



Bilz Vibration Technology · Böblingen Str. 25 · D-71229 Leonberg / Germany
Phone + 49 (0) 71 52/30 91-0 · Fax + 49 (0) 71 52/30 91 10 · Internet: www.bilz-schwingungstechnik.de · eMail: info@bilz-schwingungstechnik.de





BILZ Vibration Technology GmbH was founded in 1985, specializing in the field of anti-vibration and structure born noise isolation. BILZ is a market leader in the European Community in this field as a supplier to machine builders and the equipment manufacturing industry, as well as the automobile industry and their suppliers.

Our product range covers a wide range of applications. From isolation of a forging hammer with isolating plate sets, to air spring systems that protect highly sensitive machines in the semiconductor industry, there is practically no vibration problem which cannot be solved today.

We have tried to arrange this brochure as clear and understandable as possible. If you have any questions, please ask.

Our engineers are ready to solve your toughest vibration problems.



F o r e a c h p r o b l e m
w e p r o v i d e t h e c o r r e c t s o l u t i o n i

Principles and Aims

Quality

In our opinion, quality stands for the most modern state-of-the-art products meeting your expectations and specifications. Only the best is good enough for your application.

Service

A top priority of our service is providing our customers with training by one of our staff members.

Delivery

Most products listed in this catalogue are warehoused in our facility in Leonberg and can be shipped at short notice.

Technical qualification

Our engineers and technical specialists are continually participating in training, and are being kept aware of current developments keeping them up-to-date with the latest technical standards.

Pricing

Our prices are a fair reflection of our systems and components. We take care that this balance is not disturbed. If prices are too high, our customers must bear the burden, if they are too low, we lack the means to innovate and perform our services.



BILZ-Technology and Know-How for maximum quality

- Vibration and structure-borne noise insulation through the most modern materials.
- Cost reduction due to flexible machinery.
- Quality improvement through vibration suppression.
- Preservation of machinery and buildings.
- Prolonged tool and machinery life
- Protection of health through vibration and structure-borne noise insulation (environment protection)

Precision Wedge Mounts	page 8
Leveling Elements	page 12
Accessories	page 15
Insulation Plates	page 16
FAEBI® Rubber Air-Springs	page 20
BiAir® Membrane Air-Springs	page 24
Insulated Tables	page 27
Isolated Foundations	page 28
AIS® Active Isolation System	page 30
Measurement Techniques	page 34
Application examples	page 36
Representatives	page 38



General Information on Vibration Technology

Today the reduction of vibration emission and vibration immission play an important part in the operation of plant and machinery, etc. The constant improvement in machine performance over recent years has generally been accompanied by increased speeds and cutting rates, as well as an increase in impact power in the field of forming. This means an increase in the vibrations transmitted to the surroundings, which must be efficiently controlled.

Matching up the important factors

Insulation of sinusoidal vibrations

The efficiency of vibration insulation depends to a large extent on the relationship between the machine speed/stroke rate and the natural vibration frequency of the insulator (matching ratio). In general, it can be said that the lower the natural vibration frequency of the insulator, i.e. the greater the ratio between forcing frequency and natural frequency, the greater the efficiency of the insulator. The diagram beside shows that vibration insulation does not take effect until the variable n is greater than $\sqrt{2}$.

It follows that: Efficiency of vibration insulation

$$f_0 = \text{natural frequency of isolator} \quad \eta = \frac{\left(\frac{f_m}{f_0}\right)^2 - 2}{\left(\frac{f_m}{f_0}\right)^2 - 1} \cdot 100 \%$$

$$f_m = \text{forcing frequency of the machine}$$

Transmissibility by taken dampening factor D into consideration is:

$$V_p = \sqrt{\frac{1 + 4D^2\eta^2}{(1 - \eta^2)^2 + 4D^2\eta^2}} \quad ; \quad \eta = \frac{\text{forcing frequency}}{\text{natural frequency of isolates}}$$

Impact insulation

The physical properties of impacts are their duration, direction and magnitude. The object of impact insulation is to change the forcing frequency consisting of a high kick into an impulse of longer duration accompanied by small residual forces. Different from periodically excited vibrations, the system provided with springs vibrates in the

So, the efficiency factor of an impact insulation is:

$$J_s = 100 \times \left(1 - \frac{1}{\eta^2}\right) \% \quad ; \quad \eta_s = \frac{\eta_b}{\eta_e}$$

Types of Vibration Insulation

We differentiate between active and passive insulation. If the objective is to prevent spreading of the vibrations caused by a machine, we talk of active insulation. If, on the other hand, precision machining equipment

Important Definitions

Damping = the physical property of an insulator to limit resonance vibration to the permissible level. During this process, mechanical energy is converted into heat.

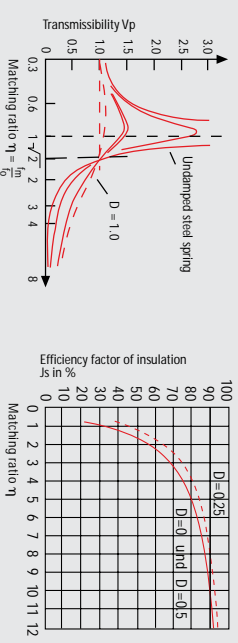
The basic principle of vibration isolation

The objective of using insulating mechanisms for machine mounting is the reduction of pulsating (repetitive), or sinusoidal vibrations. The task is to keep the motion (amplitude) of the flexibly mounted machine within permissible limits for operation. The vibration insulators selected must have sufficient dampening capacity!

No insulating effect can be expected at frequency ratios of less than $\sqrt{2}$. Quite the opposite: an increase in (excessive) vibration must be anticipated.

