

Levelling elements

Bilz levelling elements are used for vibration and structure-borne noise insulated machine installation. The maintenance-free machine feet guarantee the simple and precise levelling of machines and are available in many versatile designs. The sizes and insulation pads are selected according to the application and load. The range of levelling can be adapted depending on the selected bolt length and the individual requirements.



General information

- The type of insulation pads used can be found in the type description, e.g. BNSH 80/50 is equipped with B50, BNVS 50/30W with B30W etc.
- The specified maximum load is composed of static and dynamic loading of the machine. The best insulation effect is achieved at approximately 80-90 % of the specified maximum load.
- Details on the properties of the insulation pads used can be found on pages 14-17.
- Permissible temperature range: -20 °C bis +120 °C
- A table for selecting the available bolts can be found on pages 26-27. They are supplied complete with nuts and washers.
- Please contact us if the size, colour, insulation pad mounting, or bolts that you are looking for are not listed. In addition to our standard solutions and colours we also carry numerous special solutions. We are always happy to offer our advice.

Series BNSH / BNSHA

Round, without/with bolt-on floor attachment.

Application: Specifically developed for the mounting of injection moulding machines, presses, punches etc. Optimum load distribution due to our proven pressure plate design. Very high horizontal stability over the entire levelling range. The BNSHA elements with bolt-on floor plate are particularly suitable for all machines that tend to wander. The floor anchor is **not** used as a safeguard against tipping.

Insulation pad properties:

B50: Good insulating effect when the machine is installed on natural ground.

Very well suited for machines with highly dynamic forces.

B32: Very good insulation effect. Specifically developed for mounting on upper floors or insufficiently stable supporting surfaces.

Bolts: For the suitable levelling bolts see Table 2, p. 27.

Colour: RAL 7037, dusty grey

BNSH

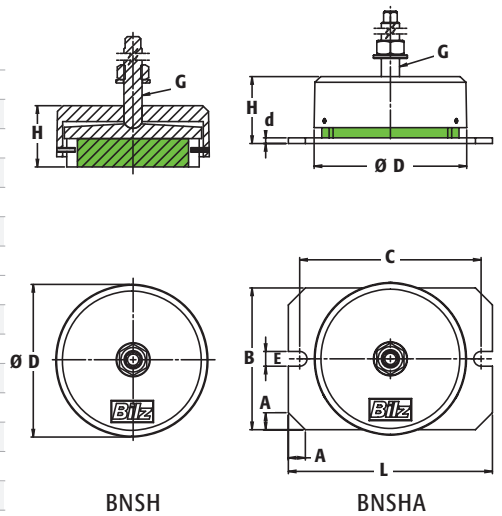


BNSHA



BNSH / BNSHA

Type	Item no.	Item no.	max. load	H	H	ØD	Adjustment	Thread	Pitch
BNSH / BNSHA	BNSH	BNSHA	N/pc..	BNSH	BNSHA	mm	range	G	
				mm	mm		mm		
70/0*	12-0042	12-0016	5.000	31	36	80	+6	M10	1.25
80/50	12-0047	12-0020	9.500	43	48	96	+18	M12	1.5
120/50	12-0024	12-0003	20.000	51	56	133	+18	M16	1.5
160/50	12-0028	12-0006	40.000	52	57	175	+17	M20	1.5
175/50	12-0032	12-0009	45.000	56	64	193	+17	M20	1.5
200/50	12-0036	12-0012	65.000	63	71	229	+16	M24	2.0
250/50	12-0040	12-0015	90.000	67	75	270	+15	M30	2.0
70/30*	12-0043	12-0017	1.800	34	39	80	+6	M10	1.25
80/32	12-0045	12-0018	4.800	43	48	96	+18	M12	1.5
120/32	12-0022	12-0001	9.600	51	56	133	+18	M16	1.5
160/32	12-0026	12-0004	17.000	52	57	175	+17	M20	1.5
175/32	12-0030	12-0007	20.800	56	64	193	+17	M20	1.5
200/32	12-0034	12-0010	29.000	63	71	229	+16	M24	2.0
250/32	12-0038	12-0013	41.000	67	75	270	+15	M30	2.0



* Special mounting

BNSHA DIMENSION BASE PLATE

Type	L	A	B	C	E	d
	mm	mm	mm	mm	mm	mm
BNSHA 70	125	15	75	105	8	5
BNSHA 80	140	15	90	120	8	5
BNSHA 120	180	15	125	160	13	5
BNSHA 160	220	15	170	200	16	5
BNSHA 175	260	20	185	230	20	8
BNSHA 200	300	20	225	270	20	8
BNSHA 250	330	20	265	300	20	8

Series **BNV / BNVS**

Square, without/with flexible levelling bolt

Application: Proven and very effective plate element, preferably for light to medium heavy machines with matching locating holes in the machine feet. The BNV/BNVS elements are used where a ridged joint is required between the machine and the fitting. Any unevenness or angular differences in the floor up to $\pm 3^\circ$ can be compensated for using the movable levelling bolt.

