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SELECTION & APPLICATIONS GUIDES

 | **HUTCHINSON®**
PAULSTRA

SELECTION GUIDE OF

	AXIAL FLEXIBILITY	AXIAL & RADIAL FLEXIBILITY + ANTI-REBOUND				AXIAL FLEXIBILITY
Product range →	V4* (p229) VIBSOL (p218) PDM-1000 (p229) PDM-2000 (p229) SP55*W (p230) SP56*W (p230) V120 & V125 (p235)	V118-DG (p233) V118-MG (p233) V318 (p233) V318-D (p233) V1H5023 (p243) V1H5025 (p243) V402-MG (p239)	V164 (p237) V168 (p237)	V1H751 (p241) V1H752 (p241)	V1H-6000 (p245) V1H-6100 (p245)	SP539-*** (p231)
Nominal static load in daN						
5	Natural frequency = 10 to 25 Hz	Natural frequency = 11 to 25 Hz	Natural frequency = 8 to 22 Hz	Natural frequency = 15 to 25 Hz	Natural frequency = 12 to 18 Hz	Natural frequency = 10 to 16 Hz
10						
20						
30						
50						
70						
100						
200						
300						
400						
500						
600						
700						
800						
900						
1 000						
2 000						
3 000						
4 000						
5 000						
6 000						
7 000						
8 000						
15 000						
140 000						
280 000						

Warning :








At least two parameters are necessary to select a mounting system: the load to be supported and the excitation frequency or running speed of the equipment to be isolated. This frequency or speed needs to have the correct relationship with the natural frequency of the mounting system (see graph on page 7).

If this relationship is ignored there is a risk that the vibration will be amplified.

* = replaces a figure which can be of different values.



MOUNTING SYSTEMS

AXIAL & RADIAL FLEXIBILITY		AXIAL & RADIAL FLEXIBILITY + ANTI-REBOUND		AXIAL FLEXIBILITY	MULTIAXIAL FLEXIBILITY	Product range
VIBRAFLOT (p264)	V1B1114-15-16 (p247) V1B1134-35-36 (p247) MV801-MV803 (p259) V1209-V1210 (p261-262)	MV70 (p252) MV71 (p252) MV72 (p252) MV73 (p252)	7002 (p250)	VE101 (p254) VE111 (p254) VE112 (p254) VE113 (p254) V1N30* (p260)	VIBCABLE (p256)	
				 		Nominal static load in daN
Natural frequency = 3 to 6 Hz	Natural frequency = 1,5 to 9 Hz	Natural frequency = 15 to 25 Hz	Natural frequency = 5 to 10 Hz	Natural frequency = 3,5 to 6 Hz	Natural frequency = 7 to 25 Hz	5 10 20 30 50 70 100 200 300 400 500 600 700 800 900 1 000 2 000 3 000 4 000 5 000 6 000 7 000 8 000 15 000 140 000 280 000

Note: Natural frequencies are given in axial.



APPLICATIONS GUIDE TO

	AXIAL FLEXIBILITY		AXIAL & RADIAL FLEXIBILITY + ANTI-REBOUND			
Product range →	Metal cushions (p214) & V1B5984 (p263)	V4* (p227) VIBSOL (p218) PDM-1000 (p229) PDM-2000 (p229) SP55*W (p230) SP56*W (p230) V120 & V125 (p235)	V118-DG (p233) V118-MG (p233) V318 (p233) V318-D (p233) V402MG (p239)	V164 (p237) V168 (p237)	V1H-6000 (p245) V1H-6100 (p245)	V1H751 (p241) V1H752 (p241)
APPLICATIONS						
ELECTRICAL ENCLOSURES						
LIFTS AND ELEVATORS						
CRUSHERS						
VEHICLE CABS						
AIR CONDITIONING						
SIEVES						
GENERATOR SETS						
MACHINE TOOLS						
SHIPBORNE EQUIPMENT						
LABORATORY EQUIPMENT						
IC ENGINES						
COMPRESSORS						
PUMPS						
GEARBOXES						
MATCH FONTS for all applications						
CIVIL ENGINEERING						
CEILINGS, PIPEWORK						
GANTRIES						
GUILLOTINES						
SCREENS						
TRANSFORMERS						
HOPPERS						
PIPEWORK						
FLOATING FLOORS						
ELECTRONIC EQUIPMENT						

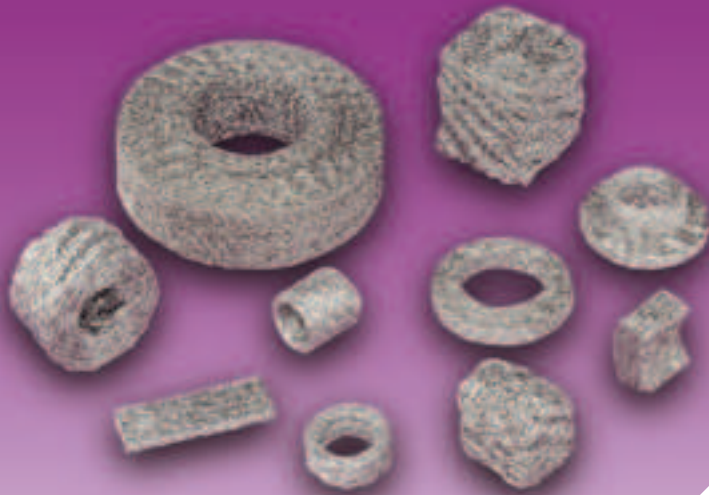
For mobile installation: V118, V318, V402, V1H751 or 752, V1H-6000 or 6100, 7002, VIBCABLE.

* = replaces a figure which can be of different values.



VIBRACHOC METAL RANGE

AXIAL FLEXIBILITY	AXIAL & RADIAL FLEXIBILITY		AXIAL & RADIAL FLEXIBILITY+ ANTI-REBOUND	AXIAL FLEXIBILITY	MULTIAXIAL FLEXIBILITY	
SP539-*** (p231)	VIBRAFLOT (p264)	V1B114 (p247) V1B15 (p247) V1B16 (p247) V1B1134 (p247) V1B35 (p247) V1B36 (p247) V1209 (p261) V1210 (p262) MV801 (p259) MV803 (p259)	7002 (p250) MV70 (p252) MV71 (p252) MV72 (p252) MV73 (p252)	VE101 (p254) VE111 (p254) VE112 (p254) VE113 (p254) V1N30* (p260)	VIBCABLE (p256)	Product range ←
						APPLICATIONS
						ELECTRICAL ENCLOSURES
						LIFTS AND ELEVATORS
						CRUSHERS
						VEHICLE CABS
						AIR CONDITIONING
						SIEVES
						GENERATOR SETS
						MACHINE TOOLS
						SHIPBORNE EQUIPMENT
						LABORATORY EQUIPMENT
						IC ENGINES
						COMPRESSORS
						PUMPS
						GEARBOXES
						MATCH FONTS for all applications
						CIVIL ENGINEERING
						CEILINGS, PIPEWORK
						GANTRIES
						GUILLOTINES
						SCREENS
						TRANSFORMERS
						HOPPERS
						PIPEWORK
						FLOATING FLOORS
						ELECTRONIC EQUIPMENT



METALLIC CUSHIONS

Natural frequency : (1)
12 to 25 Hz

DESCRIPTION

Metallic cushions are made from drawn, woven stainless steel wire that is compressed into a geometric shape.

The Vibrachoc range has more than 1000 standard metallic cushions of various sizes and characteristics.

As metallic cushions are easy to create, custom shapes and characteristics can be developed and produced on request.

APPLICATIONS

Standard or custom metallic cushions can be used for many industrial applications because they are naturally resistant to grease, oil, water, etc and withstand temperatures from - 70°C to + 300°C.

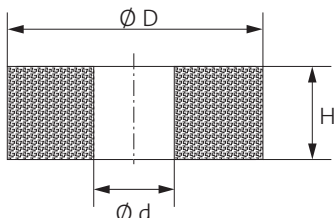
The static stiffness of the metallic cushion ensures progressive stiffening and maintains a constant natural frequency for a very wide range of loads within a small space.

Their natural frequency of between 12 and 25 Hz and damping of 15 to 20% make them suitable for mounting rotating machines with a rotation speed over 2000 rpm.

(1) Natural frequencies with max/min loads, see : OPERATINGS

DIMENSIONS

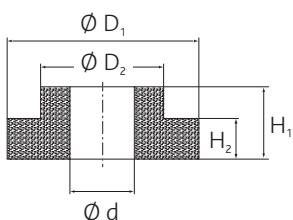
SIMPLE CYLINDRICAL SHAPE



For cushions with alternative dimensions and load ranges, please consult us.

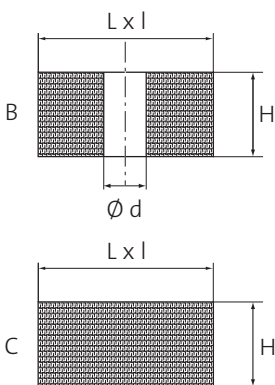
Reference	Ø Ext. D (mm)	Ø Int. d (mm)	Height H (mm)	Load range (daN)	Dynam. force (daN)	Natural frequency (Hz)
VI168-B	53	16,5	14	20 to 250	1 250	15 to 22
V3CNVJ653-A02	33	14	19	75 to 300	900	15 to 22
CH440-A02	72	50	21	50 to 350	1 000	15 to 20
VI771-A02	40	15	20	150 to 550	1 700	15 to 20
MC345-A02	72	34	21	300 to 1 300	5 000	15 to 20
CH281-A02	119	34	21,5	700 to 2 700	12 500	15 to 20
CH283-A02	159	70	21,5	250 to 7 000	22 500	15 to 20
VI996-A02	203	121	21	250 to 7 000	22 500	15 to 20
CH438-A02	72	51	10	50 to 350	1 000	20 to 25
CH265-A02	70	34	10,5	300 to 1 300	5 000	20 to 25
CH264-A02	116	36	11	700 to 2 700	8 000	20 to 25
VI771-B02	40	15	11,5	750 to 3 000	9 000	20 to 25
CH472-A02	156	72	10,5	2 000 to 7 000	21 000	20 to 25

CYLINDRICAL SHOULDERED SHAPE



Reference	Ø D1 (mm)	Ø D2 (mm)	Ø int. d (mm)	H1 (mm)	H2 (mm)	Load range (daN)	Dynam. force (daN)	Natural frequency (Hz)
VJ148-A05	72	48	33	25	21	50 to 350	1 050	15 to 20
V3CNCH682-A05	69,5	52	34	30	23,5	50 to 300	900	15 to 20
V3CNVJ044-A05	52,6	26,5	16	21,5	14	25 to 200	600	15 to 22
V3CNVJ102-A05	49	27,5	18	30	24,5	20 to 100	300	15 to 20
VJ164-A05	34,5	20,5	12,5	14	10	15 to 100	300	20 to 25

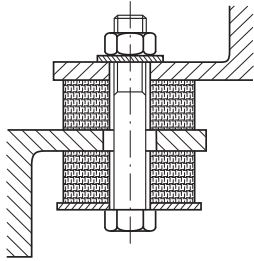
RECTANGULAR SHAPE



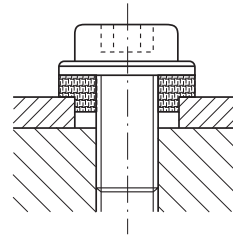
Reference	Forme	Dim. L x l (mm)	Ø int. d (mm)	H (mm)	Load range (daN)	Dynam. force (daN)	Natural frequency (Hz)
VI786-A06 *	B	53 x 49	8	25	30 to 200	800	12 to 18
VI830-B06	C	28 x 28	-	15	50 to 300	1 000	17 to 22
VI700-A06 *	C	50 x 47	-	25	75 to 400	1 200	12 to 18
VI700-B06 *	C	50 x 47	-	16	75 to 400	1 600	17 to 22
CH422-A06	C	45 x 36	-	16	400 to 1 500	5 000	20 to 25
V3CNVJ 034-A06	B	100 x 100	20	34	2 000 to 7 000	20 000	12 to 18
VJ149-A06	B	28 x 28	10,5	10	25 to 150	450	20 to 25
V3CNVJ006-A06	B	157 x 157	30	25	500 to 5 000	15 000	13 to 18

*: References detailed on following pages.

