

air-cushion
vibration dampers
series FLN



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highly effective low-frequency machine bedding active / passive

Air-cushion vibration dampers of the FLN series are top choice for low-frequency active or passive machine bedding e.g. with

- metrology machines
- metrology tables
- foundations
- punches
- nibbling machines
- compressors
- ventilation and cooling devices / HVAC aggregates

The FLN air-cushion vibration damper consists of an elastomer-based pressure container, re-inforced thus by steel rings, and mounted on a steel or aluminium base plate. A variety of 8 different element sizes is available. Air-feed via standard car tyre valves.

Depending on the respective load, the intrinsic frequency ranges from appr. 3 - 5 Hz, in the pressure-less state appr. 8 Hz. Vertical and horizontal rigidity are more or less identical.

The elastomer-based pressure container is manufactured from an oil- and ageing resistant CR quality. Pressure- and base plates are made of electro-plated steel, except for sizes FLN 65 to FLN 280, where aluminium is used.

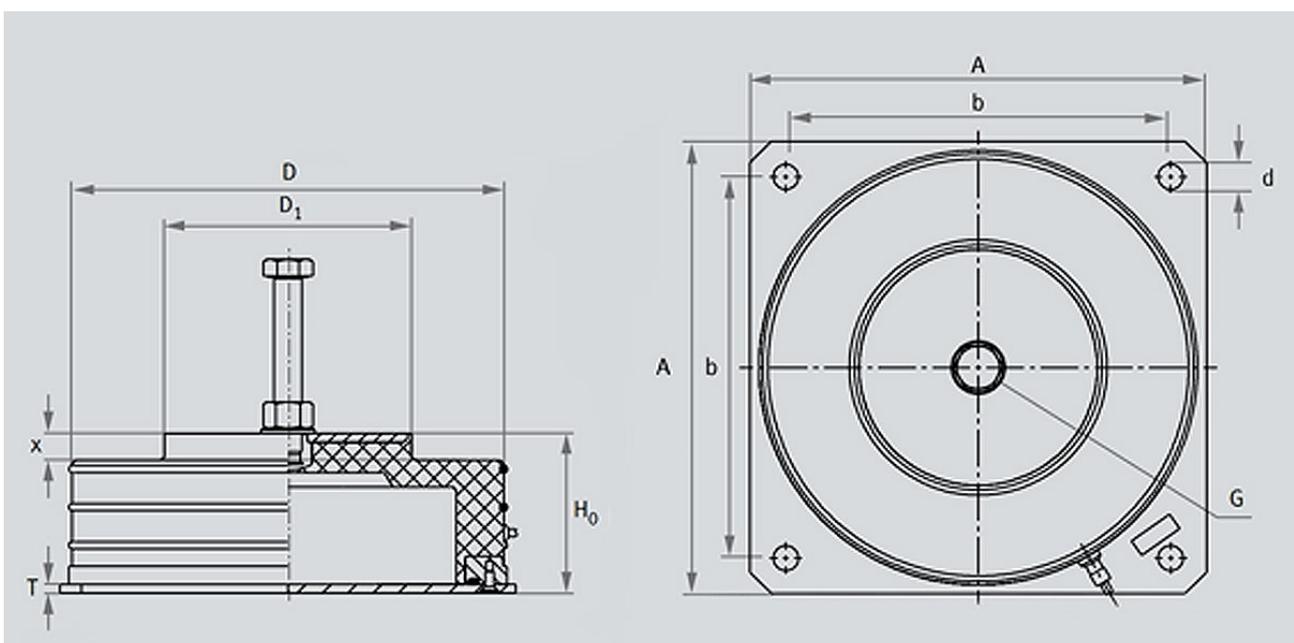
The version FS with non-slip board NBR 9002 at the bottom facilitates an anchor-free ('no-drilling') installation.

The element size should be chosen in such fashion, that the maximum allowed operational pressure of 5 to 6 bar is not exceeded. The overlaying maximum dynamic load should also not transgress the maximum allowed operational load. Best isolation grades are achieved, if over-dimensioning is avoided.