Insulation pad properties:

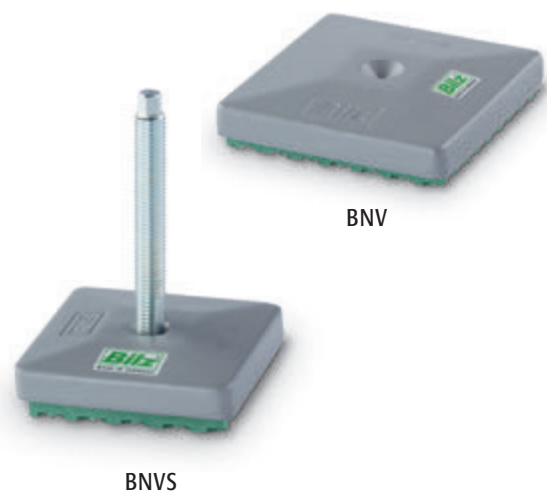
B4: Medium hard pad with good vibration and structure-born noise insulation. Universal application.

B0: Non profile insulation pad with very high levelling consistency, e.g. for lathes, machining centres etc.

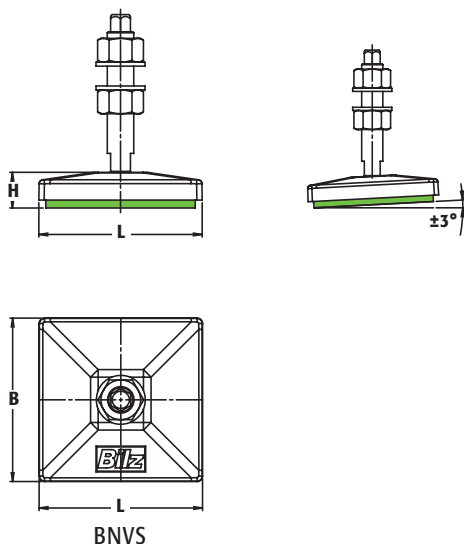
B30W: Soft matching for a very good insulation effect, e.g. for grinding machines, test equipment, measuring machines, etc.

Bolts: For the suitable levelling bolts see Table 1, p. 26

Colour: RAL 7037, dusty grey



BNV / BNVS (SQUARE)



Type BNV /	Item no.	Item no.	max. load	L	W	H
BNVS	BNV	BNVS	N/pc	mm	mm	mm
50/4	08-0030	10-0013	2.000	60	60	22
80/4	08-0034	10-0023	4.700	85	85	24
110/4	08-0004	10-0004	12.000	123	123	28
115/4	08-0008	10-0026	11.400	163	88	29
150/4	08-0016	10-0009	18.000	147	147	32
200/4	08-0020	10-0025	37.000	264	165	35
50/0	08-0028	10-0011	4.000	60	60	22
80/0	08-0032	10-0021	9.500	85	85	24
110/0	08-0002	10-0002	24.000	123	123	28
115/0	08-0006	10-0027	22.800	163	88	29
150/0	08-0014	10-0007	36.000	147	147	32
200/0	08-0018	10-0028	74.000	264	165	35
50/30W	08-0029	10-0012	950	60	60	25
80/30W	08-0033	10-0022	2.300	85	85	27
110/30W	08-0003	10-0003	5.000	123	123	31
115/30W	08-0007	10-0029	4.500	163	88	32
150/30W	08-0015	10-0008	7.300	147	147	35
200/30W	08-0019	10-0030	15.000	264	165	38