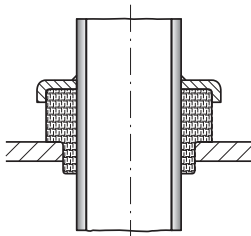
ASSEMBLY EXAMPLES



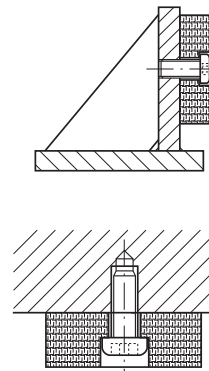
Suspension of gearboxes, motors, fans, pumps,
axial load only.
A gap is necessary around the fixing screw.



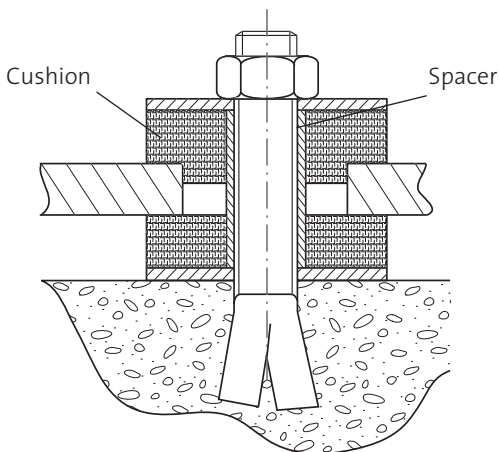
Absorbs expansion and isolates screws under
dynamic load.



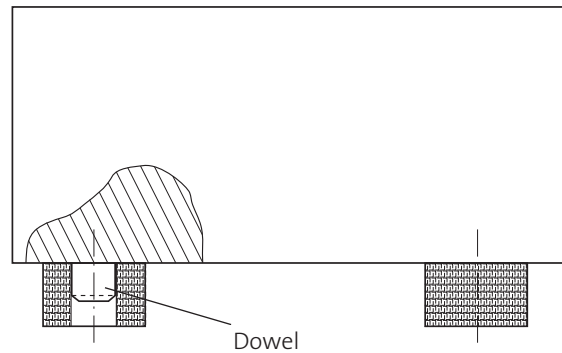
Pipe isolation.



Suspension of motors, fans, etc.



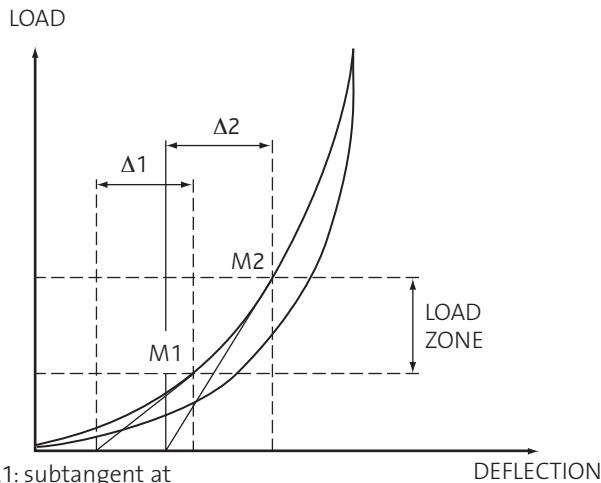
Scheme showing a cushion mounting
with uplift snubber.



Machine mounted on cushions located on dowels.

OPERATING CHARACTERISTICS

TYPICAL STIFFNESS CURVE FOR A METALLIC CUSHION



$\Delta 1$: subtangent at minimum load $M1$.
 $\Delta 2$: subtangent at maximum load $M2$.
 $\Delta 1 = \Delta 2$

Natural frequency of the mounting remains constant in the load zone.

The elastic limit of the metallic cushion under compression is 3 to 5 times greater than the maximum static load shown in the data sheets.

1 - Excellent resistance to oil, grease, solvents, water, dust, chemical agents.

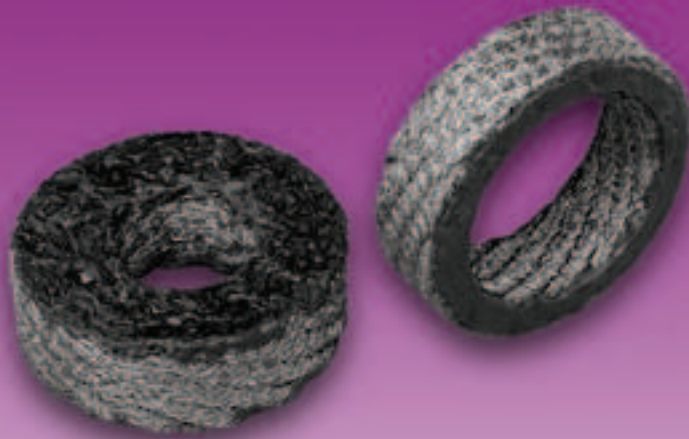
2 - Withstands temperatures from -70°C to $+300^{\circ}\text{C}$ and in certain applications -150°C to $+400^{\circ}\text{C}$.

3 - Highly resistant to ageing : characteristics are stable.

4 - High damping from 15 to 20%, i.e. $\tan. \delta$ from 0.3 to 0.4 corresponding to an amplification factor at resonance < 4 .

5 - Loading up to 150 kg/cm^2 under compression and 500 kg/cm^2 for isolating shocks.

6 - Natural frequency between 15 and 25 Hz.



VIBSOL®

Natural frequency : (1)
15 to 30 Hz

DESCRIPTION

The VIBSOL mount is made of a round metal cushion covered with an anti-slip elastomer pad on both side.

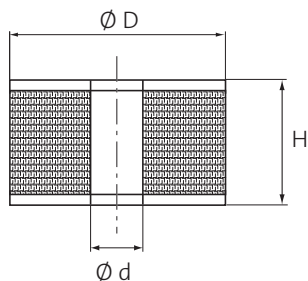
- It is available in two versions :
 - a standard version with a natural frequency of 22 to 30 Hz (machine tools).
 - a thick version (W) with lower stiffness and a natural frequency of 15 to 22 Hz (metal forming machines).

APPLICATIONS

- The VIBSOL mount is a simple and quick solution for machine tools offering a good shock absorption, and easy to install by sliding it under the base of the machine.
- Unaffected by oils, cutting fluids, detergents, high and low temperatures with good resistance to fatigue.
- It offers good stability for the suspended machine.
- A constant natural frequency over a wide load range makes mount selection easy.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

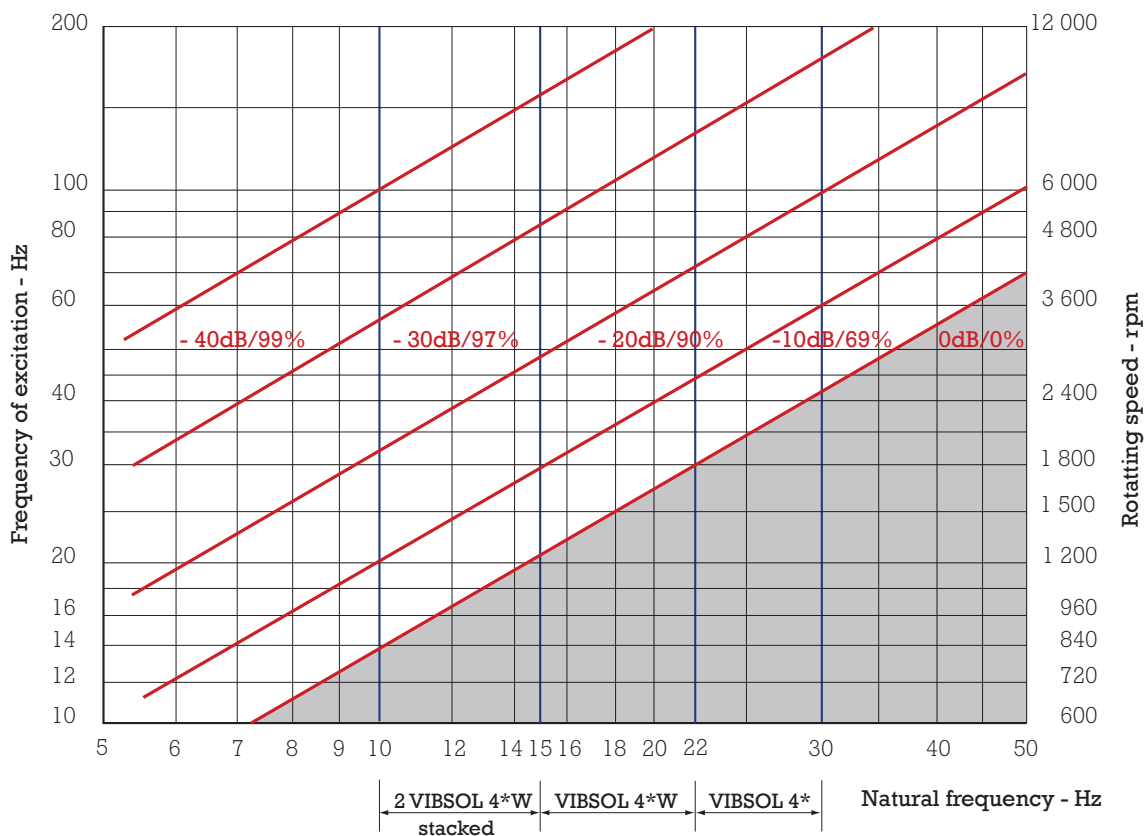


Type	Part number	Ø D (mm)	Ø d (mm)	Height H (mm)	Load range (daN)	Natural frequency (Hz)
VIBSOL 43	V6080F43	72	51	12	50 à 350	22 à 30
VIBSOL 43W	V6080F43W	72	50	23	50 à 350	15 à 22
VIBSOL 44	V6080F44	70	34	13	300 à 1 300	22 à 30
VIBSOL 44W	V6080F44W	70	34	23	300 à 1 300	15 à 22
VIBSOL 45	V6080F45	116	36	13	700 à 2 700	22 à 30
VIBSOL 45W	V6080F45W	116	34	24	700 à 2 700	15 à 22
VIBSOL 46	V6080F46	156	72	14	2 000 à 5 000	22 à 30
VIBSOL 46W	V6080F46W	156	70	24	2 000 à 5 000	15 à 22

