-13
		30	108	78		4525	85		114	1,76	A 05502030-4/2-13
60	20	10	68	58	4	7387	112	9903	252	1,34	A 06002010-4/2-14
		15	78	63		6781	103		208	1,46	A 06002015-4/2-14
		20	88	68		6354	96		177	1,56	A 06002020-4/2-14
		25	98	73		6036	91		155	1,64	A 06002025-4/2-14
		30	108	78		5791	88		137	1,71	A 06002030-4/2-14
60	25	10	68	58	4	8281	104	11940	366	1,44	A 06002510-6/2-13
		15	78	63		7437	93		300	1,61	A 06002515-6/2-13
		20	88	68		6850	86		255	1,74	A 06002520-6/2-13
		25	98	73		6418	81		221	1,86	A 06002525-6/2-13
		30	108	78		6087	77		195	1,96	A 06002530-6/2-13
65	25	10	68	58	4	10500	106	14854	435	1,42	A 06502510-4/2-14
		15	78	63		9486	96		358	1,57	A 06502515-4/2-14
		20	88	68		8777	89		304	1,69	A 06502520-4/2-14
		25	98	73		8255	83		264	1,80	A 06502525-4/2-14
		30	108	78		7854	79		233	1,89	A 06502530-4/2-14
70	25	10	68	58	4	9095	113	12058	296	1,33	A 07002510-4/2-16
		15	78	63		8379	104		245	1,44	A 07002515-4/2-16
		20	88	68		7872	98		209	1,53	A 07002520-4/2-16
		25	98	73		7496	93		182	1,61	A 07002525-4/2-16
		30	108	78		7204	90		162	1,67	A 07002530-4/2-16
		40	128	88		6783	84		132	1,78	A 07002540-4/2-16

NSP-SPRING-PACK product line "AUTONOMIC"

D	d	stroke S	H0	H	H1	F1 (N)	P1 (bar) (1)	F max (N) (2)	spring- rate N/mm	l F1/Fmax (3)	type article-No.
70	30	10	68	58	4	10500	106	14854	435	1,42	A 07003010-6/2-14
		15	78	63		9486	196		358	1,57	A 07003015-6/2-14
		20	88	68		8777	89		304	1,69	A 07003020-6/2-14
		25	98	73		8255	83		264	1,80	A 07003025-6/2-14
		30	108	78		7854	79		233	1,89	A 07003030-6/2-14
70	35	10	68	58	4	10595	113	15920	532	1,50	A 07003510-8/2-13
		15	78	63		9399	104		435	1,69	A 07003515-8/2-13
		20	88	68		8574	98		367	1,86	A 07003520-8/2-13
		25	98	73		7971	93		318	2,00	A 07003525-8/2-13
		30	108	78		7510	90		280	2,12	A 07003530-8/2-13
80	30	10	73	63	5	11673	115	15260	359	1,31	A 08003010-4/6-18
		15	83	68		10774	106		299	1,42	A 08003015-4/6-18
		20	93	73		10132	100		256	1,51	A 08003020-4/6-18
		25	103	78		9650	95		224	1,58	A 08003025-4/6-18
		30	113	83		9275	91		200	1,65	A 08003030-4/6-18
		40	133	93		8729	86		163	1,75	A 08003040-4/6-18
		50	153	103		8351	82		138	1,83	A 08003050-4/6-18
80	35	10	68	58	5	13021	108	18086	507	1,39	A 08003510-6/2-16
		15	78	63		11825	98		417	1,53	A 08003515-6/2-16
		20	88	68		10987	91		355	1,65	A 08003520-6/2-16
		25	98	73		10367	86		309	1,75	A 08003525-6/2-16
		30	108	78		9890	82		273	1,83	A 08003530-6/2-16
		50	138	98		9204	76		222	2,07	A 08003550-6/2-16
80	40	10	68	58	4	13554	103	19806	625	1,46	A 08004010-8/2-14
		15	78	63		12119	92		512	1,63	A 08004015-8/2-14
		20	88	68		11122	84		434	1,78	A 08004020-8/2-14
		25	98	73		10390	79		377	1,91	A 08004025-8/2-14
		30	108	78		9829	74		333	2,02	A 08004030-8/2-14
80	45	10	68	58	4	11690	110	15920	423	1,46	A 08004510-8/4-13
		15	78	63		10684	101		349	1,63	A 08004515-8/4-13
		20	88	68		9978	94		297	1,78	A 08004520-8/4-13
		25	98	73		9454	89		259	1,91	A 08004525-8/4-13
		30	108	78		9051	85		229	2,02	A 08004530-8/4-13
90	40	10	73	63	5	16724	110	22891	617	1,37	A 09004010-6/2-18
		15	83	68		15222	100		511	1,50	A 09004015-6/2-18
		20	93	73		14159	93		437	1,62	A 09004020-6/2-18
		25	103	78		13366	88		381	1,71	A 09004025-6/2-18
		30	113	83		12753	84		338	1,80	A 09004030-6/2-18
		40	133	93		11865	78		276	1,93	A 09004040-6/2-18
		50	153	103		11254	74		233	2,03	A 09004050-6/2-18

NSP-SPRING-PACK product line "AUTONOMIC"