Series **BNR/BNRS**

Round, without/with flexible levelling bolt

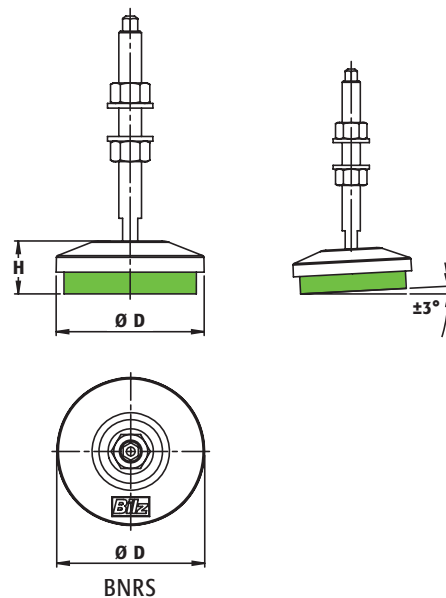
Application, Properties and bolts:

See type BNV/BNVS



BNR / BNRS (ROUND)

Type BNR / Item no.	Item no.	max. load	Ø D	H	
BNRS	BNR	BNRS	N/pc.	mm	
50/4	09-0035	11-0014	1.700	60	21
70/4	09-0048	11-0019	3.600	79	29
80/4	09-0045	11-0023	4.200	85	23
110/4	09-0006	11-0004	9.100	120	33
150/4	09-0016	11-0009	17.000	162	29
200/4	09-0025	11-0026	31.000	213	32
50/0	09-0033	11-0012	3.400	60	21
70/0	09-0049	11-0017	7.200	79	29
80/0	09-0042	11-0024	8.400	85	23
110/0	09-0002	11-0002	18.200	120	33
150/0	09-0012	11-0007	34.000	162	29
200/0	09-0021	11-0027	62.000	213	32
50/30W	09-0034	11-0013	700	60	24
70/30W	09-0050	11-0018	1.400	79	32
80/30W	09-0043	11-0025	1.600	85	26
110/30W	09-0003	11-0003	3.500	120	36
150/30W	09-0013	11-0008	6.900	162	32
200/30W	09-0022	11-0028	12.000	213	35



Series **BNRV/BNRSV** stainless-steel design

Round, stainless-steel design, without/with flexible levelling bolt

Application: Food, luxury food, packaging, chemical and pharmaceutical industries as well as clean room applications.

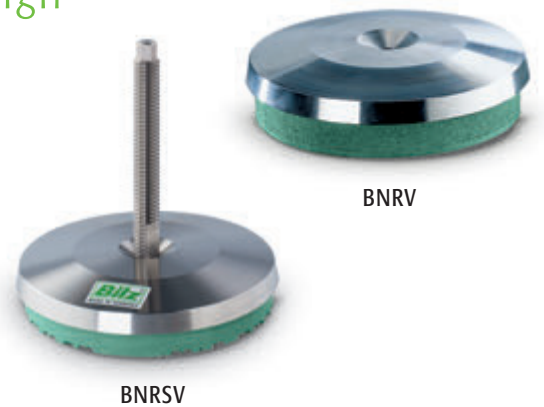
Insulation pad properties:

B4: Medium hard pad with good vibration and structure-born noise insulation. Universal application.

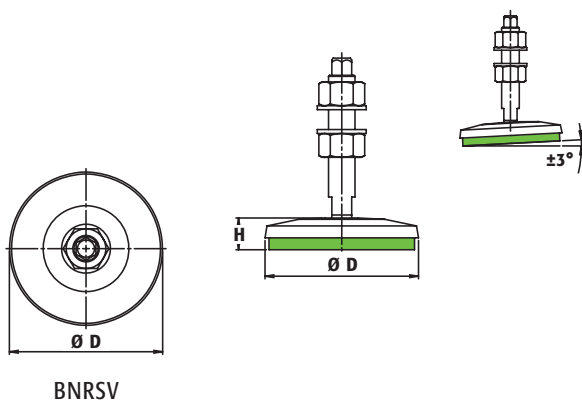
B30W: Soft matching for a very good insulation effect, e.g. for grinding machines, test equipment, measuring machines, etc.

BR7: Anti-slip plate without vibration insulation.

Bolts: For suitable levelling bolts with standard thread see Table 1, p. 26.