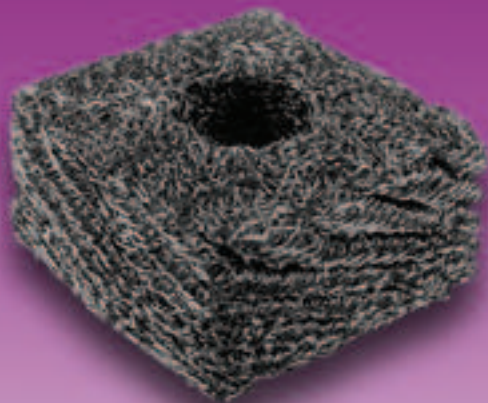
The part numbers referenced are kept in stock, see current price list for availability of items.

OPERATING CHARACTERISTICS

VIBRATION ATTENUATION



VIBSOL mountings



VI786 - A06

VI700 - A06

VI700 - B06

Natural frequency : (1)
15 to 20 Hz

DESCRIPTION

This suspension system consists of rectangular cushions made of woven compressed stainless steel wire. The VI786 have a $\varnothing 9$ bored screw hole, so that they can be mounted in collars with the diameters required by the user.

APPLICATIONS

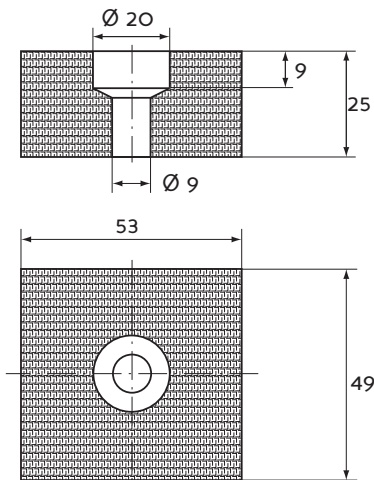
This suspension system is particularly suitable for mounting exhaust pipes from generator sets on board ship or permanently mounted in buildings. They are unaffected by aggressive chemicals, oil, grease and corrosion and withstand extreme temperatures from -70°C to $+300^{\circ}\text{C}$.

The natural frequency of between 15 and 20 Hz enables the pipes to be mounted independently of the support and thus reduces noise levels and allows the pipes to expand freely.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

VI786 - A06

DIMENSIONS



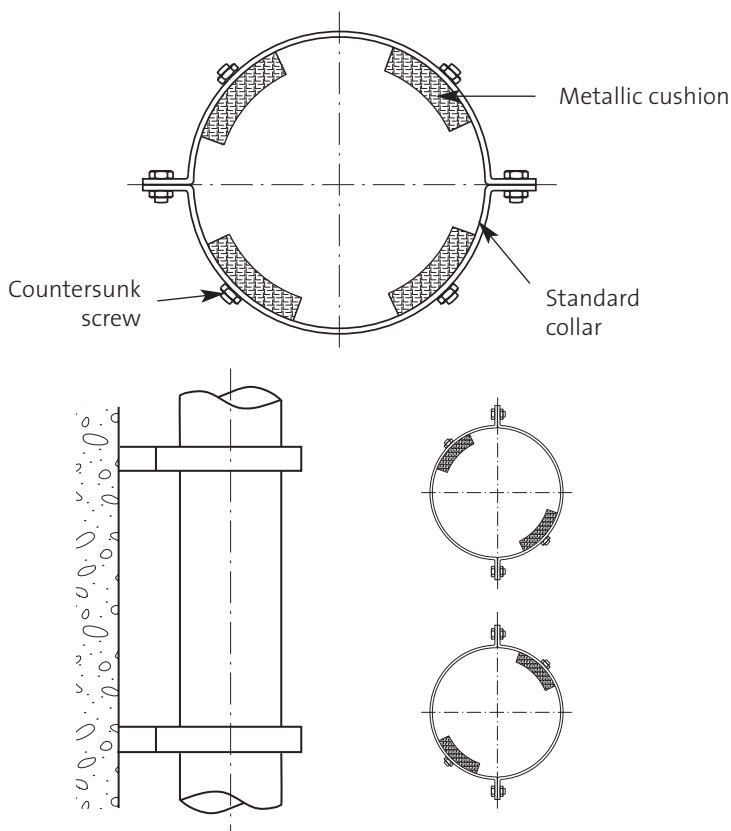
Assembly :

Countersunk screws can be used to mount the cushions inside the collar.

The number of cushions used should be a multiple of 4, depending on the diameter of the pipework: see table below.

However, for small diameter pipes, 2 collars can be used edge to edge, each having 2 pads at opposite diagonals.

OPERATING CHARACTERISTICS



Ø of the pipe (mm)	Number of cushions
75 - 175	4
175 - 425	8
425 - 550	12
550 - 700	16
700 - 850	20
850 - 1000	24
1000 - 1150	32
1150 - 1300	36
1300 - 1450	40
1450 - 1600	44
1600 - 1750	48

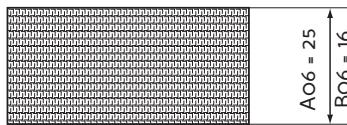
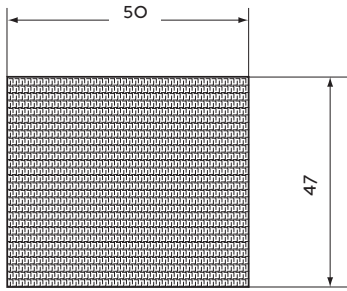
Max. dynamic force in compression : 800 daN.

Static load range from 30 to 200 daN.

Collars and screws not supplied.

VI700 - A06 - VI700 - B06

DIMENSIONS



Assembly :

Our wide range of mounts can meet many requirements. These mounts should be used as shown in the following diagram (two half collars, in which the cushions are placed side by side, are connected to the structure).

Note : the cushions may be mounted in two orientations : the height H is shown on the table. Refer to the drawing to ensure that the height H is correct when mounted.

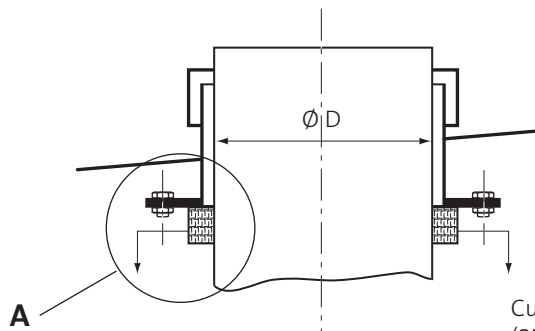
Choice :

The cushions are 16 mm or 26 mm thick. We advise using VI700-B06 pads (16 mm thick) for Ø D pipes < 270 and VI700-A06 (25 mm thick) for Ø D pipes > 270.

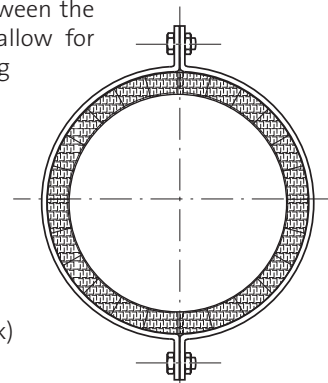
For example :

- for Ø D ext 140 pipe : use 9 VI700-b06 cushions;
- for Ø D ext 1000 pipe : use 61 VI700-A06 cushions.

OPERATING CHARACTERISTICS

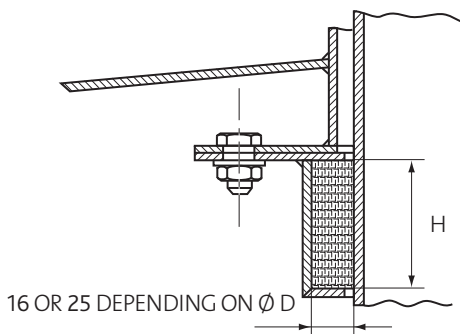


Use spacers between the half collars to allow for future tightening



Cushions VI700-A06 (25 mm thick) or VI700-B06 (16 mm thick)

DETAIL A



16 OR 25 DEPENDING ON Ø D

Pipe Ø D (mm)	H (mm)	Number of cushions
75 to 85	50	5
80 to 90	47	5
90 to 100	50	6
95 to 105	47	6
105 to 120	50	7
120 to 135	50	8
135 to 150	50	9
150 to 170	50	10
165 to 185	50	11
180 to 200	50	12
195 to 220	50	13
210 to 240	50	14
240 to 270	47	15
270 to 305	47	17
300 to 340	50	20

Pipe Ø D (mm)	H (mm)	Number of cushions
335 to 380	47	21
360 to 410	50	24
400 to 450	50	27
445 to 500	47	28
500 to 560	47	31
560 to 630	47	35
620 to 700	47	39
700 to 790	47	44
780 to 880	47	49
875 to 985	47	55
975 to 1 100	47	61
1 100 to 1 240	47	69
1 230 to 1 385	47	77
1 370 to 1 550	47	86
1 530 to 1 725	47	96

Maximum dynamic force in compression: VI700-A06 = 1200 daN
VI700-B06 = 1600 daN

Static load range from 75 to 400 daN



METALLIC CUSHIONS FOR PIPEWORK

Natural frequency : (1)
depending on load

DESCRIPTION

The metal cushions for pipework are made from stainless steel wire that is work hardened, knitted, crimped and compressed to a given shape in a press.
The cushion can be supplied on its own or in a mounting kit which comprises two cushions, two spacers, a retaining zinc plated steel clamp.