D	d	stroke S	H0	H	H1	F1 (N)	P1 (bar) (1)	F max (N) (2)	spring- rate N/mm	l F1/Fmax (3)	type article-No.
90	45	10	68	58	4	16935	105	24115	718	1,42	A 09004510-8/2-16
		15	78	63		15248	95		4591	1,58	A 09004515-8/2-16
		20	88	68		14067	88		502	1,71	A 09004520-8/2-16
		25	98	73		13195	82		437	1,83	A 09004525-8/2-16
		30	108	78		12524	78		386	1,93	A 09004530-8/2-16
		40	128	88		11560	72		314	2,09	A 09004540-8/2-16
100	40	10	78	68	5	17687	116	22796	511	1,29	A 10004010-4/2-22
		20	98	78		15405	101		370	1,48	A 10004020-4/2-22
		30	118	88		14112	93		289	1,62	A 10004030-4/2-22
		40	138	98		13279	87		238	1,72	A 10004040-4/2-22
		50	158	108		12699	84		202	1,80	A 10004050-4/2-22
100	45	10	73	63	5	20671	110	28260	759	1,37	A 10004510-6/2-20
		20	93	73		17514	93		537	1,61	A 10004520-6/2-20
		30	113	83		15784	84		416	1,79	A 10004530-6/2-20
		40	133	93		14692	78		339	1,92	A 10004540-6/2-20
		50	153	103		13940	74		286	2,03	A 10004550-6/2-20
100	50	10	73	63	5	21684	107	30521	884	1,29	A 10005010-8/2-18
		20	93	73		18067	89		623	1,48	A 10005020-8/2-18
		30	113	83		16099	79		481	1,62	A 10005030-8/2-18
		40	133	93		14862	73		391	1,72	A 10005040-8/2-18
		60	173	113		14012	69		330	1,80	A 10005060-8/2-18
112	57	10	73	63	5	26807	107	37680	1087	1,41	A 11205710-8/2-20
		20	93	73		22356	89		766	1,69	A 11205720-8/2-20
		30	113	83		19935	79		591	1,89	A 11205730-8/2-20
		40	133	93		18413	73		482	2,05	A 11205740-8/2-20
		50	153	103		17368	69		406	2,17	A 11205750-8/2-20
120	65	10	73	63	5	26807	107	37680	1087	1,41	A 12006510-8/2-20
		20	93	73		22356	89		766	1,69	A 12006520-8/2-20
		30	113	83		19935	79		591	1,89	A 12006530-8/2-20
		40	133	93		18413	73		482	2,05	A 12006540-8/2-20
		50	153	103		17368	69		406	2,17	A 12006550-8/2-20
125	60	10	83	73	6	33525	114	44156	1063	1,32	A 12506010-6/2-25
		20	103	83		28709	98		772	1,54	A 12506020-6/2-25
		30	123	93		25962	88		606	1,70	A 12506030-6/2-25
		50	163	113		22944	78		424	1,93	A 12506050-6/2-25
		70	203	133		24186	82		499	1,83	A 12506070-6/2-25
125	65	10	78	68	5	25391	111	34195	880	1,35	A 12506510-6/2-22
		20	98	78		21586	95		630	1,58	A 12506520-6/2-22
		30	118	88		19464	85		491	1,76	A 12506530-6/2-22
		40	138	98		18111	79		402	1,89	A 12506540-6/2-22
		50	158	108		17172	75		340	1,99	A 12506550-6/2-22

NSP-SPRING-PACK product line "AUTONOMIC"

D	d	stroke S	H0	H	H1	F1 (N)	P1 (bar) (1)	F max (N) (2)	spring- rate N/mm	l F1/Fmax (3)	type article-No.
125	70	10	73	63	5	32872	105	47100	1423	1,43	A 12507010-10/2-20
		20	93	73		27112	86		999	1,74	A 12507020-10/2-20
		30	113	83		23994	76		770	1,96	A 12507030-10/2-20
		40	133	93		22040	70		627	2,14	A 12507040-10/2-20
		50	153	103		20700	66		528	2,28	A 12507050-10/2-20
140	70	10	83	73	6	43645	111	58875	1523	1,35	A 14007010-8/2-25
		20	103	83		36850	94		1101	1,60	A 14007020-8/2-25
		30	123	93		33002	84		862	1,78	A 14007030-8/2-25
		40	143	103		30525	78		709	1,93	A 14007040-8/2-25
		50	163	113		28798	73		602	2,04	A 14007050-8/2-25
150	80	10	83	73	6	53667	109	73594	1993	1,37	A 15008010-10/2-25
		20	103	83		44866	91		1436	1,64	A 15008020-10/2-25
		30	123	93		39907	81		1123	1,84	A 15008030-10/2-25
		40	143	103		36725	75		922	2,00	A 15008040-10/2-25
		50	163	113		34510	70		782	2,13	A 15008050-10/2-25
160	90	10	83	73	6	53667	109	73594	1993	1,37	A 16009010-10/2-25
		20	103	83		44866	91		1436	1,64	A 16009020-10/2-25
		30	123	93		39907	81		1123	1,84	A 16009030-10/2-25
		40	143	103		36725	75		922	2,00	A 16009040-10/2-25
		50	163	113		34510	70		782	2,13	A 16009050-10/2-25

NSR-SPRING-RAIL product line "STANDARD"

for external filling via hose connection, hose pipe, control instrument and compentor reservoir.