As a rule a tuning ratio between 3 ... 4 is attempted, with 3 being taken as the technical minimum and 4 the economic maximum.

A bigger frequency (matching) ratio than 4 cannot be justified for economic reasons, as the material expense would increase out of proportion to the insulating effect.



excited natural frequency of the insulated system, not according to its number of strokes. The residual forces transferred via the insulators become increasingly smaller, the longer the natural vibration period lasts and therefore the smaller the natural frequency of the system sitting on a foundation equipped with springs.

η_b = natural frequency of the solidly secured
 η_e = natural frequency of the system when placed on insulators containing springs

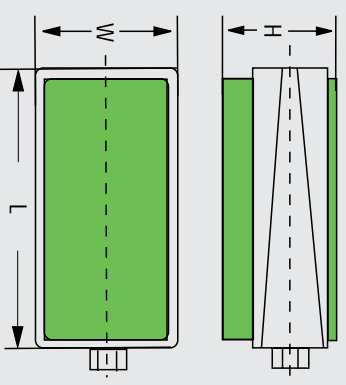
which is extremely sensitive to vibrations is to be insulation-mounted, this is described as passive insulation.

Isolation = insulating of an actuating force.





precision wedge mount



Precision Wedge Mounts, Series PK, free-standing

BILZ Precision Leveling Wedge PK are manufactured as a free-standing series. They can be bolted onto the machine and through to the foundation. The design permits the highest of precision leveling within the range of 1/100 mm. Creep from their preset positions due to vibration influence is prevented by a self-locking device. The large supporting surfaces of the wedge mounts permit optimum foundation support and rigidity. High solidity and equally high vibration insulation is obtained through the addition of selected BILZ insulating plates.

Notice: We are always pleased to fulfill special requests!

Wrench sizes A/F for BILZ PKs

type	inside	outside	type	inside	outside
PK 1	SW 6	SW 13	PKA/PKD 1	SW 10	SW 19
PK 2	SW 10	SW 19	PKA/PKD 2	SW 12	SW 22
PK 3	SW 12	SW 22	PKA/PKD 3	SW 12	SW 22
PK 4	SW 12	SW 22	PKA/PKD 4	SW 14	SW 27
PK 5	SW 14	SW 27	PKA/PKD 5	SW 14	SW 27
PK 6	SW 14	SW 27	PKA/PKD 6	SW 17	SW 32
PK 7	SW 17	SW 32	PKA/PKD 7	SW 19	SW 41
PK 8	SW 19	SW 41	PKA/PKD 8	SW 22	SW 50
PK 9	SW 22	SW 50			



A

range of application
Component Set A
Top:
anti skid plate BR 7-1
Bottom:
Insulating plate B 4-1
General tool and graphic machines, in particular machines with horizontal components.
High anti-slip protection!

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-A	450	105	55	58	8
PK 2-A	900	150	75	62	10
PK 3-A	1800	200	95	68	10
PK 3/72-A	1800	200	95	94	10
PK 4-A	4000	200	200	68	12
PK 4/72-A	4000	200	200	94	12
PK 5-A	5000	200	250	94	18
PK 6-A	8200	250	330	94	18
PK 7-A	12000	300	400	94	20
PK 8-A	20000	400	500	94	20
PK 9-A	30000	500	600	142	22



D

range of application
Component Set D
Top:
anti skid plate BR 7-1
Bottom:
Insulating plate B 5
For machines with extremely high dynamic fraction such as presses, stamping machines, shears etc.

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-D	800	105	55	66	8
PK 2-D	1300	150	75	70	10
PK 3-D	2500	200	95	77	10
PK 3/72-D	2500	200	95	104	10
PK 4-D	5500	200	200	77	12
PK 4/72-D	5500	200	200	104	12
PK 5-D	7000	200	250	104	18
PK 6-D	10000	250	330	104	18
PK 7-D	16000	300	400	104	20
PK 8-D	30000	400	500	104	20
PK 9-D	45000	500	600	152	22



B

range of application
Component Set B
Top:
anti skid plate BS
Bottom:
Insulating plate B0
Special design for CNC lathes, surfaces and cylindrical grinders, drilling and milling machines, machining centers, transfer lines.

type	load daN/pc.t	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-B	600	105	55	53	8
PK 2-B	1300	150	75	57	10
PK 3-B	2200	200	95	64	10
PK 3/72-B	2200	200	95	89	10
PK 4-B	4800	200	200	64	12
PK 4/72-B	4800	200	200	89	12
PK 5-B	6000	200	250	89	18
PK 6-B	10000	250	330	89	18
PK 7-B	15000	300	400	89	20
PK 8-B	24000	400	500	89	20
PK 9-B	36000	500	600	137	22



E

range of application
Component Set E
Top:
anti skid plate BS
Bottom:
Insulating plate BS
For all machines and systems requiring no vibration insulation. Ideally suited for assembly.
Good stability due to non-slip character of plates extremely low construction!

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-E	1400	105	55	40	8
PK 2-E	3500	150	75	44	10
PK 3-E	5700	200	95	50	10
PK 3/72-E	5700	200	95	76	10
PK 4-E	12000	200	200	50	12
PK 4/72-E	12000	200	200	76	12
PK 5-E	20000	200	250	76	18
PK 6-E	25000	250	330	76	18
PK 7-E	35000	300	400	76	20
PK 8-E	60000	400	500	76	20
PK 9-E	90000	500	600	124	22



C

range of application
Component Set C
Top:
anti skid plate BS
Bottom:
Insulating plate B 32
For highly effective insulations in the active and passive range. In particular when used on upper floors. Please ask our advice, without obligation, regarding any critical situation.