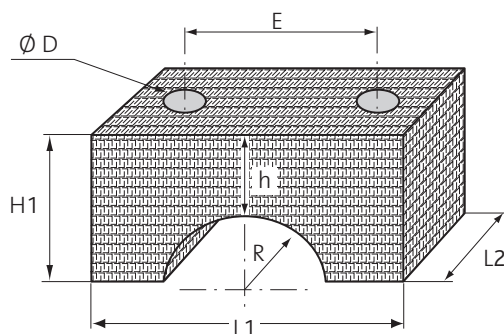
APPLICATIONS

The cushions are resistant to temperatures from - 70°C to + 300°C and are used to clamp and isolate pipes against vibration.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

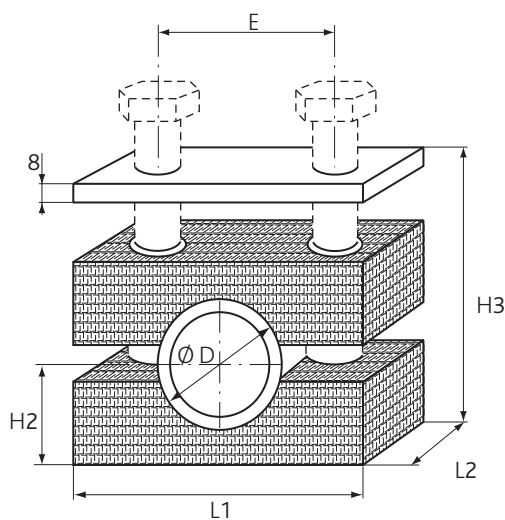
CUSHION ONLY



Reference for cushion only	R (mm)	L1 (mm)	L2 (mm)	H1 (mm)	h (mm)	Ø D (mm)	E (mm)
000 51 430	5,10	60	30	15	12	7	40
000 51 431	6,75	60	30	15	12	7	40
000 51 432	8,60	70	30	20	16	7	50
000 51 433	10,65	70	30	20	14	7	50
000 51 423	16,50	87	31	30	20	9	65
000 51 422	24,00	88	32	30	15	9	65
V3CNVJ123-A06	20,00	115	35	35	15	13,5	85
V3CNVJ122-A06	25,00	115	35	35	15	13,5	85
V3CNVJ121-A06	30,00	115	35	35	15	13,5	85

Dimensions are for unloaded cushions.

CUSHION KIT (Screws not supplied)



Kit reference	Ø D (mm)	L1 (mm)	L2 (mm)	H2 (mm)	H3 (mm)	E (mm)
V6056K01	40	115	35	32,5	73	85
V6057K01	50	115	35	37,5	83	85
V6058K01	60	115	35	42,5	93	85

Dimensions are for loaded cushions.



V43 V44
V45 V46

Natural frequencies : (1)
V4* = 22 to 30 Hz
V4*W = 15 to 22 Hz

See also **PAULSTRA**
elastomer range:
Nivofix - Minifix

DESCRIPTION

Standard V43, V44, V45 and V46 mounts have a cast steel base and a resilient element made from a stainless steel wire cushion.

The version H includes a cup and a levelling stud. It can also be equipped with grip pads.

Version W differs from the standard version as it has a thicker cushion for greater flexibility

APPLICATIONS

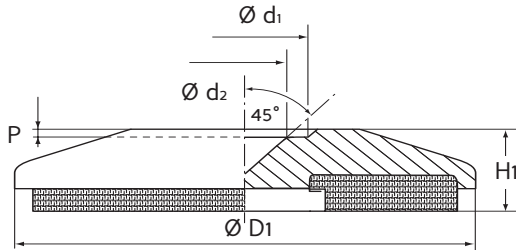
This range with a natural frequency of 15 to 30 Hz can be used for mounting machine tools in harsh industrial environments.

They are unaffected by oil, temperature and fatigue and their life time is often the same as that of the machine.

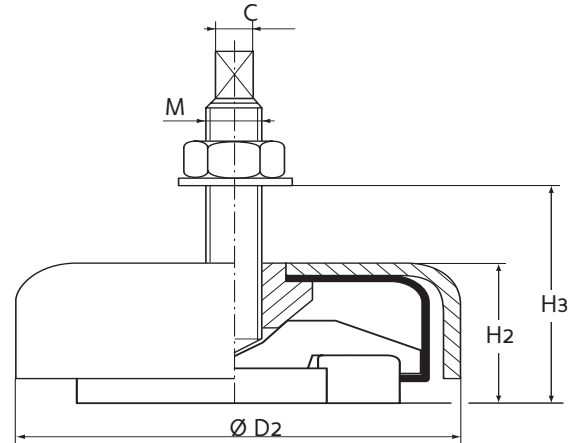
The thicker metallic cushion of the version W, can be used for mounting forming tools (presses, shears, folding machines) and improves the vibration isolation level.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



V4*(-W)



V4*H(-W)

* Complete part number; see table below.
W = Low frequency cushion.

OPERATING CHARACTERISTICS

Reference	Static load (daN)	Max. dynamic force in compression (daN)	Natural frequency (Hz)	Ø D1 (mm)	H1 (mm)	Ø D2 (mm)	H2 (mm)	M	C (mm)	H3 maxi (mm)	Ø d1 (mm)	Ø d2 (mm)	P (mm)	
V43	50 to 350	750	22 to 30	81	20	-	-	-	-	-	17	12	3	
V43-H				-	-	96	35	M12	8	115	-	-	-	
V43-W			15 to 22	81	31	-	-	-	-	-	-	17	12	3
V43-WH				-	-	96	46	M12	8	125	-	-	-	
V44	200 to 1 300	4 000	22 to 30	81	20	-	-	-	-	-	17	12	3	
V44-H				-	-	96	35	M16	10	135	-	-	-	
V44-W			15 to 22	81	31	-	-	-	-	-	-	17	12	3
V44-WH				-	-	96	46	M16	10	147	-	-	-	
V45	700 to 2 700	8 000	22 to 30	128	26	-	-	-	-	-	33	18	3	
V45-H				-	-	152	45	M20	13	155	-	-	-	
V45-W			15 to 22	128	36,5	-	-	-	-	-	-	33	18	3
V45-WH				-	-	152	56	M20	13	163	-	-	-	
V46	2 000 to 5 000	15 000	22 to 30	170	34,5	-	-	-	-	-	44	28	4	
V46-H				-	-	190	60	M24	16	160	-	-	-	
V46-W			15 to 22	170	43,5	-	-	-	-	-	-	44	28	4
V46-WH				-	-	190	71	M24	16	170	-	-	-	

Maximum excitation at resonant frequency: ± 0.2 mm (± 0.4 mm with low frequency cushion, suffix W).



V47 V47D V47T V47Q

Natural frequency : (1)
8 to 20 Hz

DESCRIPTION

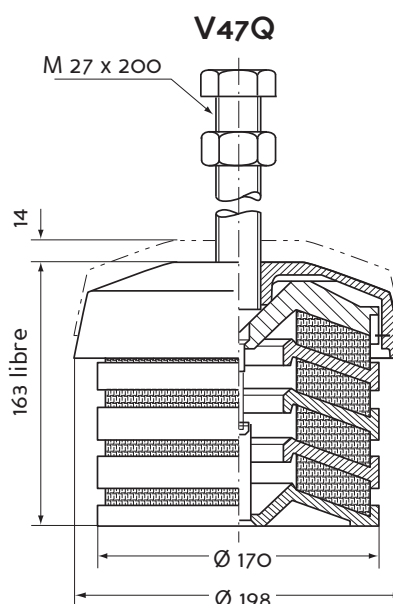
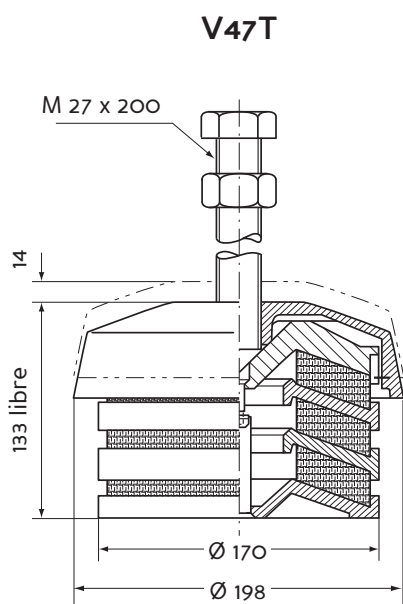
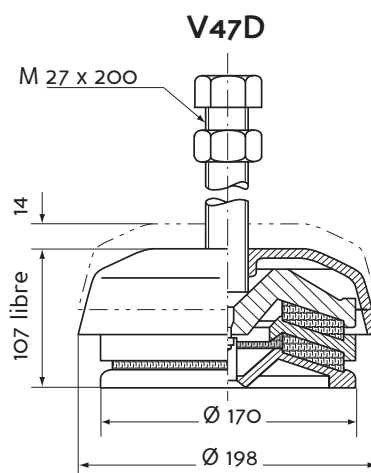
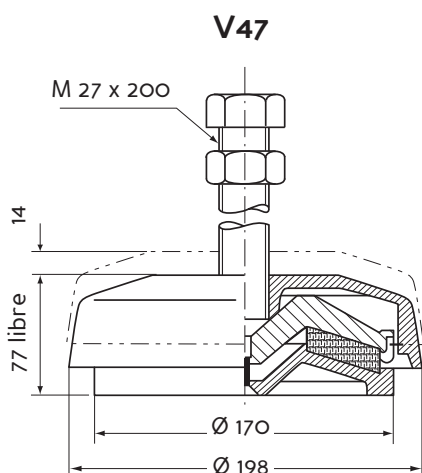
- Anti-vibration mount available with a constant natural frequency over a wide load range.
- Cast iron base and levelling device.
- Conical wire mesh cushion, capable of narrying lateral loads.
- V47D version has a stack of two cushions with a cast iron separating cup.
- V47T and V47Q have three and four metal cushions respectively.

APPLICATIONS

This machinery mount, with adjustable height, is used for machine tools and other rotating machine. The V47 and V47D are designed for presses and printing machines.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



OPERATING CHARACTERISTICS

Reference	Load range (daN)	Max. dynamic force (daN)	Natural frequency (Hz)	Weight of mounting (Kg)
V47	250 to 7 000	21 000	15 to 20	9,1
V47D	250 to 7 000	21 000	12 to 16	12,2
V47T	250 to 7 000	21 000	10 to 13	13,1
V47Q	250 to 7 000	21 000	8 to 11	15,1



PDM-1000-01 PDM-2000-01

Natural frequency : (1)
15 to 18 Hz

DESCRIPTION

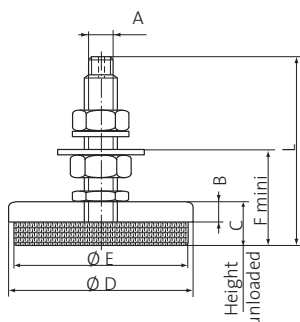
Low profile mounts with high static and dynamic load range.