FLN version BO - with fastening holes

for ground-bolting (bolt anchor type FAZ available separately - please refer to the optional supplies at the bottom of this document)

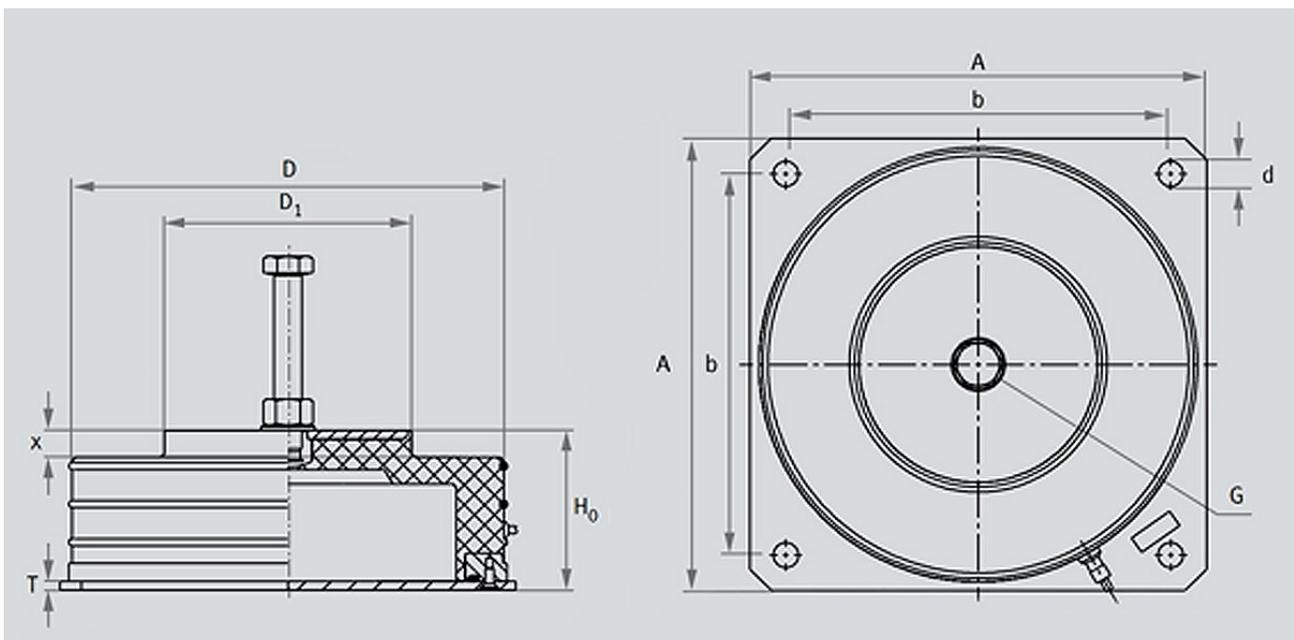
type		A	b	d	D	D1	Ho	Ni	G	T	operational pressure	load
description	article number	mm	mm	mm	mm	mm	mm	mm		mm	bar	daN
FLN 65/BO	7001 0001	75	60	7	73	28	65	± 5	M 10	3	1,5 - 5	15 - 65
FLN 180/BO	7001 0002	105	89	7	105	52	65	± 5	M 12	3	1,5 - 5	50 - 180
FLN 280/BO	7001 0003	130	108	7	127	60	90	± 6	M 12	3	1,5 - 6	70 - 280
FLN 600/BO	7001 0004	175	153	7	172	96	90	± 6	M 12	3	1,5 - 6	150 - 600
FLN 1300/BO	7001 0005	255	215	14	245	138	90	± 6	M 16	5	1,5 - 6	300 - 1300
FLN 2600/BO	7001 0006	343	305	14	338	205	90	± 6	M 16	5	1,5 - 6	600 - 2600
FLN 5500/BO	7001 0007	470	406	20	468	300	90	± 6	M 24	6	1,5 - 6	1200 - 5500
FLN 10000/BO	7001 0008	610	508	20	610	430	90	± 6	M 24	6	1,5 - 6	2500 - 10000