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-C	400	105	55	63	8
PK 2-C	800	150	75	67	10
PK 3-C	1500	200	95	74	10
PK 3/72-C	1500	200	95	99	10
PK 4-C	3200	200	200	74	12
PK 4/72-C	3200	200	200	99	12
PK 5-C	4000	200	250	99	18
PK 6-C	6500	250	330	99	18
PK 7-C	10000	300	400	99	20
PK 8-C	16000	400	500	99	20
PK 9-C	25000	500	600	147	22



F

range of application
Component Set F
Top:
anti skid plate BS
Bottom:
Insulating plate B 6
For extremely high loadability.
Very high level constancy.

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	range of adjustment mm
PK 1-F	2000	105	55	53	8
PK 2-F	4000	150	75	57	10
PK 3-F	6500	200	95	64	10
PK 3/72-F	6500	200	95	89	10
PK 4-F	14000	200	200	64	12
PK 4/72-F	14000	200	200	89	12
PK 5-F	21000	200	250	89	18
PK 6-F	28000	250	330	89	18
PK 7-F	45000	300	400	89	20
PK 8-F	70000	400	500	89	20
PK 9-F	110000	500	600	137	22



● Precision Leveling Wedge Mounts, Series PKA (bolt-on)

BILZ precision leveling wedge PKA are used where a firm mounting with the machine is required. Preferably on machines with a high axial thrust such as die-casting machines, injection machines, shock testing machines, and cold extrusion presses etc.

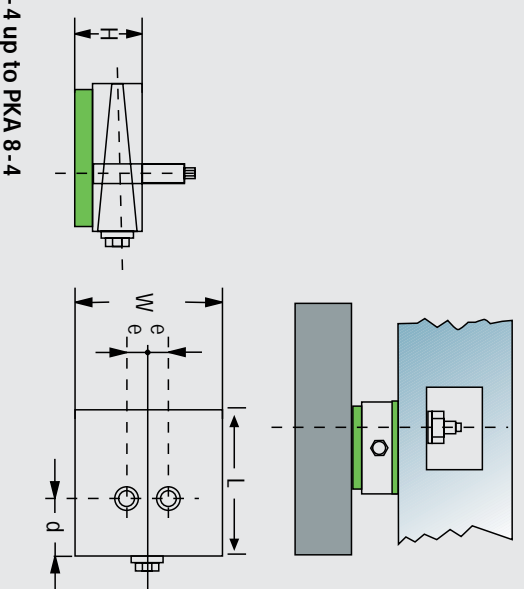
Notice: We are always pleased to fulfill special requests!

PKA 1-0 up to PKA 8-0

Range of application: lathes, horizontal drilling machines, surface and cylindrical grinders, machining centers

Equipment:

Bottom: **insulating plate B0**



PKA 1-4 up to PKA 8-4

Range of application: Plastic extrusion machines, pressure diecasting machines, planers, shock testing machines, cold extrusion presses etc.

Equipment:

Bottom: **insulating plate B 4-1**
Very good anti-slip properties.

● Precision Wedge Mounts, Series PKD (bolt-through)

BILZ precision leveling wedge PKD are used for machines which need to be fixed to a foundation, due their unfavourable stability. Also for machines which must be "squeezed" or "pulled" when being aligned – e.g. for machines with little natural rigidity!

Notice: We are always pleased to fulfill special requests!

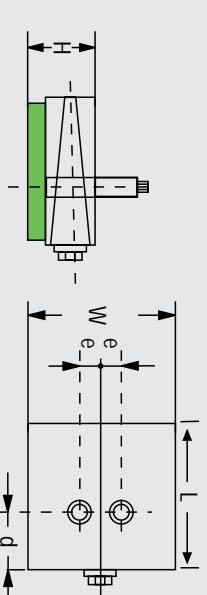
PKD 1-0 bis PKD 8-0

Range of application: drilling and milling machines, machining centers, special machines, long lathes, long planers

Bottom: **Insulating plate B0**

Screws, nuts and anchors can be supplied upon request (page 15).

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	d mm	e mm	bore ø	range of adjustment mm
PKD 1-0	1300	115	115	115	59	50	24	8
PKD 2-0	2200	150	150	150	61	60	23	10
PKD 3-0	4000	200	200	200	62	80	27	12
PKD 3/7/2-0	4000	200	200	200	87	75	27	12
PKD 4-0	5000	200	200	250	87	95	27	18
PKD 5-0	10000	250	330	330	87	125	105	18
PKD 6-0	15000	300	400	400	87	150	100	20
PKD 7-0	24000	400	500	500	87	200	130	20
PKD 8-0	36000	500	600	600	135	255	150	22



● With spherical seating PKAK / PKDK Precision Wedge Mounts, Series PKAK (bolt-on) Series PKDK (bolt-through)

BILZ precision leveling wedge PKAK / PKDK are used to compensate angular differences between machines and foundations. Especially for machines with a long bed and high demands in alignment.

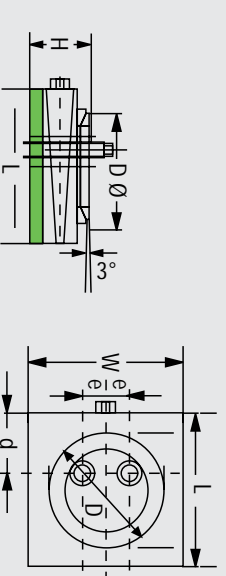
Notice: We are always pleased to fulfill special requests!