- 100% 316 stainless steel.
- Natural frequency from 15 to 18 Hz.
- Dynamic load in compression : 3 g.
- Maximum sinusoidal input at resonance: ± 0.4 mm.

APPLICATIONS

- Anti-vibration mounts for presses and machine tools without the need to fix or grout in position.
- For chemical, food industry ...

OPERATING CHARACTERISTICS



Reference	Static load (daN)	A	B (mm)	C (mm)	Ø D (mm)	Ø E (mm)	F (mm)	L (mm)
PDM-1000-01	200 to 1 000	M12 M16	18	27	80	73	52	156
PDM-2000-01	800 to 2000	M16 M20	15	30	128	120	62	197

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.



SP550W, 551W, 552W, 553W SP560W, 561W, 562W, 563W

Fréquence propre : (1)
15 à 20 Hz

DESCRIPTION

Machine mount available with a stud (SP55*W) or threaded hole (SP56*W).

- Top cup and stud are mild steel zinc plated.
- Stainless steel wire mesh cushion.
- Natural frequency between 15 to 20 Hz.

APPLICATIONS

- Mount for low loads.
- Suitable for rotating machines (> 2500 rpm) and laboratory equipment ...

OPERATING CHARACTERISTICS

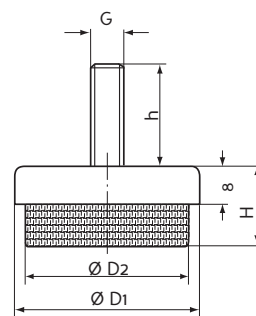
Reference with thread stud	Reference with tapped hole	Ø D1 (mm)	Ø D2 (mm)	H (mm)	h * (mm)	G	Static load (daN)	Deflection under load (mm)
SP550W	SP560W	28	23,6	17,5	20	M6	60	4,2
SP551W	SP561W	40	34,5	17	20	M6	100	4,8
SP552W	SP562W	45	40	22	25	M8	150	5,6
SP553W	SP563W	58	53,6	22	25	M8	225	6,3

* SP55*W only.

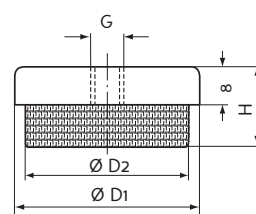
(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

PAULSTRA - 61 rue Marius AUFAN - 92309 Levallois-Perret Cedex - France - T. +33 1 40 89 53 31 - F. +33 1 47 25 28 96 - www.paulstra-industry.com

SP55*W



SP56*W





SP539-882 SP539-883
SP539-887 SP539-888

Natural frequency : (1)
10 to 16 Hz

DESCRIPTION

All metal mount comprising a stack of between one and three woven steel cushions giving a variation in natural frequency depending upon the number of cushions. This make higher levels of isolation possible.

The stainless steel cushions in conical shape are capable of carrying radial loads.

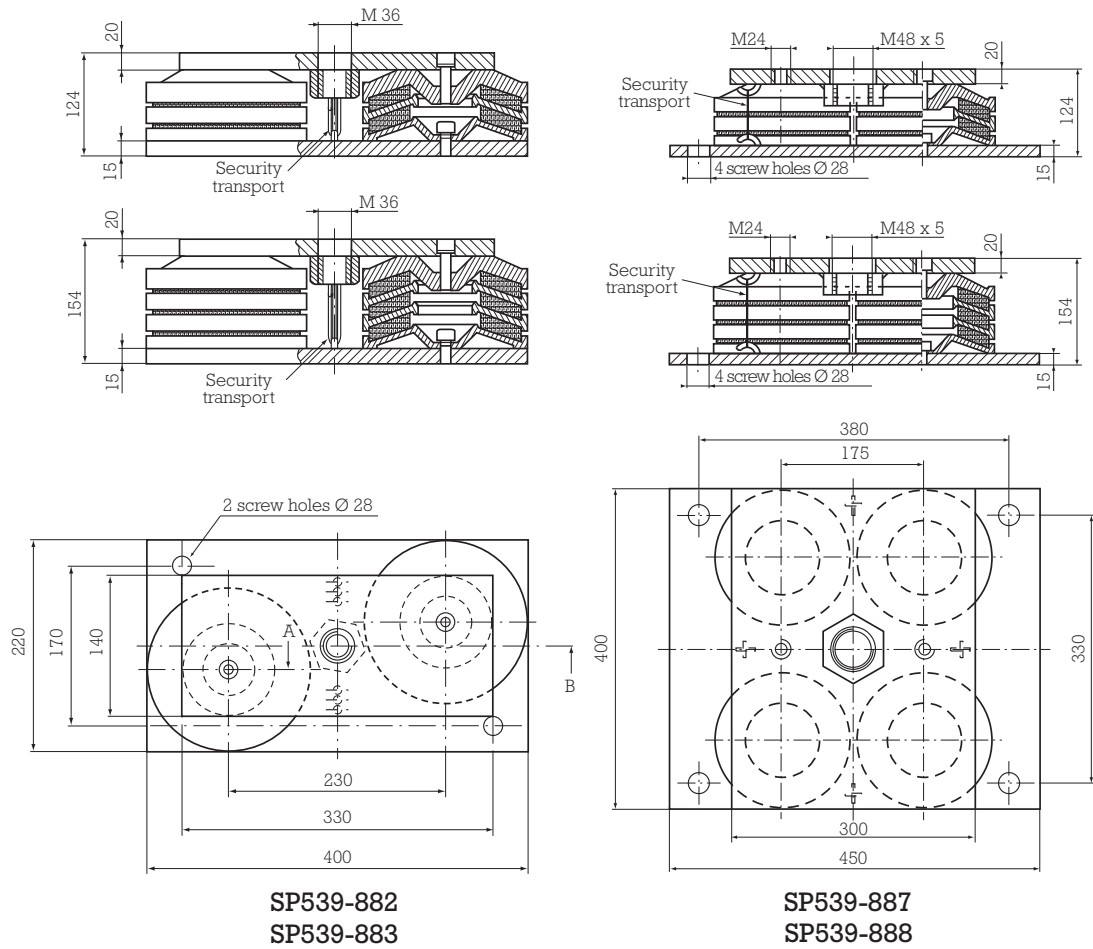
This mount ensures good stability of the suspended equipment.

APPLICATIONS

- Metal cutting or metal forming machines (presses, punches, ...).
- Heavy rotating machines.n Machines tournantes fortes charges.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



OPERATING CHARACTERISTICS

Reference	Height (mm)	Load range (daN)	Natural frequency (Hz)	Weight of mounting (Kg)
SP539-882 SP539-883	124 154	500 to 14 000	12 to 16 10 to 13	37 41
SP539-887 SP539-888	124 154	1 000 to 28 000	12 to 16 10 to 13	70 82



V118-MG V118-DG V318 V318-D

Natural frequency : (1)
11 to 22 Hz

DESCRIPTION

V118-MG and V318 mounts have cast iron cover and base with 4 mountings holes in the base and a central tapped hole in the cover.

The resilient elements are stainless steel wire mesh cushions :

- V118-MG and V318 have two cushions;
- V118-DG and V318-D have three cushions.

APPLICATIONS

This series of mounts have a natural frequency between 18 and 25 Hz and can be used for mounting :

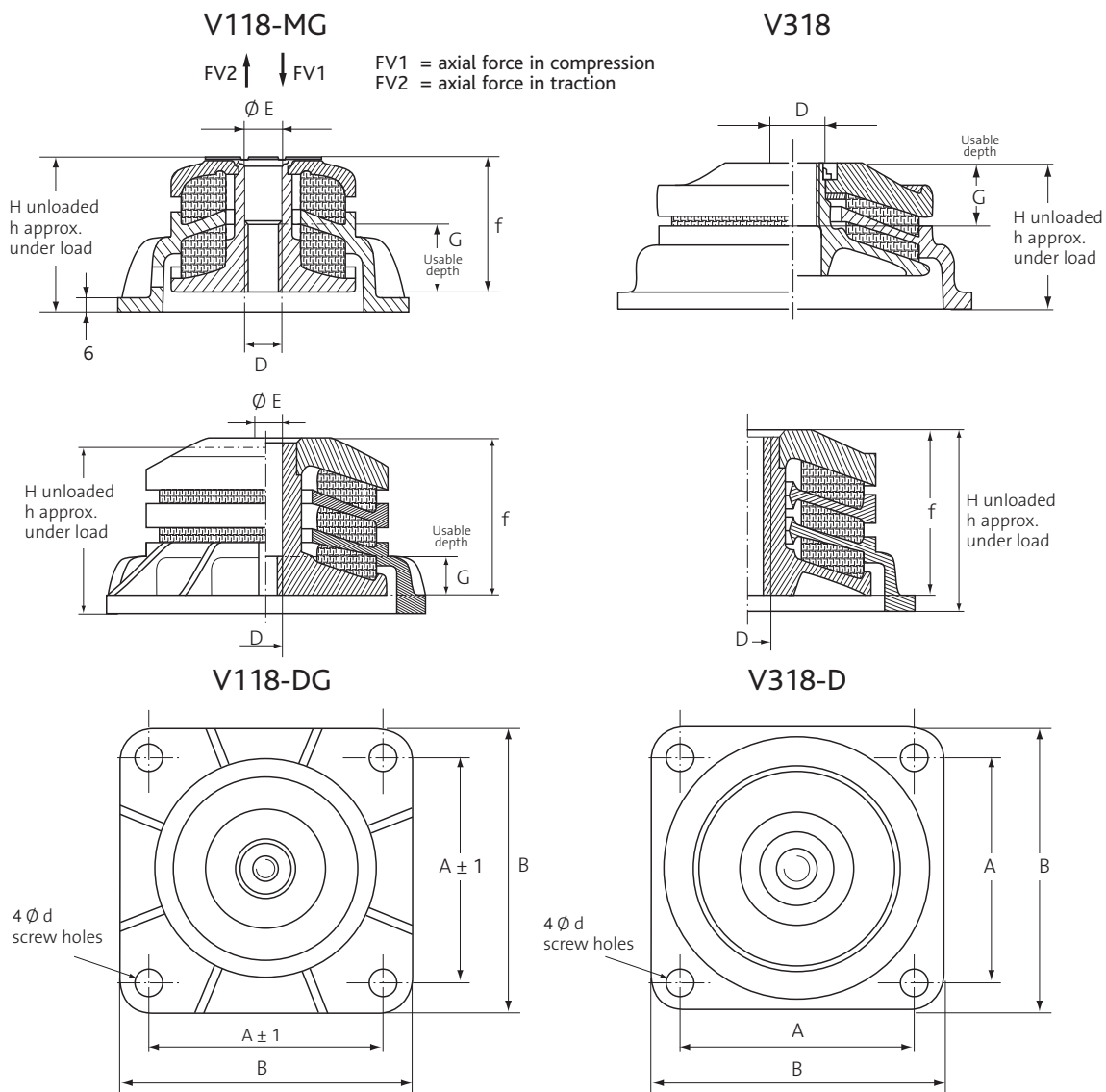
- heavy machinery (grinders, crushers, inclined presses, eccentric presses, printing presses, textile machines).
- rotating machines (motors, generator sets, pumps, etc), which rotate at more than 2000 rpm for V118-DG and V318-D and up to 2500 rpm for V118-MG and V318.
- gantry cranes (structure, cabs, equipment).