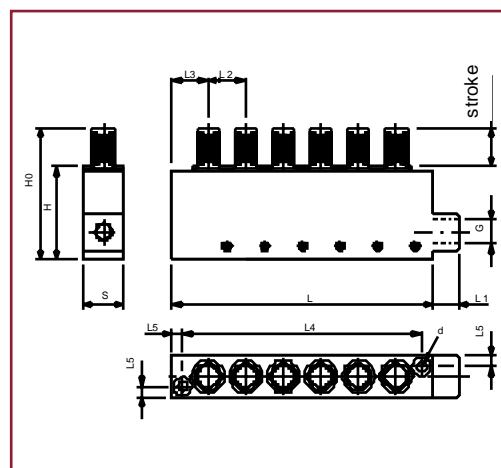
- full spring load at start position of piston stroke
- load adjustable by user
- constant load allover service life
- bunched load on minimum space
- solid construction, long service life

Fill with gas only when installed.

Compentor reservoir can be delivered on demand!

- (1) max. adm. working pressure 150 bar!
- (2) other threaded connections possible!
- (3) number of pistons!

Subject to dimensional changes! Further dimensions on demand!



S	L	stroke	H0	H	L1	L2	L3	L4	L5	d	G (2)	n (3)	F1 (N) 100bar	F2 (N) 150bar (1)	ty pe article-No.
17,5	105	10	58	48	20	20	21	93	6	5,5	1/8"	4	5307	7960	FS 1710510-4-13
		15	68	53											FS 1710515-4-13
		20	78	58											FS 1710520-4-13
		30	98	68											FS 1710530-4-13
17,5	145	10	58	48	20	20	21	133	6	5,5	1/8"	6	7960	11940	FS 1714510-6-13
		15	68	53											FS 1714515-6-13
		20	78	58											FS 1714520-6-13
		30	98	68											FS 1714530-6-13
17,5	185	10	58	48	20	20	21	173	6	5,5	1/8"	8	10613	15920	FS 1718510-8-13
		15	68	53											FS 1718515-8-13
		20	78	58											FS 1718520-8-13
		30	98	68											FS 1718530-8-13
17,5	225	10	58	48	20	20	21	213	6	5,5	1/8"	10	13266	19899	FS 1722510-10-13
		15	68	53											FS 1722515-10-13
		20	78	58											FS 1722520-10-13
		30	98	68											FS 1722530-10-13
20,0	111	10	58	48	20	22	21	99	6	5,5	1/4"	4	6603	9904	FS 2011110-4-14
		15	68	53											FS 2011115-4-14
		20	78	58											FS 2011120-4-14
		30	98	68											FS 2011130-4-14
20,0	155	10	58	48	20	22	21	143	6	5,5	1/4"	6	9904	14856	FS 2015510-6-14
		15	68	53											FS 2015515-6-14
		20	78	58											FS 2015520-6-14
		30	98	68											FS 2015530-6-14
20,0	199	10	58	48	20	22	21	187	6	5,5	1/4"	8	13204	19806	FS 2019910-8-14
		15	68	53											FS 2019915-8-14
		20	78	58											FS 2019920-8-14
		30	98	68											FS 2019930-8-14
20,0	243	10	58	48	20	22	21	231	6	5,5	1/4"	10	16504	24756	FS 2024310-10-14
		15	68	53											FS 2024315-10-14
		20	78	58											FS 2024320-10-14
		30	98	68											FS 2024330-10-14

NSR-SPRING-RAIL product line "STANDARD"

S	L	stroke	H0	H	L1	L2	L3	L4	L5	d	G (2)	n (3)	F1 (N) 100bar	F2 (N) 150bar (1)	type article-No.
22,5	117	10	58	48	20	24	21	105	6	5,5	1/4"	4	8039	12058	FS 2211710-4-16
		20	78	58											FS 2211720-4-16
		30	98	68											FS 2211730-4-16
		40	118	78											FS 2211740-4-16
		50	138	88											FS 2211750-4-16
22,5	165	10	58	48	20	24	21	105	6	5,5	1/4"	6	12058	18086	FS 2216510-6-16
		20	78	58											FS 2216520-6-16
		30	98	68											FS 2216530-6-16
		40	118	78											FS 2216540-6-16
		50	138	88											FS 2216550-6-16
22,5	213	10	58	48	20	24	21	201	6	5,5	1/4"	8	16077	24115	FS 2221310-8-16
		20	78	58											FS 2221320-8-16
		30	98	68											FS 2221330-8-16
		40	118	78											FS 2221340-8-16
		50	138	88											FS 2221350-8-16
22,5	261	10	58	48	20	24	21	249	6	5,5	1/4"	10	20096	30144	FS 2226110-10-16
		20	78	58											FS 2226120-10-16
		30	98	68											FS 2226130-10-16
		40	118	78											FS 2226140-10-16
		50	138	88											FS 2226150-10-16
25,0	129	10	63	53	20	26	24	115	7	6,5	1/4"	4	10173	15260	FS 2512910-4-18
		20	83	63											FS 2512920-4-18
		30	103	73											FS 2512930-4-18
		40	123	83											FS 2512940-4-18
		50	143	93											FS 2512950-4-18
		60	163	103											FS 2512960-4-18
		70	183	113											FS 2512970-4-18
25,0	181	10	63	53	20	26	24	167	7	6,5	1/4"	6	15260	22890	FS 2518110-6-18
		20	83	63											FS 2518120-6-18
		30	103	73											FS 2518130-6-18
		40	123	83											FS 2518140-6-18
		50	143	93											FS 2518150-6-18
		60	163	103											FS 2518160-6-18
		70	183	113											FS 2518170-6-18
25,0	233	10	63	53	20	26	24	219	7	6,5	1/4"	8	20347	30521	FS 2523310-8-18
		20	83	63											FS 2523320-8-18
		30	103	73											FS 2523330-8-18
		40	123	83											FS 2523340-8-18
		50	143	93											FS 2523350-8-18
		60	163	103											FS 2523360-8-18
		70	183	113											FS 2523370-8-18