PKDK 1-0 bis PKDK 4-0

Range of application: drilling and milling machines, machining centers, special machines, long lathes, long planers

Bottom: **Insulating plate B0**

type	load daN/pc.	length L mm	width W mm	height H in intermediate pos. mm	D mm	d mm	e mm	bore / threaded ø	range of adjustment mm
PKAK 1-0	1300	115	115	66	110	50	24	M 16	8
PKAK 2-0	2200	150	150	78	150	60	23	M 18	10
PKAK 3-0	4000	200	200	79	150	80	27	M 20	12
PKAK 4-0	5000	200	250	104	150	95	27	M 20	18
PKDK 1-0	1300	115	115	66	110	50	24	M 16	8
PKDK 2-0	2200	150	150	78	150	60	23	M 18	10
PKDK 3-0	4000	200	200	79	150	80	27	M 20	12
PKDK 4-0	5000	200	250	104	150	95	27	M 20	18



type	load daN/pc.	length L mm	width W mm	height H in intermediate position mm	d mm	e mm	inside thread	range of adjustment mm
PKA 1-0	1300	115	115	59	50	24	M 16	8
PKA 2-0	2200	150	150	61	60	23	M 18	10
PKA 3-0	4000	200	200	62	75	27	M 20	12
PKA 3/7/2-0	4000	200	200	87	75	27	M 20	12
PKA 4-0	5000	200	250	87	95	27	M 20	18
PKA 5-0	10000	250	330	87	125	105	M 24	18
PKA 6-0	15000	300	400	87	150	100	M 24	20
PKA 7-0	24000	400	500	87	200	130	M 30	20
PKA 8-0	36000	500	600	137	255	150	M 30	22
PKA 1-4	1000	115	115	59	50	24	M 16	8
PKA 2-4	1800	150	150	61	60	23	M 18	10
PKA 3-4	3000	200	200	62	75	27	M 20	12
PKA 3/7/2-4	3000	300	200	87	75	27	M 20	12
PKA 4-4	4000	200	250	87	95	27	M 20	18
PKA 5-4	10000	250	330	87	125	105	M 24	18
PKA 6-4	15000	300	400	87	150	100	M 24	20
PKA 7-4	24000	400	500	87	200	130	M 30	20
PKA 8-4	36000	500	600	137	255	150	M 30	22

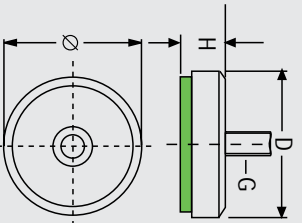




● Leveling elements series, type **BNSH**

Range of application: BILZ leveling elements **BNS** are specially suited for the positioning of presses, automatic stamping machines automatic die-casting machines etc.
Examples: **BNSH 120/50** means: equipped with type **50**.
Application: Medium efficiency of isolation.
BNSH 120/32 means: equipped with type **B32**.
Application: For highly effective insulations. In particular used on upper floors.

type	BNSH	80/50	120/50	160/50	175/50	200/50	250/50	max. load daN/pc.	800	1.600	3.500	4.300	6.500	9.000	type	BNSH	80/32	120/32	160/32	175/32	200/32	250/32	max. load daN/pc.	500	1.000	2.200	2.700	3.600	4.800	height H mm	45	54	60	65	69	69	D = mm	133	175	200	227	270	range of adjustment mm	12	G	M 12 x 1,5 x 100/150	M 16 x 1,5 x 100/150	M 20 x 1,5 x 125/200	M 20 x 1,5 x 125/200	M 24 x 2 x 150/200	M 30 x 2 x 150/200
------	------	-------	--------	--------	--------	--------	--------	-------------------	-----	-------	-------	-------	-------	-------	------	------	-------	--------	--------	--------	--------	--------	-------------------	-----	-------	-------	-------	-------	-------	-------------	----	----	----	----	----	----	--------	-----	-----	-----	-----	-----	------------------------	----	---	----------------------	----------------------	----------------------	----------------------	--------------------	--------------------

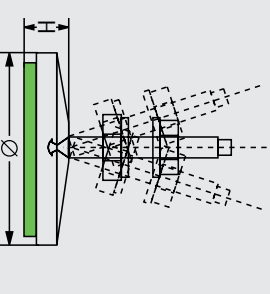
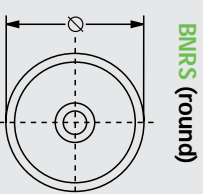
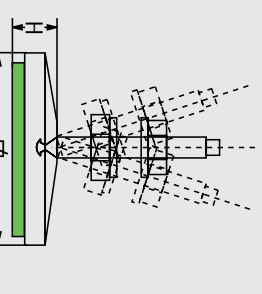
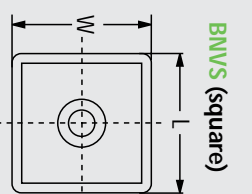


● Leveling elements series, types **BNVS** and **BNRS**

with leveling screws (flexibly connected)
Range of application: Types **BNVS + BNRS** are used in cases where a firm linkage of the element with the machine is desirable! Angle differences are equalized by means of the movable leveling screw.

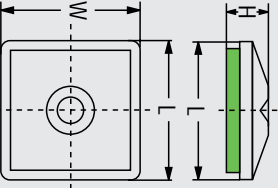
Examples:
BNVS 110/4 = 4 means: equipped with type **B 4!**
Application: milling machines, drilling machines!
BNVS 110/0 = 0 means: equipped with type **B 0!**
Application: lathes, machining centers etc.!
BNVS 110/30-W = 30 W means: equipped with type **B 30 W!**
Application: suited for all machines requiring no vibration insulation, anti-slip only.

Important:
When ordering please specify the desired size of leveling screw. We stock sizes from M 10 to M 24, in lengths from 70 to 300 mm (page 15).