The isometric stiffness characteristics and anti-rebound metal cushions of these suspensions makes them suitable for suspending engines on ships, vehicles, etc.

As they can withstand temperatures between - 70°C and + 300°C, they can also be used for mounting exhaust pipes.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



Reference	A (mm)	B (mm)	D	$\varnothing E$ (mm)	G (mm)	H (mm)	$\varnothing d$ (mm)	f (mm)	h under FV1 app. (mm)	h under FV2 app. (mm)
V118-MG	100	130	M16	16,5	30	73	12	63	68	77
V118-DG	100	130	M16	16,5	30	98	12,5	84	-	-
V 318	170	220	M27	-	59	97	17	-	93	100
V318-D	170	220	M27	-	-	125	17	112	-	-

Operating characteristics

- Maximum permitted excitation at natural frequency of suspension : ± 0.3 mm.
- Amplification factor at resonance : < 4 .

Référence	Plage d'utilisation (daN)	Efforts dynamiques maximum (daN)			Fréquence propre (Hz)	Poids du support (kg)
		Axial compression	Axial traction	Radial		
V118-MG V118-DG	50 à 900	4 500	1 500	1 500	16 à 22 11 à 17	2 2,4
V318 V318-D	250 à 7 000	21 000	9 000	7 500	16 à 22 11 à 17	10 13



V120 V120-D V125 V125-D

Fréquence propre : (1)
13 à 20 Hz

DESCRIPTION

Series of all metal low profile mounts with one or two cushions, working in compression only, permitting high dynamic overloads (using a load distribution plate). Mounts can be fixed to floor.

Made of cups welded on a steel base with one or two stainless steel cushions (inox 18/8).

The steel parts are painted to protect against corrosion.

APPLICATIONS

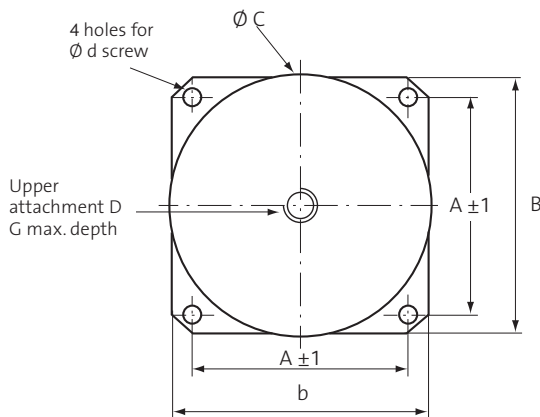
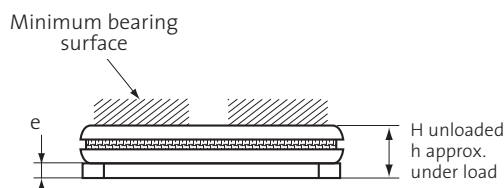
These mounts are designed for :

- suspension of presses,
- suspension of machine-tools which do not need levelling,
- suspension of transformers, diesel engines,
- suspension of rotating machines operating :
 - > 2500 rpm : V120 and V125,
 - > 2000 rpm : V120-D and V125-D.

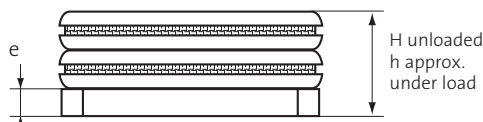
(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

V120
V125



V120-D
V125-D



Reference	A (mm)	B (mm)	Ø C (mm)	D	G (mm)	H (mm)	b (mm)	Ø d (mm)	e (mm)	h (mm)
V120 V125	114 138	150 165	126 165	M16 M20	28	36	140 160	12	8	32
V120-D V125-D	114 138	150 165	126 165	M16 M20	50	70 70,5	140 160	12	16	66

OPERATING CHARACTERISTICS

- Maximum permitted excitation at natural frequency of suspension :
 V120 and V125 : ± 0.3 mm,
 V120-D and V125-D : ± 0.4 mm.
- Natural frequencies for this amplitude :
 - axial } V120 and V125 : 15 to 20 Hz,
 - radial } V120-D and V125-D : 13 to 18 Hz.
- Amplification factor at resonance : < 5.
- Operating temperature : - 70°C to + 300°C.

Reference	Static axial load (daN)	Maximum dynamic force in compression (daN)	Weight of mounting (Kg)
V120 V125	120 - 2 500 250 - 7 000	12 500 22 500	2,3 3,5
V120-D V125-D	120 - 2 500 250 - 7 000	12 500 22 500	4,5 7



V164 V168

Natural frequency : (1)
8 to 22 Hz

DESCRIPTION

The V164 and V168 dampers have a cover, an AG3 mounting plate and an AU4G shaft. The assembly is chromatised.

The upper and lower stainless steel cushions are the resilient elements of the mount. It has four Ø 8 mounting holes on the mounting plate and one M10 tapped hole on upper cover.

APPLICATIONS

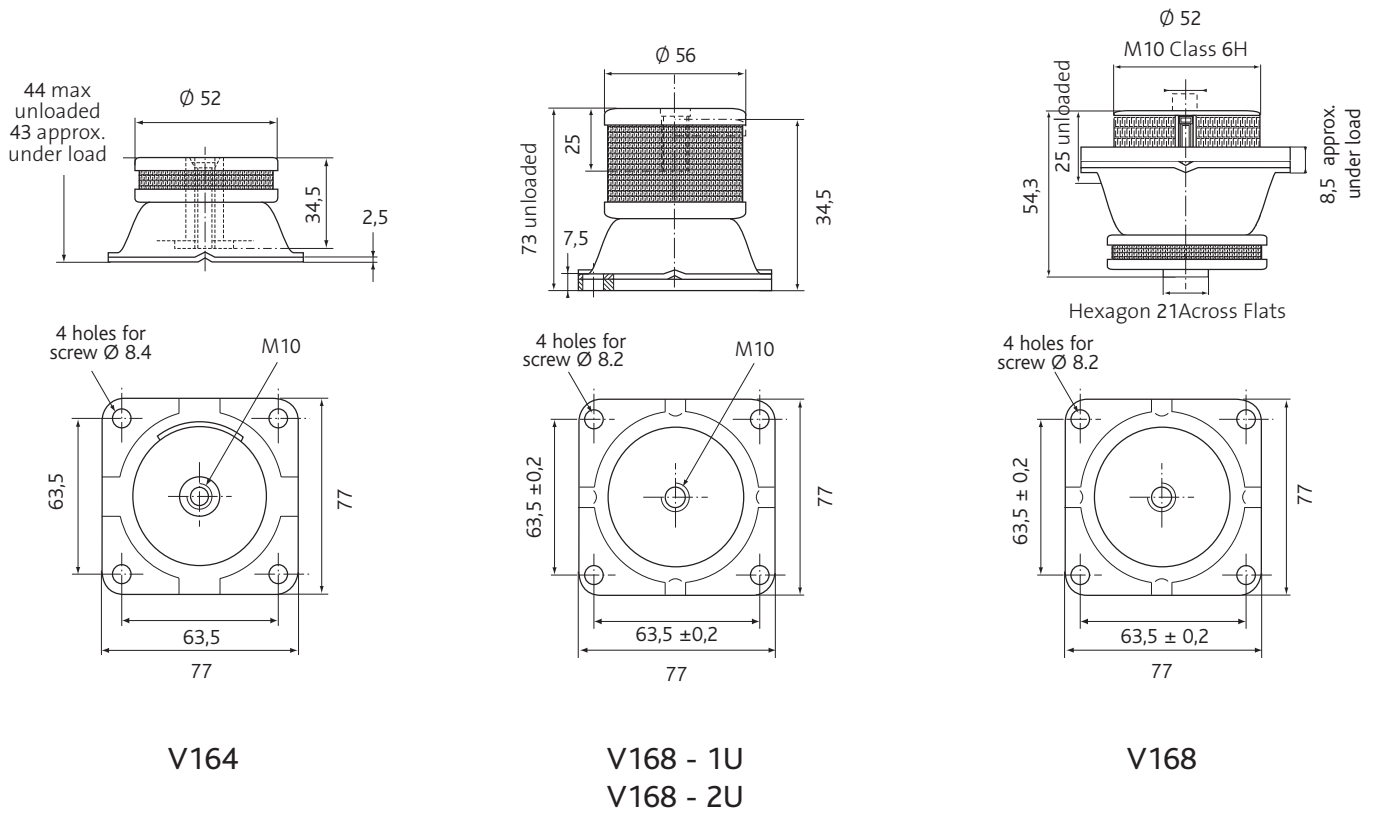
The load range of between 5 and 170 kg makes it suitable for isolating light machine tools from motors with rotational speeds of over 2500 rpm.

The V164 has an isometric natural frequency of 15 to 22 Hz and 8 to 12 Hz. Their lower cushion can withstand accidental traction forces (for example, shock rebound).

These dampers are not affected by aggressive chemicals and can be used, for example, for mounting petro-chemical pumps.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



OPERATING CHARACTERISTICS

- Maximum permitted excitation at natural frequency of suspension : ± 0.3 mm.
- Amplification factor at resonance : < 4 .
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.

Reference	Natural frequency axial and radial	Static axial load (daN)	Maximum dynamic forces (daN)		Weight of mounting (kg)
			Compression	Tension	
V164-F V164-G	15 to 22 Hz	5 to 30 20 to 120	150 1 250	150 600	0,18
V168-1U V168-2U	8 to 12 Hz	25 to 60 50 to 170	180 510	75 150	0,35
V168-1 V168-2	10 to 13 Hz	25 to 60 50 to 170	75 150	180 510	0,35



V402 - MG

Natural frequency : (1)
15 to 22 Hz

DESCRIPTION

The V402-MG damper has a cast iron upper cover and mounting plate and a high strength aluminium alloy shaft.

The resilient element is a woven stainless steel cushion.

The cast iron parts are painted.