NSR-SPRING-RAIL product line "STANDARD"

S	L	stroke	H0	H	L1	L2	L3	L4	L5	d	G (2)	n (3)	F1 (N) 100bar	F2 (N) 150bar (1)	type article-No.
25,0	285	10	63	53	20	26	24	271	7	6,5	1/4"	10	25434	38151	FS 2528510-10-18
		20	83	63											FS 2528520-10-18
		30	103	73											FS 2528530-10-18
		40	123	83											FS 2528540-10-18
		50	143	93											FS 2528550-10-18
		60	163	103											FS 2528560-10-18
		70	183	113											FS 2528570-10-18
30,0	135	10	63	53	20	28	24	121	7	6,5	1/4"	4	12560	18840	FS 3013510-4-20
		20	83	63											FS 3013520-4-20
		30	103	73											FS 3013530-4-20
		40	123	83											FS 3013540-4-20
		50	143	93											FS 3013550-4-20
		60	163	103											FS 3013560-4-20
		70	183	113											FS 3013570-4-20
30,0	191	10	63	53	20	28	24	177	7	6,5	1/4"	6	12560	28260	FS 3019110-6-20
		20	83	63											FS 3019120-6-20
		30	103	73											FS 3019130-6-20
		40	123	83											FS 3019140-6-20
		50	143	93											FS 3019150-6-20
		60	163	103											FS 3019160-6-20
		70	183	113											FS 3019170-6-20
30,0	247	10	63	53	20	28	24	233	7	6,5	1/4"	8	25120	37680	FS 3024710-8-20
		20	83	63											FS 3024720-8-20
		30	103	73											FS 3024730-8-20
		40	123	83											FS 3024740-8-20
		50	143	93											FS 3024750-8-20
		60	163	103											FS 3024760-8-20
		70	183	113											FS 3024770-8-20

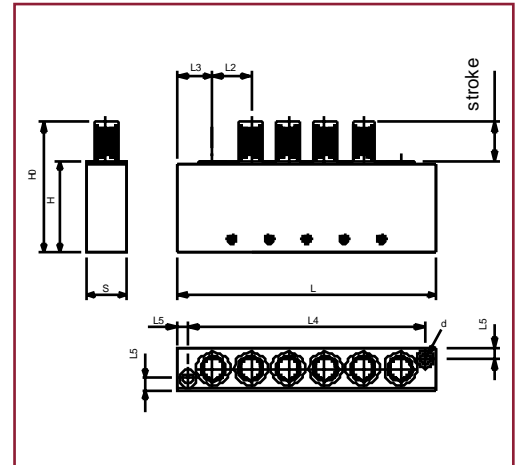
NSR-SPRING-RAIL product line "AUTONOMIC"

can be delivered as pre-set, independent unit,
with feeding valve, without hose connection.

- high spring load at start position of piston stroke
- constant load all over service life
- bunched load on minimum space
- solid construction, long service

- (1) max. adm. filling pressure!
- (2) load at max. adm. working pressure 150 bar!
- (3) number of active pistons!
- (4) load at start position of piston stroke!

Subject to dimensional changes!