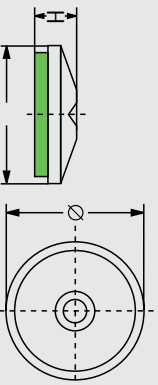


● Leveling elements series of types **BNV** and **BNR**

Range of application: BILZ leveling elements **BNV + BNR** are reliable and economic elements preferably used for light to medium weight machines with respective mounting holes in the machine base.
Examples: **BNV 110/4** = 4 means: equipped with type **B 4!**
Application: milling machines, drilling machines, general use!



type	BNV	50/4	80/4	110/4	115/4	150/4	200/4	load daN/pc.	150	450	1000	1000	1800	3000	type	BNV	50/0	80/0	110/0	115/0	150/0	200/0	load daN/pc.	200	550	1200	1200	2250	4000	type	BNV	50/30W	80/30W	110/30W	115/30W	150/30W	200/30W	load daN/pc.	65	160	400	400	700	1400	type	BNR	50/30W	80/30W	110/30W	150/30W	200/30W	load daN/pc.	55	140	300	450	1000
------	-----	------	------	-------	-------	-------	-------	--------------	-----	-----	------	------	------	------	------	-----	------	------	-------	-------	-------	-------	--------------	-----	-----	------	------	------	------	------	-----	--------	--------	---------	---------	---------	---------	--------------	----	-----	-----	-----	-----	------	------	-----	--------	--------	---------	---------	---------	--------------	----	-----	-----	-----	------



BNR (round)

Screws and nuts can be supplied upon request (page 15).

type	BNR	50/4	80/4	110/4	150/4	200/4	load daN/pc.	150	400	800	1500	2500	type	BNR	50/0	80/0	110/0	150/0	200/0	load daN/pc.	150	500	1000	1800	3500	type	BNR	50/30W	80/30W	110/30W	150/30W	200/30W	load daN/pc.	55	140	300	450	1000
------	-----	------	------	-------	-------	-------	--------------	-----	-----	-----	------	------	------	-----	------	------	-------	-------	-------	--------------	-----	-----	------	------	------	------	-----	--------	--------	---------	---------	---------	--------------	----	-----	-----	-----	------

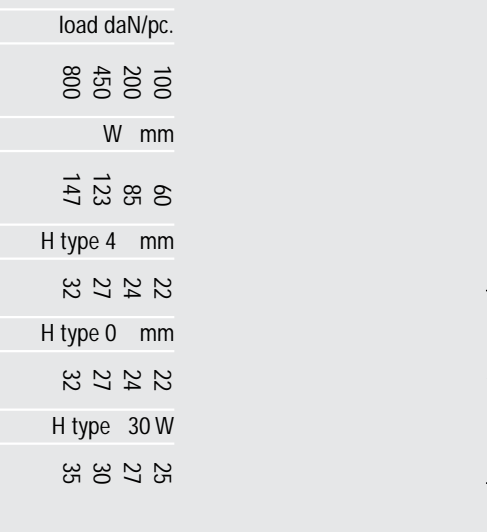
● Leveling elements series, types **BNVS** and **BNRS**

with leveling screws (flexibly connected)
Range of application: Types **BNVS + BNRS** are used in cases where a firm linkage of the element with the machine is desirable! Angle differences are equalized by means of the movable leveling screw.

Examples:
BNVS 110/4 = 4 means: equipped with type **B 4!**
Application: milling machines, drilling machines!
BNVS 110/0 = 0 means: equipped with type **B 0!**
Application: lathes, machining centers etc.!
BNVS 110/30-W = 30 W means: equipped with type **B 30 W!**
Application: suited for all machines requiring no vibration insulation, anti-slip only.

Important:
When ordering please specify the desired size of leveling screw. We stock sizes from M 10 to M 24, in lengths from 70 to 300 mm (page 15).

type	BNVS	50/4	80/4	110/4	150/4	load daN/pc.	150	450	1000	1800	type	BNVS	50/0	80/0	110/0	150/0	load daN/pc.	200	550	1200	2250	type	BNVS	50/30W	80/30W	110/30W	150/30W	load daN/pc.	100	200	450	800	type	BNRS	50/4	70/4	110/4	150/4	load daN/pc.	100	400	800	1500	type	BNRS	50/0	70/0	110/0	150/0	load daN/pc.	150	450	1000	1800	type	BNRS	50/30W	70/30W	110/30W	150/30W	load daN/pc.	50	150	400	800
------	------	------	------	-------	-------	--------------	-----	-----	------	------	------	------	------	------	-------	-------	--------------	-----	-----	------	------	------	------	--------	--------	---------	---------	--------------	-----	-----	-----	-----	------	------	------	------	-------	-------	--------------	-----	-----	-----	------	------	------	------	------	-------	-------	--------------	-----	-----	------	------	------	------	--------	--------	---------	---------	--------------	----	-----	-----	-----



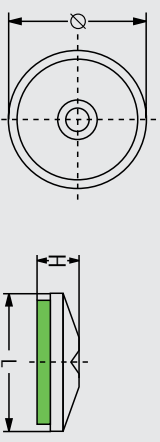
type	BNRS	50/4	70/4	110/4	150/4	load daN/pc.	100	400	800	1500	type	BNRS	50/0	70/0	110/0	150/0	load daN/pc.	150	450	1000	1800	type	BNRS	50/30W	70/30W	110/30W	150/30W	load daN/pc.	50	150	400	800	type	BNRS	50/4	70/4	110/4	150/4	load daN/pc.	100	400	800	1500	type	BNRS	50/0	70/0	110/0	150/0	load daN/pc.	150	450	1000	1800
------	------	------	------	-------	-------	--------------	-----	-----	-----	------	------	------	------	------	-------	-------	--------------	-----	-----	------	------	------	------	--------	--------	---------	---------	--------------	----	-----	-----	-----	------	------	------	------	-------	-------	--------------	-----	-----	-----	------	------	------	------	------	-------	-------	--------------	-----	-----	------	------