FLN version FS - free-standing with non-slip board

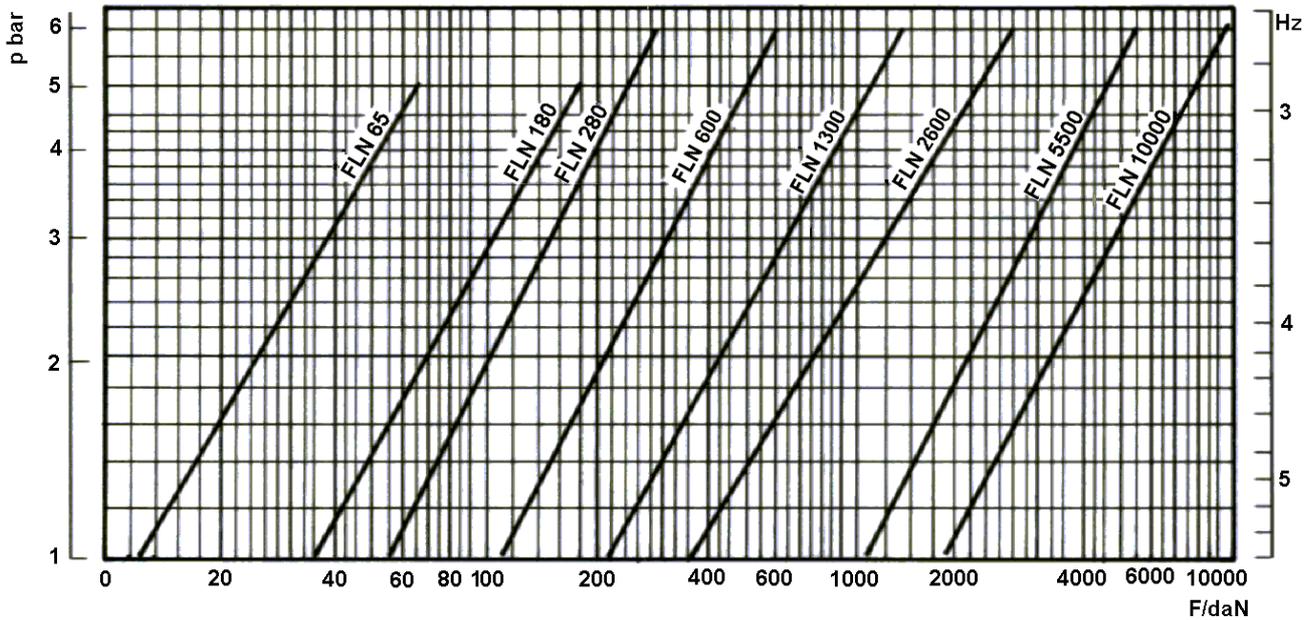
free-standing with non-slip board NBR 9002 (2 mm thickness) at the bottom for anchor-free installation

type		A	b	d	D	D1	Ho	Ni	G	T	operational pressure	load
description	article number	mm	mm	mm	mm	mm	mm	mm		mm	bar	daN
FLN 65/FS	7001 0009	75	60	7	73	28	65	± 5	M 10	3	1,5 - 5	15 - 65
FLN 180/FS	7001 0010	105	89	7	105	52	65	± 5	M 12	3	1,5 - 5	50 - 180
FLN 280/FS	7001 0011	130	108	7	127	60	90	± 6	M 12	3	1,5 - 6	70 - 280
FLN 600/FS	7001 0012	175	153	7	172	96	90	± 6	M 12	3	1,5 - 6	150 - 600
FLN 1300/FS	7001 0013	255	215	14	245	138	90	± 6	M 16	5	1,5 - 6	300 - 1300
FLN 2600/FS	7001 0014	343	305	14	338	205	90	± 6	M 16	5	1,5 - 6	600 - 2600
FLN 5500/FS	7001 0015	470	406	20	468	300	90	± 6	M 24	6	1,5 - 6	1200 - 5500
FLN 10000/FS	7001 0016	610	508	20	610	430	90	± 6	M 24	6	1,5 - 6	2500 - 10000



To be noted: for the air-cushion dampers of the series FLN, it is compulsory to fasten them to the to-be-isolated machine via the included mounting screw DIN 933. In addition, we would like to recommend the general application of the optional mounting plates, for a full-faced covering of the air cushion dampers. This facilitates protection against sinking-in, should a loss of pressure occur.

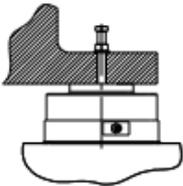
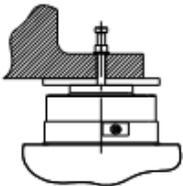
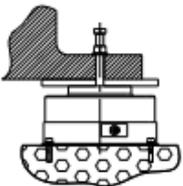
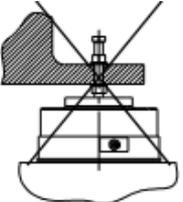
graphs on FLN characteristics



By default, the FLN elements are supplied in a pressure-less state. After mounting, height H is adjusted by administering compressed air, with a maximum of 5 bar respectively 6 bar, in a range of +/- 5 mm respectively +/- 6 mm.