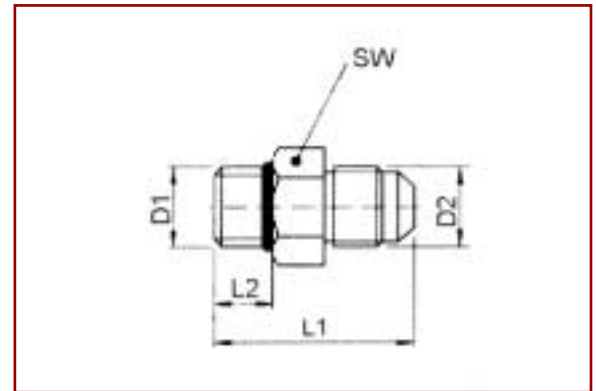
S	L	stroke	H0	H	L2	L3	L4	L5	d	p1 (1) bar	n (3)	F1 (N) (4)	F2 (N) 150bar (2)	I F1/Fmax (3)	type article-No.
17,5	145	10	68	58	20	21	133	6	5,5	110	4	5845	7960	1,36	FA 1714510-4/2-13
		15	78	63						101		5342		1,49	FA 1714515-4/2-13
		20	88	68						94		4989		1,60	FA 1714520-4/2-13
		25	98	73						89		4757		1,68	FA 1714525-4/2-13
		30	108	78						85		4525		1,76	FA 1714530-4/2-13
17,5	185	10	68	58	20	21	173	6	5,5	104	6	8281	11940	1,44	FA 1718510-6/2-13
		15	78	63						93		7437		1,61	FA 1718515-6/2-13
		20	88	68						86		6850		1,74	FA 1718520-6/2-13
		25	98	73						81		6418		1,86	FA 1718525-6/2-13
		30	108	78						77		6087		1,96	FA 1718530-6/2-13
17,5	225	10	68	58	20	21	213	6	5,5	100	8	10595	15920	1,50	FA 1722510-8/2-13
		15	78	63						89		9399		1,69	FA 1722515-8/2-13
		20	88	68						81		8574		1,86	FA 1722520-8/2-13
		25	98	73						75		7971		2,00	FA 1722525-8/2-13
		30	108	78						71		7510		2,12	FA 1722530-8/2-13
20,0	155	10	68	58	22	21	143	6	5,5	112	4	7387	9903	1,34	FA 2015510-4/2-14
		15	78	63						103		6781		1,46	FA 2015515-4/2-14
		20	88	68						96		6354		1,56	FA 2015520-4/2-14
		25	98	73						91		6036		1,64	FA 2015525-4/2-14
		30	108	78						88		5791		1,71	FA 2015530-4/2-14
20,0	199	10	68	58	22	21	187	6	5,5	106	6	10500	14854	1,42	FA 2019910-6/2-14
		15	78	63						96		9486		1,57	FA 2019915-6/2-14
		20	88	68						89		8777		1,69	FA 2019920-6/2-14
		25	98	73						83		8255		1,80	FA 2019925-6/2-14
		30	108	78						79		7854		1,89	FA 2019930-6/2-14
20,0	243	10	68	58	22	21	231	6	5,5	103	8	13554	19806	1,46	FA 2024310-8/2-14
		15	78	63						92		12119		1,63	FA 2024315-8/2-14
		20	88	68						84		11122		1,78	FA 2024320-8/2-14
		25	98	73						79		10390		1,91	FA 2024325-8/2-14
		30	108	78						74		9829		2,02	FA 2024330-8/2-14
22,0	165	10	68	58	24	21	153	6	5,5	113	4	9095	12058	1,33	FA 2216510-4/2-16
		15	78	63						104		8379		1,44	FA 2216515-4/2-16
		20	88	68						98		7872		1,53	FA 2216520-4/2-16
		25	98	73						93		7496		1,61	FA 2216525-4/2-16
		30	108	78						90		7204		1,67	FA 2216550-4/2-16

NSR-SPRING-RAIL product line "AUTONOMIC"

S	L	stroke	H0	H	L2	L3	L4	L5	d	p1 (1) bar	n (3)	F1 (N) (4)	F2 (N) 150bar (2)	I F1/Fmax (3)	type article-No.
22,0	213	10	68	58	24	21	201	6	5,5	104	6	8281	11940	1,44	FA 2221310-6/2-16
		15	78	63						93		7437		1,61	FA 2221315-6/2-16
		20	88	68						86		6850		1,74	FA 2221320-6/2-16
		25	98	73						81		6418		1,86	FA 2221325-6/2-16
		30	108	78						77		6087		1,96	FA 2221330-6/2-16
22,0	261	10	68	58	24	21	249	6	5,5	105	8	16935	24115	1,42	FA 2226110-8/2-16
		15	78	63						95		15248		1,58	FA 2226115-8/2-16
		20	88	68						88		14067		1,71	FA 2226120-8/2-16
		25	98	73						82		13195		1,83	FA 2226125-8/2-16
		30	108	78						78		12524		1,93	FA 2226130-8/2-16
25,0	181	10	73	63	26	24	167	7	6,5	115	4	11673	15260	1,31	FA 2518110-4/2-18
		15	83	68						106		10774		1,42	FA 2518115-4/2-18
		20	93	73						100		10132		1,51	FA 2518120-4/2-18
		25	103	78						95		9650		1,58	FA 2518125-4/2-18
		30	113	83						91		9275		1,65	FA 2518130-4/2-18
25,0	233	10	73	63	26	24	219	7	6,5	110	6	16724	22891	1,37	FA 2523310-6/2-18
		15	83	68						100		15222		1,50	FA 2523315-6/2-18
		20	93	73						93		14159		1,62	FA 2523320-6/2-18
		25	103	78						88		13366		1,71	FA 2523325-6/2-18
		30	113	83						84		12753		1,80	FA 2523330-6/2-18
25,0	285	10	73	63	26	24	271	7	6,5	107	8	21684	30521	1,41	FA 2528510-8/2-18
		15	83	68						89		18067		1,69	FA 2528515-8/2-18
		20	93	73						79		16099		1,90	FA 2528520-8/2-18
		25	103	78						73		14862		2,05	FA 2528525-8/2-18
		30	113	83						69		14012		2,18	FA 2528530-8/2-18
30,0	191	10	63	53	28	24	177	7	6,5	118	4	14869	18840	1,27	FA 3019110-4/2-20
		20	83	63						104		12996		1,45	FA 3019120-4/2-20
		30	103	73						95		11905		1,58	FA 3019130-4/2-20
		40	123	83						89		11191		1,68	FA 3019140-4/2-20
		50	143	93						85		10688		1,76	FA 3019150-4/2-20
30,0	247	10	63	53	28	24	233	7	6,5	110	6	20671	28260	1,37	FA 3024710-6/2-20
		20	83	63						93		17514		1,61	FA 3024720-6/2-20
		30	103	73						84		15784		1,79	FA 3024730-6/2-20
		40	123	83						78		14692		1,92	FA 3024740-6/2-20
		50	143	93						74		13940		2,03	FA 3024750-6/2-20
30,0	303	10	63	53	28	24	289	7	6,5	112	8	28098	37680	1,34	FA 3030310-8/2-20
		20	83	63						94		23685		1,59	FA 3030320-8/2-20
		30	103	73						84		21148		1,78	FA 3030330-8/2-20
		40	123	83						78		19499		1,93	FA 3030340-8/2-20
		50	143	93						73		18342		2,05	FA 3030350-8/2-20