for vibration and structure-borne noise isolation



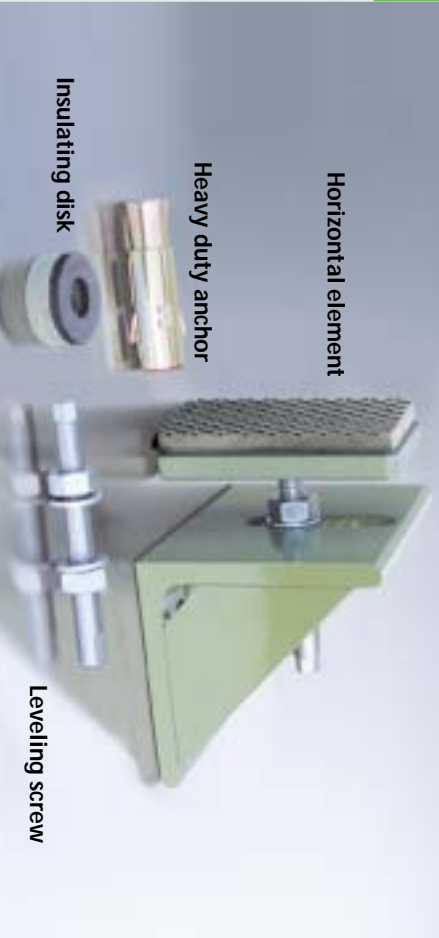
● Leveling Elements, Type Series BNRV and BNRSV in stainless steel

Field of application:
For machines of the food, beverages and tobacco industries. For machines of the packaging, chemistry and pharmaceutical industries. Screws and nuts can be supplied on request.



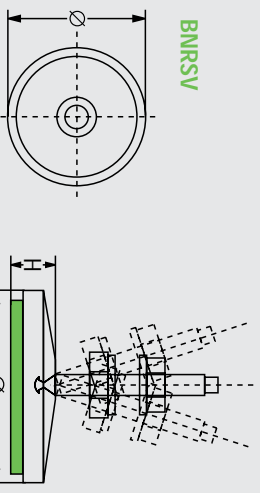
● Type series BNRV without leveling screw		● Type series BNRV with leveling screw	
type	load daN/pc.	type	load daN/pc.
BNRV 50/4	150	BNRV 50/BR 7	50
BNRV 70/4	400	BNRV 70/BR 7	150
BNRV 110/4	800	BNRV 110/BR 7	400
BNRV 150/4	1500	BNRV 150/BR 7	800
		type	load daN/pck.
		BNRV 50/30-W	150
		BNRV 70/30-W	400
		BNRV 110/30-W	800
		BNRV 150/30-W	1500

● Leveling screws (galvanized)	Ø	Length in mm	Ø	Length in mm
Incl: 2 nuts + 2 washers (VA)	M 10	70	M 10	100
For the type series BNV and BNR.	M 12	100	M 12	150
The size of the screws depends upon the size of the hole in the machine foot!	M 16	125	M 16	200
	M 18	150	M 18	250
	M 20	200	M 20	300
	M 24	250	M 24	350



● Type BNRSV with leveling screw (flexibly connected) in stainless steel

Examples:
BNRV 110/4 e.g. BNRSV 110/4 = 4 meaning: equipped with medium hard insulating panel. Provides good vibration and structure-borne noise insulation.
BNRV 110/30-W e.g. BNRSV 110/30-W = 30-W meaning: equipped with soft insulating panel. Provides high-quality vibration and structure-borne noise insulation.



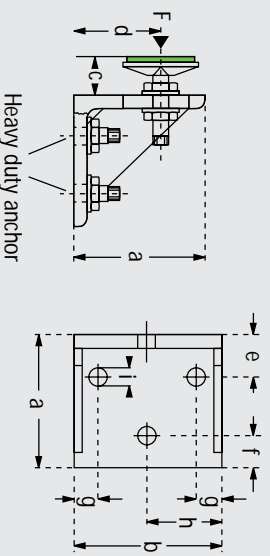
type	load daN/pc.	type	load daN/pc.
BNRSV 50/4	100	BNRSV 50/BR 7	200
BNRSV 70/4	400	BNRSV 70/BR 7	600
BNRSV 110/4	800	BNRSV 110/BR 7	1200
BNRSV 150/4	1500	BNRSV 150/BR 7	2500

leveling screw incl. 2 nuts (VA) + 2 washers
M 10 x 70/100/200
M 12 x 100/150/200
M 16 x 100/150/200
M 20 x 100/150/200

BNRV 110/BR 7 e.g. BNRSV 110/BR 7 = BR 7 stands for: equipped with anti-slip panel. No vibration insulation!

● Horizontal elements

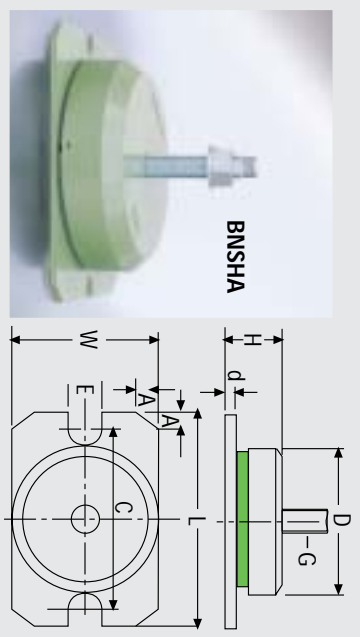
Size 1, consisting of: steel angle, leveling element type BNV 115/4, 3 screws M 16x150, 2 patented plugs M 16
Size 2, consisting of: steel angle, leveling element type BNV 115/5, 3 screws M 20x150, 3 patented plugs M 20



Dimensions mm	Size 1	a	b	c	d	e	f	g	h	i	F in daN
Size 1	140	125	45	60	115	50	25	35	90	17,5	1500
Size 2	160	180	55	60	140	50	40	35	90	22	2500

● Leveling Elements, Type Serie BNSHA

Range of application: BILZ leveling elements **BNS** are specially suited for the positioning of presses, automatic stamping machines automatic die-casting machines and for all machines which have to be mounted to the floor.
Examples: **BNSH 120/50** means: equipped with type **B50**.
Application: Medium efficiency of isolation.
BNSH 120/32 means: equipped with type **B32**.
Application: For highly effective insulations. In particular used on upper floors.