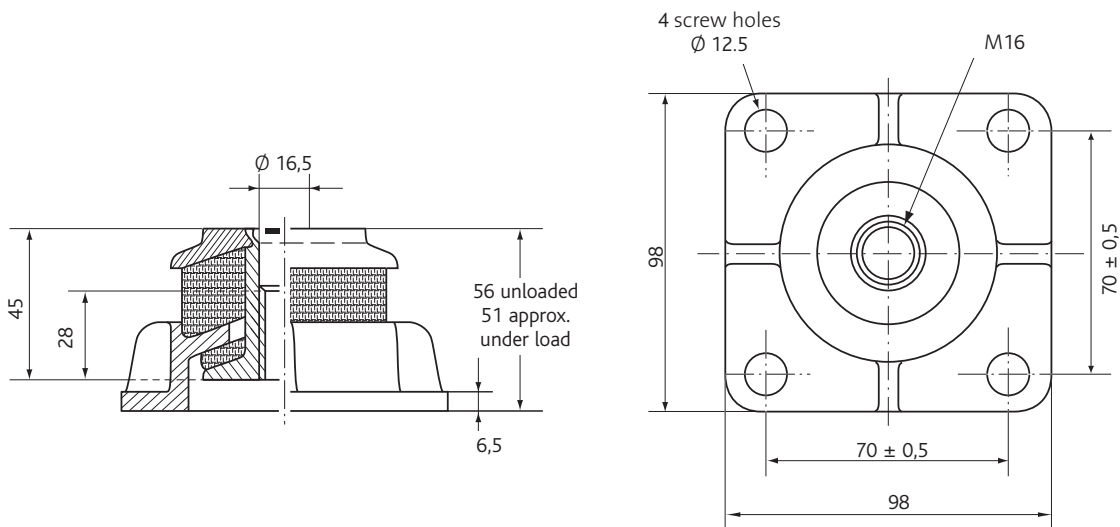
APPLICATIONS

This all metal damper has a natural frequency between 15 and 22 Hz and is isometric within the defined load ranges. It is designed for compression loads but its retaining cushion makes it able to withstand high tensile forces.

The conical cushions provide resilience in all directions. It can be used to suspend fixed or on board machine tools and rotating machines (pumps, engines, generator sets rotating at speeds over 2500 rpm).

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



OPERATING CHARACTERISTICS

- Natural frequency :
 - axial } 15 to 22 Hz.
 - radial }
- Maximum permitted excitation at natural frequency of suspension : ± 0.3 mm.
- Amplification factor at resonance : < 4 .
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.
- Weight 0.75 Kg approximative.

Reference	Static load (daN)	Maximum dynamic force (daN) (compression or tension)
V402-MG	30 to 700	3 500



V1H751 V1H752

Natural frequency : (1)
15 to 25 Hz

DESCRIPTION

The V1H751 and 752 range has a pressed steel casing and mounting plate and light alloy shaft. The resilient element is a stainless steel wire pad.

The steel parts are painted.

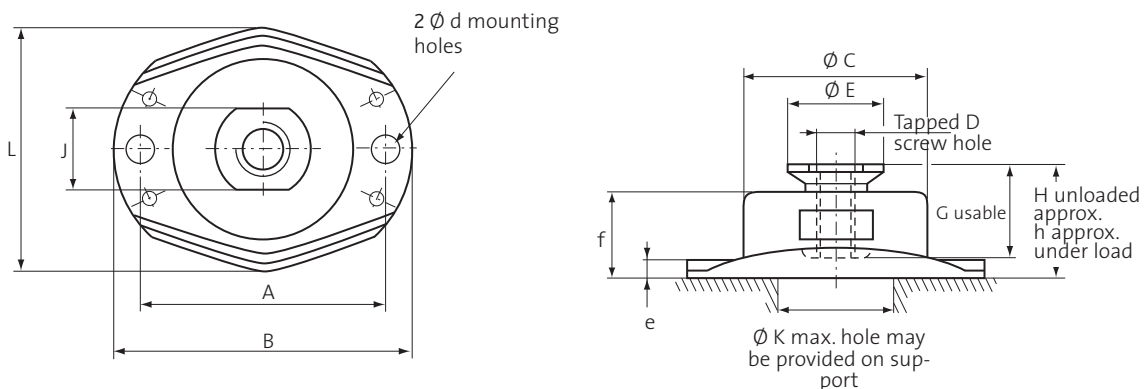
APPLICATIONS

The V1H 751 and 752 have a natural frequency between 15 and 25 Hz for static loads under compression.

The -11 and -12 versions are reinforced by radial cushions and can absorb considerable horizontal dynamic forces, which makes it possible to use them for mounting on board equipment in ships, rail, road transport, civil engineering plant (engines, pumps, generator sets, pipework) or fixed machines that have to be floor mounted.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



Reference	A (mm)	B (mm)	Ø C (mm)	D	Ø E (mm)	G (mm)	H (mm)	J (mm)	Ø K (mm)	L (mm)	Ø d (mm)	e (mm)	f (mm)	h (mm)
V1H751	92*	110	69	M12	32	47	54	27	40	90	11*	5,5	40,5	50
V1H752	126	152	96	M20	41	51	60	36	60	124	15	7	45	56

* Oblong holes with 2 mm aperture.

OPERATING CHARACTERISTICS

- Natural frequency :
 - axial } 15 to 25 Hz depending on load.
 - radial }
- Maximum permitted excitation at natural frequency of suspension : ± 0.4 mm.
- Amplification factor at resonance : < 4 .
- Structural strength corresponding to continuous acceleration under compression of 5 g for the 751 and 10 g for the 752 with maximum load.
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.
- Weight V1H751 : 0.75 kg,
V1H752 : 1.6 kg.

Reference	Static axial load (daN)	Maximum dynamic forces (daN)			Upper mounting screws		
		Compression	Tension	Radial	Take up length (mm)		Torque (N.m)
					mini	maxi	
V1H751-01	70 - 250	900	900	300	25	45	18
V1H751-11	70 - 250	900	900	800			40
V1H751-02	150 - 500	2 000	1 800	650			18
V1H751-12	150 - 500	2 000	1 800	1 600			40
V1H752-01	300 - 1 000	4 000	3 000	1 000	35	50	50
V1H752-11	300 - 1 000	4 000	3 000	3 000			140



V1H5023 V1H5025

Natural frequency : (1)
15 to 25 Hz

DESCRIPTION

The V1H5023 and V1H5025 mounts have cast iron upper housing and base. The base has four fixing holes.

The resilient elements are stainless steel wire mesh cushions. The cast iron parts are painted.

APPLICATIONS

Isolation of machine-tools : grinding machines, crushing machines, fly-presses, printing machines, textile machinery, etc.

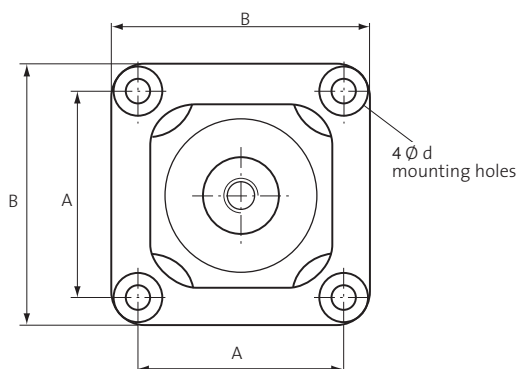
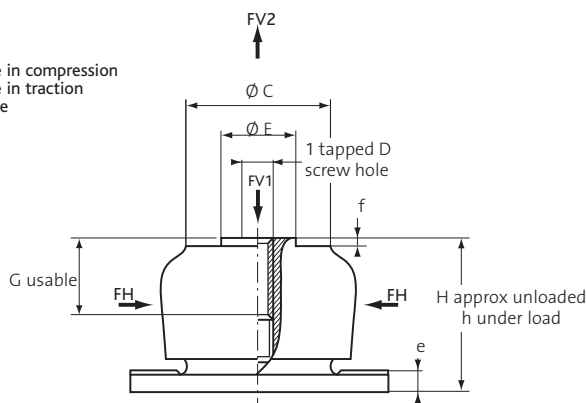
Isolation of rotating machines : engines, sets, pumps, etc. rotating over 2500 rpm.

Marine : isolation of exhaust pipes, manifold, boilers, motors, sets, pumps, etc.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

FV1 = axial force in compression
FV2 = axial force in traction
FH = radial force



Reference	A (mm)	B (mm)	Ø C (mm)	D	Ø E (mm)	G (mm)	H (mm)	Ø d (mm)	e (mm)	f (mm)	h under FV1 (mm)	h under FV2 (mm)
V1H5025*	138	172	100	M20	50	50	100	15	12	5	96	104
V1H5023*	215	260	140	M33	70	60	136	23	18	7	132	140

* Load indice, see below.

OPERATING CHARACTERISTICS

Maximum permitted excitation at natural frequency of suspension : ± 0.3 mm.

- Natural frequencies for this amplitude :
 - axial } 15 to 25 Hz depending on load.
 - radial }
- Amplification factor at resonance : < 4 .
- Structural strength : see table.
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.

Reference	Static axial load (daN)	Maximum dynamic forces (daN)			Weight (kg)
		Axial compression	Axial tension	Radial	
V1H5025-01 V1H5025-02	350 - 900 800 - 3 000	4 500 15 000	4 500 4 500	4 500 4 500	6,7
V1H5023-01 V1H5023-02	1 000 - 2 500 2 000 - 7 000	12 500 35 000	12 500 12 500	12 500 12 500	24,4



V1H-6000 V1H-6100

Natural frequency : (1)
12 to 18 Hz

DESCRIPTION

The V1H-6000 and V1H-6100 steel mounts have a mounting plate, a cover and a swaged steel shaft.

They are available with stainless steel or mild steel zinc plated metalwork.

The resilient parts are stainless steel wire cushions.

The steel parts are zinc plated.