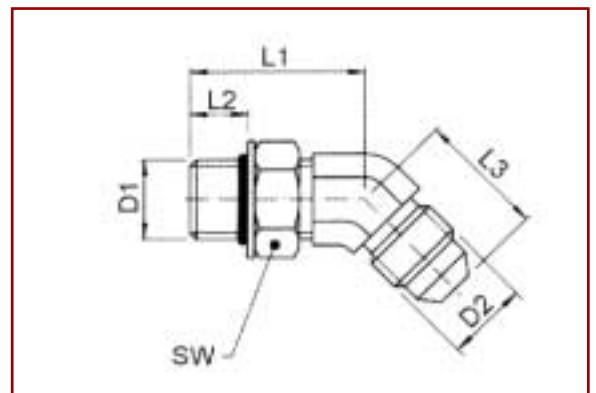
Male stud coupling type GEV...

article-No.	D1 thread	D2 thread	SW mm	L1 mm	L2 mm
GEV-18-1220	G1/8"	7/16"-20	14	30,0	8,0
GEV-14-1220	G1/4"	1/2"-20	19	37,8	12,0
GEV-38-3416	G3/8"	1/2"-16	22	38,5	12,0
GEV-716-1220	7/16"-20	7/16"-20	14	31,2	9,2
GEV-1220-1220	1/2"-20	1/2"-20	16	31,2	9,2



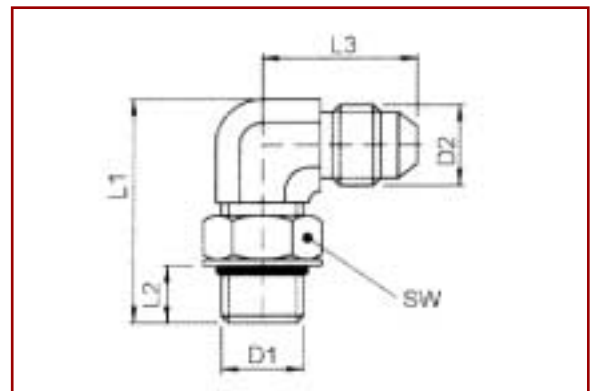
Male stud elbow 45° type WEV-45

article-No.	D1 thread	D2 thread	SW mm	L1 mm	L2 mm	L3 mm
WEV-45-18-1220	G1/8"	7/16"-20	14	26,7	8,0	18,3
WEV-45-14-1220	G1/4"	1/2"-20	19	29,0	12,0	20,8
WEV-45-38-3416	G3/8"	1/2"-16	22	33,0	12,0	24,9
WEV-45-716-1220	7/16"-20	7/16"-20	14	26,7	9,2	18,3
WEV-45-1220-1220	1/2"-20	1/2"-20	17	26,7	9,2	19,6



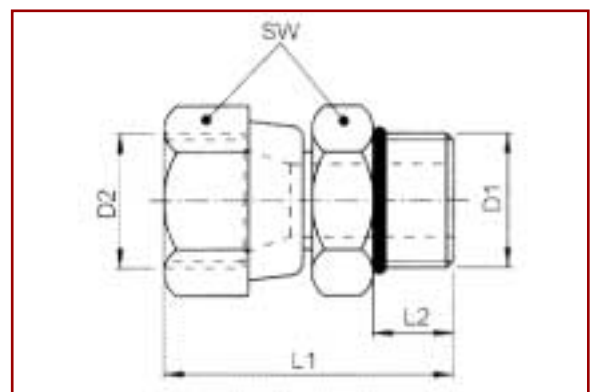
Male stud elbow 90° type WEV-90

article-No.	D1 thread	D2 thread	SW mm	L1 mm	L2 mm	L3 mm
WEV-90-18-1220	G1/8"	7/16"-20	14	26,2	8,0	22,6
WEV-90-14-1220	G1/4"	1/2"-20	19	31,8	12,0	26,6
WEV-90-38-3416	G3/8"	1/2"-16	22	36,8	12,0	31,8
WEV-90-716-1220	7/16"-20	7/16"-20	14	26,2	9,2	22,6
WEV-90-1220-1220	1/2"-20	1/2"-20	16	27,7	9,2	24,1



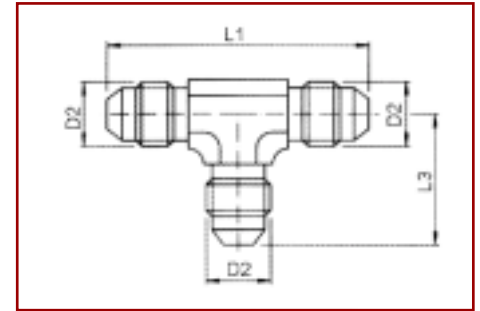
Male stud coupling type GEA-E..