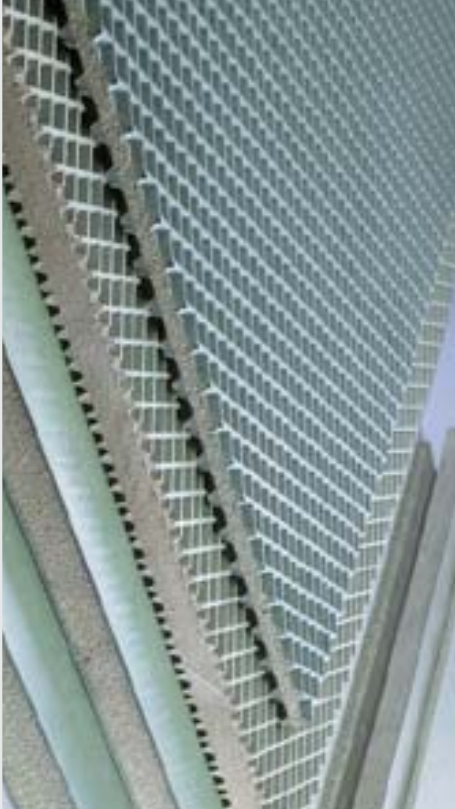
	L	W	D	C	d	E	A	H	G
BNSHA 80	140	90	96	120	5	8	15	50	M 12 x 100/150
BNSHA 120	180	125	133	160	5	13	15	59	M 16 x 1,5x 100/150
BNSHA 160	220	170	175	200	5	16	15	65	M 20 x 1,5x 125/200
BNSHA 175	260	185	200	230	8	20	20	73	M 20 x 1,5x 125/200
BNSHA 200	300	225	227	270	8	20	20	77	M 24 x 1,5x 150/200
BNSHA 250	330	265	250	300	8	20	20	77	M 30 x 2 x 150/200

● Anchor commendation:

Heavy duty anchor SL
Fischer anchor R + threaded rod RG
Fischer anchor bolt FAZ

for screws Ø	bis M 12 bis M 20 bis M 30	outside Ø mm	hole Ø mm	mounting height mm	max. prestress force daN
		35	13	20	200
		50	21	21	300
		70	31	25	450

Range of adjustment and load capacity same as BNSH (page 12).



● **Product Description**

BLIZ insulating plates are highly developed materials designed to combat problems caused in many industrial sectors by vibrations and structure-borne noise. Made from an exactly defined combination of nitrile rubber, cork particles and cross-linked polyester-fibre, this high-grade compound material possesses all the physical and mechanical properties. One major advantage of this new compound material is its resistance to modern cooling lubricants: the mountings can thus also be used in oil sumps without any problems. Particularly worth mentioning are the superb "compression set" values. These are extremely important, for example, if modern machine tools are to be insulation-mounted while ensuring long-term geometric precision. 8 different types of plates provide the technically optimal solution to almost any vibration problem. The primary aim in the development of these was to cater for the variatum kinematic characteristics for e.g. lathes, milling machines and grinding machines, as well as those of presses an feed presses!

Resistance to Aging
The service life of these mounting plates is nearly unlimited if the load values are observed. No permanent deformation.

Resistance to Chemicals
Extremely high degree of resistance to conventional oils, greases, acids, etc.
Completely resistant to cooling emulsions, thus allowing machine mounting in oil sumps.

Resistance to Temperature
+ 120° to - 20° Celsius

Group: lubricants
Roller and friction bearing greases, gear lubricant grease

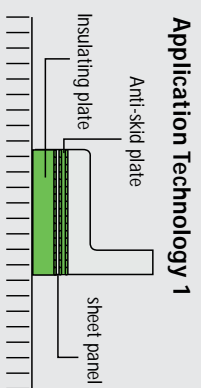
Group: synthetic lubricants
Polyalkylenglycols, ester of a carbonic acid, radiator antifreeze

Group: fuels and motor fuels
Petrol (gasoline), diesel, heating fuel, aviation gasoline, special motor fuels

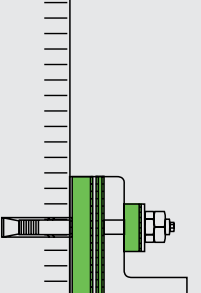
Group: hardly inflammable pressure liquids
Oil in water emulsions, water in oil emulsions, water polymeric solutions

Group: Mineral Oils
Cooling lubricants mixable with water, ATF (Automatic Transmission Fluid), cooling lubricants, water mixable anticorrosive oils, sliding belt oils, compressed air oils, lubricants, thermal oils, filter oils, rolling oils, gear lubricant oils for cars, brake fluids and mineral oil basis

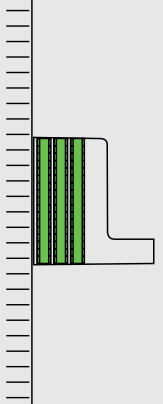
Group: purifiers
Chlorinated hydrocarbons, petroleum ether/benzine, cold purifiers
Group: purifiers (watery solutions)
Washing and Rinsing agents, wetting agents, dilute acids, dilute alkaline solutions, salt solutions



Application Technology 1



Application Technology 2



Application Technology 3

Machine mounting on BLIZ insulating plates for machines that don't require a high degree of mounting precision. Floor unevenness can be balanced out using sheet panels, etc. The plates are normally geometrically positioned. Size is determined on the basis of machine weight and available contact area.