Important: Prior to de-loading, the element must be completely de-ventilated.

mounting scheme FLN

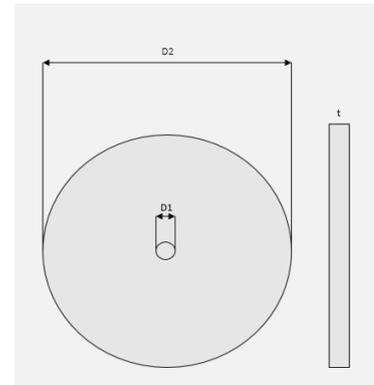
air cushion damper FLN	air cushion damper FLN with mounting plate, given that the machine foot does not cover the element in full	air cushion damper FLN with mounting plate and ground-anchoring	improper mounting
			

optional supplies

mounting plates

for a full-faced covering of the air cushion dampers, facilitating protection against sinking-in, should a loss of pressure occur

type		D2	D1	t	weight
description	article number	mm	mm	mm	kg
mounting plate for FLN 65	7002 0001	75	11 for M10	6	0,2
mounting plate for FLN 180	7002 0002	105	13 for M12	8	0,5
mounting plate for FLN 280	7002 0003	130	13 for M12	8	0,8
mounting plate for FLN 600	7002 0004	175	13 for M12	10	1,9
mounting plate for FLN 1300	7002 0005	250	17 for M16	10	3,8
mounting plate for FLN 2600	7002 0006	340	17 for M16	10	7,1
mounting plate for FLN 5500	7002 0007	470	26 for M24	15	20,0
mounting plate for FLN 10000	7002 0008	610	26 for M24	15	34,1



bolt anchors FAZ

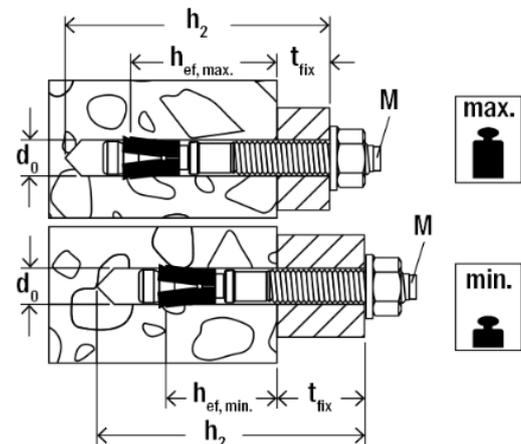
zinc electro-plated (gvz) - for ground-bolting of the air cushion dampers

stainless steel (R) - for ground-bolting of the air cushion dampers in outdoor settings

type		material	thread	key width	nominal drill diameter	min. drill hole depth with stick-through mounting	dowel length	max. net length	assembly torque
description	article number		Ø x length	SW	d ₀	h ₂	l	h _{ef,max./h_{ef,min.}}	t _{fix} / Nm
suitable for FLN 65 - FLN 600									
FAZ II 6/10 gvz	10320 00006	zinc-plated	M 6 x 25	10	6	60	65	10/- mm	8
FAZ II 6/10 R	10320 00066	stainless steel	M 6 x 25	10	6	60	65	10/- mm	8
suitable for FLN 1300 - FLN 2600									
FAZ II 12/10 gvz	10320 00007	zinc-plated	M 12 x 61	19	12	100	110	10/30 mm	60
FAZ II 12/10 R	10320 00077	stainless steel	M 12 x 61	19	12	100	110	10/30 mm	60
suitable for FLN 5500 - FLN 10000									
FAZ II 16/5 gvz	10320 00016	zinc-plated	M 16 x 64	24	16	115	128	5/25 mm	110
FAZ II 16/5 R	10320 00116	stainless steel	M 16 x 64	24	16	115	128	5/25 mm	110

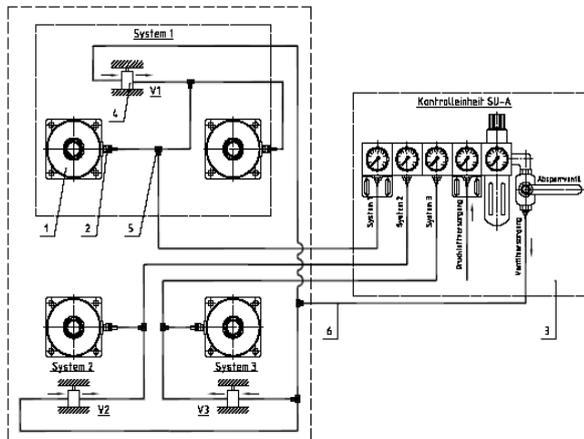


picture and drawing courtesy
Fa. Fischer Dübel



height regulation system

with mechanical / pneumatic proportional valves
including screw fittings and tubings



scheme of the height regulation system



height regulation system valve

pressure regulation- and monitoring system

on request

integrated viscose dampers

facilitating higher dampening - on request

Technical modifications subject to change! Any previous versions of this document are herewith null and void!