article-No.	D1 thread	D2 thread	SW mm	L1 mm	L2 mm
GEA-E-18-1220	G1/8"	7/16"-20	14	30,0	8,0
GEA-E -14-1220	G1/4"	1/2"-20	19	37,8	12,0
GEA-E -38-3416	G3/8"	1/2"-16	22	38,5	12,0
GEA-E -716-1220	7/16"-20	7/16"-20	14	31,2	9,2
GEA-E -1220-1220	1/2"-20	1/2"-20	16	31,2	9,2



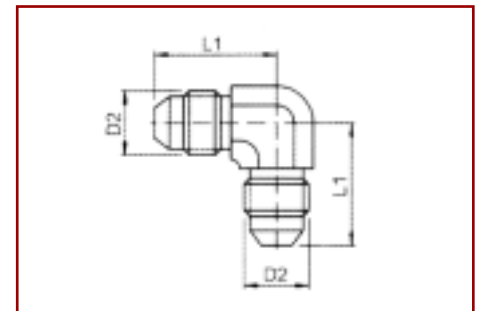
Equal tee type TV-...

article-No.	D2 thread	L1 mm	L2 mm
TV-18-1220	7/16"-20	45,2	22,6
TV-14-1220	1/2"-20	48,2	24,1
TV-38-3416	1/2"-16	63,6	31,8



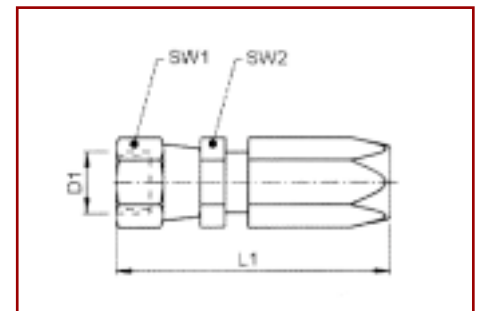
Equal elbow 90° type WV-90...

article-No.	D2 thread	L2 mm
WV-90-716	7/16"-20	22,6
WV-90-1220	1/2"-20	24,1
WV-90-3416	1/2"-16	31,8



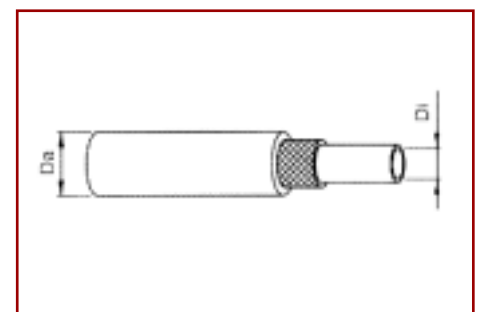
Hose connector type SVSA-G-...

article-No.	D1 hose	D2 thread	SW1 mm	SW1 mm	L1 mm
SVSA-G-716	4,8	7/16"-20	14	16	54,0
SVSA-G-1220	6,3	1/2"-20	16	16	56,5
SVSA-G-3416	9,5	1/2"-16	22	19	73,0



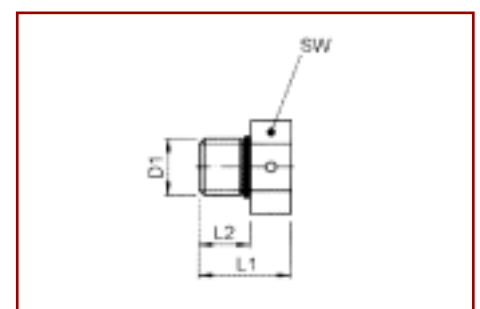
High-pressure hose type HDL-P-...

article-No.	Di mm innen	Da mm aussen	working pressure max.	bursting pressure min.
HDSL-P-48-716	4,8	10,9	210 bar	840 bar
HDSL-P-63-1220	6,3	11,9	190 bar	760 bar
HDSL-P-95-3416	9,5	16,0	155 bar	630 bar

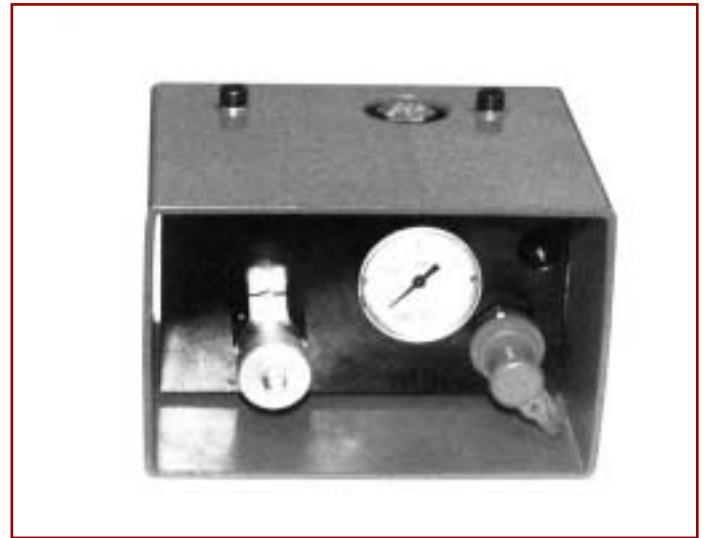


Bursting disk type HDB-...