Schematic illustration of floor anchorage using insulator plate and washer. In some cases, it is necessary to anchor the object to be insulated to the floor. The use of insulator washers prevents vibrations being transmitted via the screw connection. In particularly tricky cases, it is advisable to use adjusted disc springs. Size, etc. is determined by us.

Highly effective impact and vibration insulation using BLIZ insulator plate sets. When insulating pulsating forces (presses, hammers, feed presses), BLIZ plates are combined to from sets. This helps to achieve extremely low natural vibration frequencies. Their great advantage over steel springs in the very high attenuation capacity.

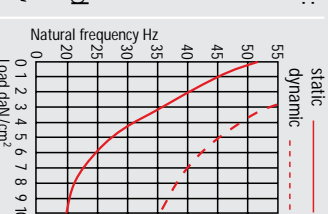
size of plates in mm	surface area in cm ²	size of plates in mm	surface area in cm ²	size of plates in mm	surface area in cm ²
1000 x 500	5000	150 x 150	225	50 Ø	20
500 x 500	2500	150 x 100	150	75 Ø	44
500 x 250	1250	150 x 75	112	110 Ø	95
250 x 250	625	100 x 100	100	130 Ø	133
200 x 200	400	100 x 50	50	150 Ø	176
200 x 100	200	75 x 75	56	200 Ø	314

Important Notice:
BLIZ Plates can be cut with any circular or band-saw. If requested we shall be pleased to supply you with special dimensions.



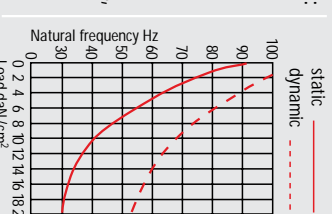
B4*

Type
Load daN/cm²
Thickness mm
Coefficient of friction η
Range of application:
Very universal.
Can be used for machine tools, plastic and printing machines.
Extremely well suited to machines with a tendency to "migrate"



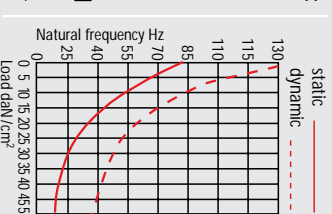
B0

Type
Load daN/cm²
Thickness mm
Coefficient of friction η
Range of application:
Without profile. Very high level constancy.
Particularly for machines with little rigidity such as: lathes, machining centers, transfer lines etc.



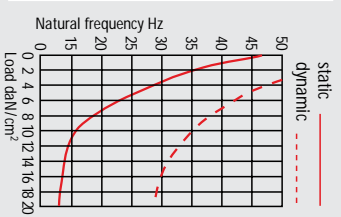
B6

Type
Load daN/cm²
Thickness mm
Coefficient of friction η
Range of application:
Insulating plate with extremely high loadability coupled with maximum level constancy.
E.g. for very heavy and long bedded machining centers, transfer lines etc.

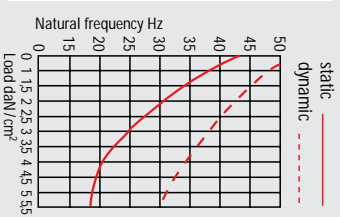




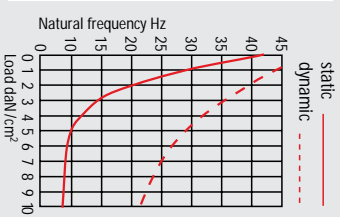
Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
B5	5-16	25	0,8	For machines with high dynamic disturbance properties and only a small support plate, e.g. presses, stamping presses, shears etc.



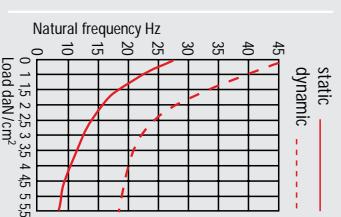
Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
B30	2-5	18	0,8	Soft kind without any profile. Specially suited for effective insulation of lighter presses, punching machines etc. on upper floors.



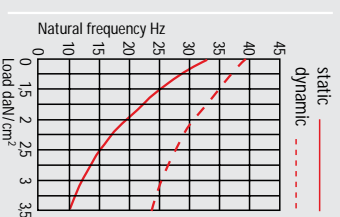
Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
B32	2-8	25	0,8	Soft kind similar to B30, but with higher load capability. For medium to big presses, punching presses etc. Very high insulation!



Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
B30 W*	0,5-4	18	0,8	Very soft kind for mainly passive insulation. High insulation effect due to low frequency tuning. E.g. for measuring and testing machines, scales, microscopes and grinders.



Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
B13 W	0,5-3,5	13	0,8	Special kind for highest insulation values, can be stacked up to 5 times. Tuning up to approx. 8 Hz. Recommended as so-called plate-set for foundation insulation.



Type	Load daN/cm ²	Thickness mm	Coefficient of friction η	Range of application:
BS	1-20	2	0,9	BLZ anti-skid and spacer plates. No vibration insulation!
BN	1-20	5	0,6	
BR-7*	2-10	7	0,8	

* Can be supplied also with profile on one side only! Designation e.g. B4 - 1.