BNRV / BNRSV



Type BNR /	Item n0.	max. load	$\varnothing D$	H	
BNRSV	BNRV	N/pc.	mm	mm	
50/4	30-0031	30-0014	1.700	54	24
70/4	30-0035	30-0018	3.600	76	25
110/4	30-0023	30-0007	9.100	116	27.5
150/4	30-0027	30-0011	17.000	156	29.5
50/30W	30-0030	30-0013	700	54	27
70/30W	30-0034	30-0017	1.400	76	28
110/30W	30-0022	30-0006	3.500	116	30.5
150/30W	30-0026	30-0010	6.900	156	32.5
50/BR7	30-0032	30-0016	2.800	54	16
70/BR7	30-0036	30-0020	5.800	76	17
110/BR7	30-0024	30-0009	14.500	116	19.5
150/BR7	30-0028	30-0012	27.500	156	21.5

Series **BFE** stainless-steel design

Round, stainless-steel design, with flexible levelling bolt

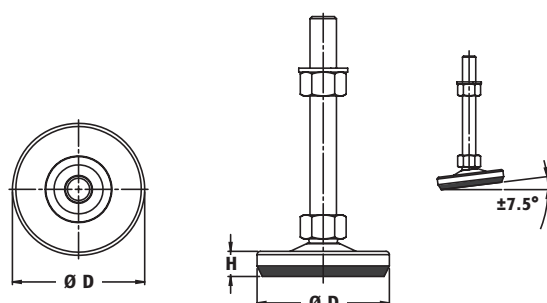
Application: Cost-effective stainless steel design with adequate vibration insulation for the food, luxury food, packaging, chemical and pharmaceutical industries.

Bolts: For suitable levelling bolts with standard thread see Table 3, p. 27.

Note: These elements are also available in an electrically conducting design on request.



BFE



Type	Item no.	max. load	$\varnothing D$	H
BFE	BFE	N/pc.	mm	mm
50	30-0003	3.000	50	14
80	30-0004	8.500	80	17
100	30-0001	20.000	100	19
125	30-0002	30.000	125	19

Series GMA and BNL



GMA (bolt-on rubber-metal element)

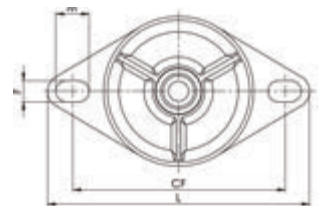
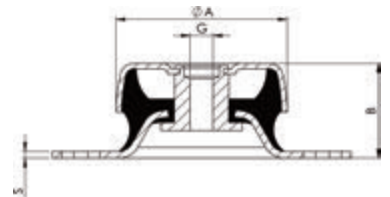
The bolt-on Bilz rubber-metal element offers an effective and robust vibration and structure-borne noise insulation for machines and systems, specifically for use in outside areas. The universally usable elements are made from high-quality EPDM and galvanised steel.

They offer a very stable machine mount with constant elastic properties from both forces acting in the horizontal plane and pressure or tensile forces acting in the vertical plane.

Natural frequency: approx. 25 Hz

Application: Stationary and movable use of machines, devices and aggregates, such as motors, machine tools, timber processing machines, sieves, rolling mills, pumps, compressors, air conditioning and ventilation systems.

Bolts: These elements are supplied without bolts.



Type	Item no.	ØA	B	F	M	CF	L	S	max. pressure load.	max. deflection	Thread
GMA		mm	mm	mm	mm	mm	mm	mm	N/pc.	mm	G
63	13-0003	63	30	9	14	89	110	2.5	2.400	2.0	M8
78	13-0004	78	30	9	12	110	135	3.0	2.670	2.3	M10
92	13-0005	92	35	10	15	123.5	150	3.0	3.150	3.5	M10
106	13-0006	106	38	13	19	143	175	4.0	4.500	3.0	M12
125	13-0007	125	43	14.5	20	156	192	4.0	7.400	4.0	M16
150	13-0008	150	50	14	18	182	218	4.0	13.200	6.0	M16

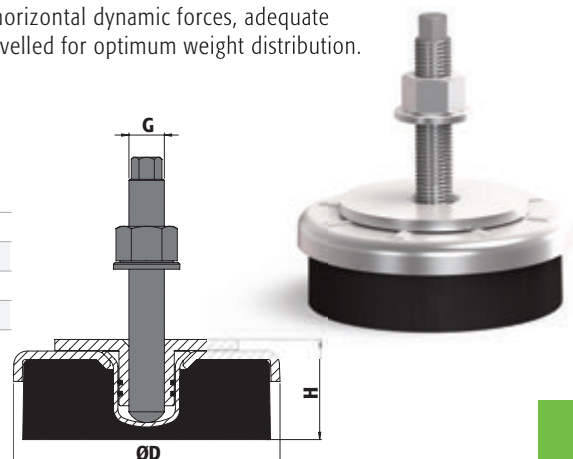
BNL (round, steel with levelling bolt)

Application: Cost-effective levelling element for machines with high vertical and horizontal dynamic forces, adequate vibration and structure-borne noise insulation, pressure plate that can be precisely levelled for optimum weight distribution.