article-No.	D1	L1 mm	L2 mm	SW mm
HDB-N-1/4-150	G1/4"	18	10	17
HDB-N-1/4-250	G1/4"	18	10	17



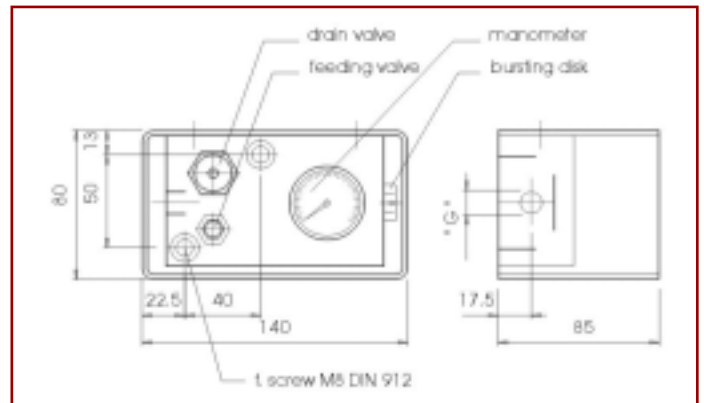
The control instruments are used for the NSP-SPRING-PACKS product line „STANDARD“ and the NSR-SPRING-RAILS product line „STANDARD“. They serve to read and adjust pressure, to fill in nitrogen and to remove pressure out of the system. The control instrument KA-250-N/ZA is additionally equipped with a internal storing tank. This enables the connection of single smaller springs of product line “STANDARD” without the need of adding an additional external storing tank.



Control instrument KA-150-N

max. adm. working pressure 150 bar!
bursting disk security 180 bar!

G	article-No.
G 1/4"	KA-150-N-G1/4"
G 3/8"	KA-150-N-G3/8"
1/2"-20 UNF	KA-150-N-1/2"-20

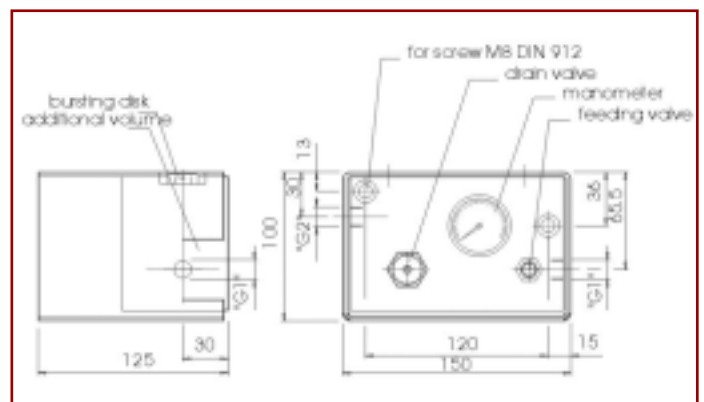


Control instrument KA-250-N/ZA

with additional volume
 $V=0,125l$

max. adm. working pressure 250 bar!
bursting disk security 290 bar!

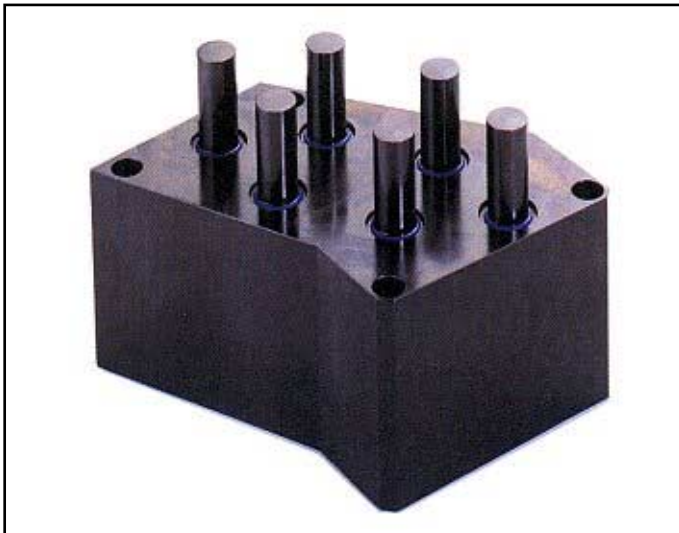
G1/G2	article-No.
G 1/4"	KA-250-N/ZA-G1/4"
G 3/8"/G 1/4"	KA-250-N/ZA-G3/8"
1/2"-20 UNF	KA-250-N/ZA-1/2"-20





■ example 1

length:	307 mm
width:	173 mm
solid height:	108 mm
stroke:	25 mm
filling pressure:	150 bar
load at start position of piston stroke:	117,80 kn
load at end position of piston stroke:	142,10 kn



■ example 2

length:	190 mm
width:	140 mm
solid height:	106 mm
stroke:	50 mm
filling pressure:	150 bar
load at start position of piston stroke:	44,30 kn
load at end position of piston stroke:	56,00 kn



■ example 3

length:	480 mm
width:	165 mm
solid height:	108 mm
stroke:	50 mm
filling pressure:	150 bar
load at start position of piston stroke:	220,90 kn
load at end position of piston stroke:	301,70 kn