The rubber element is resistant to commercial acids, alkalis and lubricating oils.

Bolts: Appropriate levelling bolt each with a nut and washer included.

Type	Item no.	max. load	ØD	H	Adjustment	G	Length
BNL	BNL	N/pc.	mm	mm	range		mm
80	14-0001	5.000	80	39	+11	M12 x 1.25	120
120	14-0002	11.000	120	47	+12	M16 x 1.5	120
160	14-0003	26.000	160	54	+12	M20 x 1.5	170
200	14-0004	40.000	200	58	+12	M20 x 1.5	170



Levelling and fixing bolts

A large range of different bolts are available for each type of levelling element. The appropriate bolt in each case can be found in the following tables.

TABLE 1 BOLTS FOR LEVELLING ELEMENT TYPE BNRS, BNVS AND BNRSV

Thread	Material		Length in mm						
			70	100	125	150	200	250	300
M10	galvanised	2 x nut/washer	19-0025	19-0020					
	stainless steel	2 x nut/washer	18-0012	18-0006					
M12	galvanised	2 x nut/washer		19-0042	19-0045	19-0048			
	stainless steel	2 x nut/washer		18-0017	18-0068	18-0020			
M16	galvanised	2 x nut/washer		19-0086	19-0092	19-0095	19-0099	19-0102	
	stainless steel	2 x nut/washer		18-0031	18-0061	18-0034	18-0037	18-0056	
M18	galvanised	2 x nut/washer		19-0131	19-0134	19-0137	19-0140	19-0143	
M20	galvanised	2 x nut/washer		19-0179	19-0183	19-0186	19-0189	19-0192	
	stainless steel	2 x nut/washer		18-0042	18-0063	18-0045	18-0048		
M24	galvanised	2 x nut/washer				19-0215	19-0224	19-0227	19-0230
	stainless steel	2 x nut/washer				18-0053	18-0064	18-0065	

Thread assignment for levelling element sizes

	50	70	80	110	150	200	
BNRS							
M10	■						
M12	■	■	■				
M16		■	■	■	■		
M18			■	■	■	■	
M20				■	■	■	
M24					■	■	
BNVS	50		80	110	115	150	200
M10	■						
M12	■		■	■			
M16			■	■	■	■	
M18				■	■	■	■
M20					■	■	■
M24						■	■
BNRSV	50	70		110	150		
M10	■						
M12	■	■		■			
M16		■		■	■		
M18				■	■		
M20					■		
M24					■		

All bolts are supplied with standard threads.

The selection of the type of bolt is made depending on the static and dynamic loading in the particular application. We would be happy to help you in the selection.

TABLE 2 BOLTS FOR LEVELLING ELEMENT TYPE BNSH AND BNSHA

Thread	Material	Pitch	Length in mm				
			80	100	125	150	200
M10	galvanised	1.25		19-0283	19-0284		
M12	galvanised	1.5	19-0039	19-0032	19-0034	19-0036	
M16	galvanised	1.5		19-0079		19-0081	19-0083
M20	galvanised	1.5		19-0156	19-0162	19-0167	19-0172
M24	galvanised	2.0				19-0219	19-0221
M30	galvanised	2.0				19-0242	19-0245

These galvanised bolts are included and are each supplied with 1 nut and washer. Please state the desired length.

TABLE 3 BOLTS FOR LEVELLING ELEMENT TYPE BFE

Thread	Material	Length in mm								
		50	80	100	120	150	180	200	250	300
M8	stainless steel	■	■	■	■	■	■	■		
M10	stainless steel	■	■	■	■	■	■	■		
M12	stainless steel	■	■	■	■	■	■	■		
M16	stainless steel	■	■	■	■	■	■	■	■	■
M20	stainless steel	■	■	■	■	■	■	■	■	■
M24	stainless steel	■	■	■	■	■	■	■	■	■
M30	stainless steel	■	■	■	■	■	■	■	■	■

All bolts are supplied in stainless steel each with 2 nuts and washers. They come with a standard thread and are suitable for all sizes of element.

Note: Do you need a type of bolt that is not listed in the table? Then please contact us. We are happy to offer a wide selection of special bolts in terms of size, thread, material, quality, etc.