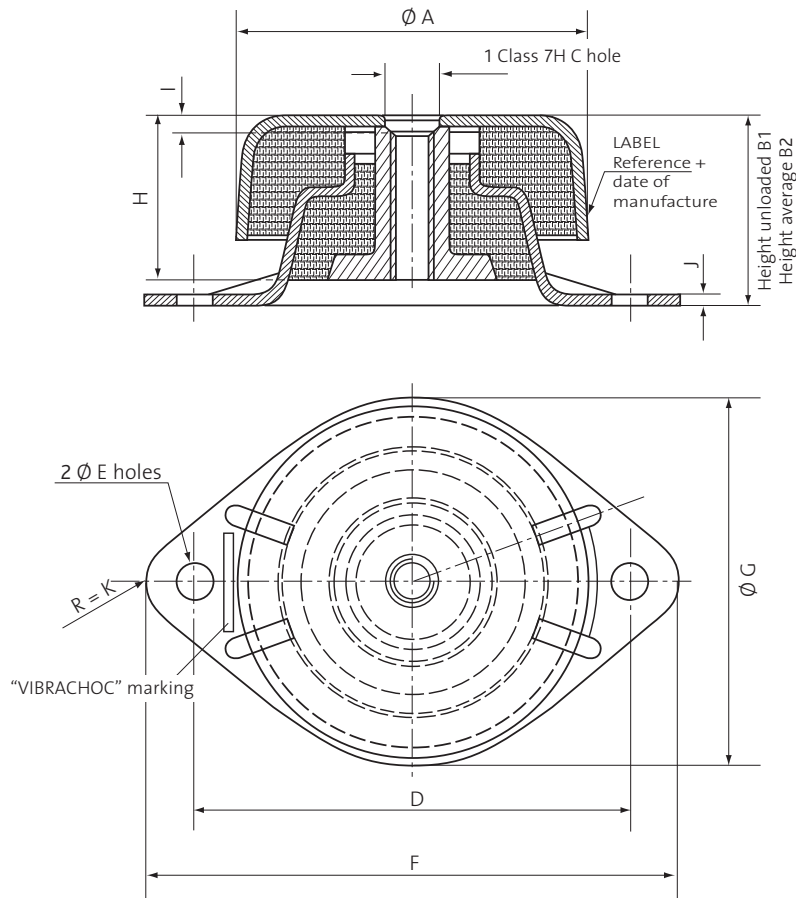
APPLICATIONS

The V1H-6000 and V1H-6100 mounts have a natural frequency of between 12 and 18 Hz and are designed for suspending rotating machines, electronic cabinets, pipes, air conditioning systems, etc. Its all metal construction means that its characteristics do not deteriorate with time and it maintains its height under load, even in the most severe ambient conditions and temperatures.

The shape of the armature and upper cushion provide high radial performance and a structural strength of 3 g, making it suitable for mounting on board equipment on military ground vehicles and ships.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONES



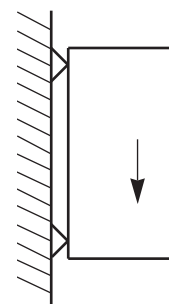
Reference	$\varnothing A$ (mm)	B1 (mm)	B2 (mm)	C	D (mm)	$\varnothing E$ (mm)	F (mm)	$\varnothing G$ (mm)	H (mm)	I (mm)	J (mm)	K (mm)
V1H-6000*	105	62	57	M12	130	11	160	110	50	5	3	15
V1H-6100*	82	56	51	M10	98	9	120	85	46	3	2	11

* load indice, see below.

OPERATING CHARACTERISTICS

- Natural frequency :
 - axial } 12 to 18 Hz depending on the load.
 - radial }
- Structural strength : 3 g.
- Complies with GAMT13-MIL.STD. 167-1.
- Operating temperature : - 70°C to + 300°C.
- Amplification factor at resonance : < 4.

Steel reference	Inox reference	Load range (daN)	Weight (kg)
V1H-6100-21 V1H-6100-01 V1H-6100-02 V1H-6100-03	V1H-6100-21NX V1H-6100-01NX V1H-6100-02NX V1H-6100-03NX	15 to 40 25 to 75 50 to 150 100 to 250	0,65
V1H-6000-21 V1H-6000-01 V1H-6000-02 V1H-6000-03	V1H-6000-21NX V1H-6000-01NX V1H-6000-02NX V1H-6000-03NX	30 to 75 50 to 150 100 to 300 200 to 500	1,6



Mountings with radial load
(consult us)



V1B1114 V1B1134
V1B1115 V1B1135
V1B1116 V1B1136

Natural frequency : (1)
3 to 9 Hz

DESCRIPTION

This range of mounts has one or two steel mounting plates depending on the model, one or several high strength steel springs, 2 light alloy rings and a stainless steel wire cushion in each spring. All steel parts are painted.

APPLICATIONS

These very low frequency isolators (down to 3 Hz) can be used to mount machine rotating at speeds over 450 rpm, vibrators and impact machines, achieving an attenuation of about 95%.

They are all metal and can be used outdoors or in the harshest conditions.

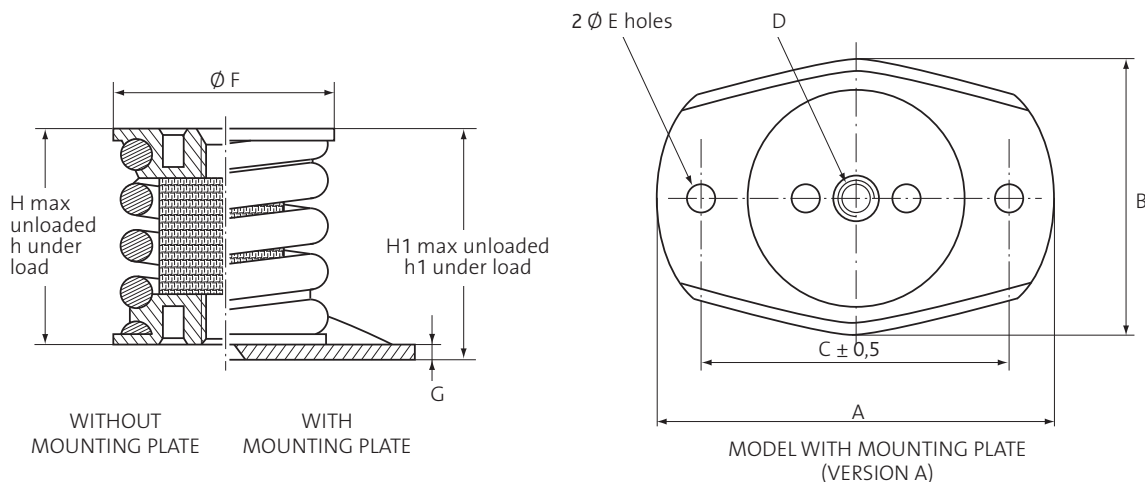
As they do not creep, their life time may be the same as that of the machine they are used to mount.

A metal cushion inside each spring increases the damping factor and limits the amplification at the natural frequency.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

SINGLE ELEMENTS



Reference	A (mm)	B (mm)	C (mm)	D	Ø E (mm)	Ø F (mm)	G (mm)	H (mm)	h (mm)	H1 (mm)	h1 (mm)
V1B1114	90	60	69,6	M8	7	47	2,5	59	47,5	61,5	50 ± 2
V1B1115	90	60	69,6	M8	7	47	2,5	59	47,5	61,5	50 ± 3
V1B1116	90	60	69,6	M8	7	47	2,5	88	68	90,5	70,5 ± 5
V1B1134	140	100	110	M12	11	78	4	88	78	92	82 ± 2
V1B1135	140	100	10	M12	11	78	4	88	78	92	82 ± 3
V1B1136	140	100	110	M12	11	78	4	142	120	146	124 ± 5

OPERATING CHARACTERISTICS

• Vibrational and mechanical characteristics

- Isolation of rotating machines with a minimum speed of :

Tr/mn	Series	Axial natural frequency = fz	Radial natural frequency = fr	Axial max. force	Radial max. force	Amplification factor at resonance
1 000	V1B1114 & V1B1134	7 to 9 Hz	fr = fz	4 g	1,2 g	≤ 5
650	V1B1115 & V1B1135	5 to 6 Hz	fr = fz	2 g	1,2 g	≤ 10
450	V1B1116 & V1B1136	3 to 4 Hz	fr = 0,7 fz	2 g	0,5 g	≤ 10

Maximum permitted excitation at natural frequency of suspension : ± 1 mm.

• Load ranges

Part number		Static load (daN)	Référence		Static load (daN)
without mounting plate	with mounting plate		without mounting plate	with mounting plate	
V1B1114-01	V1B1114-01A	6 to 10,5	V1B1134-01	V1B1134-01A	40 to 85
V1B1114-02	V1B1114-02A	7,5 to 13,5	V1B1134-02	V1B1134-02A	65 to 125
V1B1114-03	V1B1114-03A	12 to 20	V1B1134-03	V1B1134-03A	110 to 190
V1B1114-04	V1B1114-04A	18 to 30	V1B1134-04	V1B1134-04A	175 to 270
V1B1114-05	V1B1114-05A	24 to 46	V1B1134-05	V1B1134-05A	250 to 400
V1B1114-06	V1B1114-06A	40 to 75	V1B1134-06	V1B1134-06A	360 to 560
V1B1115-01	V1B1115-01A	5 to 7	V1B1134-07	V1B1134-07A	540 to 730
V1B1115-02	V1B1115-02A	6 to 9	V1B1135-01	V1B1135-01A	30 to 48
V1B1115-03	V1B1115-03A	9 to 14	V1B1135-02	V1B1135-02A	48 to 80
V1B1115-04	V1B1115-04A	14 to 20	V1B1135-03	V1B1135-03A	80 to 130
V1B1115-05	V1B1115-05A	20 to 30	V1B1135-04	V1B1135-04A	130 to 200
V1B1115-06	V1B1115-06A	30 to 50	V1B1135-05	V1B1135-05A	200 to 310
V1B1116-01	V1B1116-01A	5 to 7	V1B1135-06	V1B1135-06A	310 to 400
V1B1116-02	V1B1116-02A	6 to 9	V1B1135-07	V1B1135-07A	420 to 560
V1B1116-03	V1B1116-03A	9 to 14	V1B1136-01	V1B1136-01A	75 to 105
V1B1116-04	V1B1116-04A	14 to 20	V1B1136-02	V1B1136-02A	95 to 130
V1B1116-05	V1B1116-05A	20 to 30	V1B1136-03	V1B1136-03A	115 to 160
V1B1116-06	V1B1116-06A	30 to 50	V1B1136-04	V1B1136-04A	160 to 230
			V1B1136-05	V1B1136-05A	220 to 310
			V1B1136-06	V1B1136-06A	300 to 415
			V1B1136-07	V1B1136-07A	410 to 550

DIMENSIONS

MULTIPLE ELEMENTS

<p>H2 max under load - h.2 under load</p>	<p>V1B1134-25, -26 or -27 V1B1135-25, -26 or -27 V1B1136-25, -26 or -27</p>	<p>V1B1134-36 or -37 V1B1135-36 or -37 V1B1136-36 or -37</p>
<p>V1B1134-45 or -46 V1B1135-45 or -46 V1B1136-45 or -46</p>	<p>V1B1134-56 - V1B1135-56 V1B1136-56</p>	<p>V1B1134-66 - V1B1135-66 V1B1136-66</p>
<p>V1B1134-86 V1B1135-86 V1B1136-86</p>	<p>V1B1134-125 or -126 V1B1135-125 or -126 V1B1136-125 or -126</p>	<p>V1B1134-205 or -206 V1B1135-205 or -206 V1B1136-205 or -206</p>

OPERATING CHARACTERISTICS

- Vibrational and mechanical characteristics (see Single elements)
- Load ranges

Part number	Static load (daN)	H2 unload. (mm)	h2 under load (mm)	e (mm)	Part number	Static load (daN)	H2 unload. (mm)	h2 under load (mm)	e (mm)
V1B1134-25	500 to 800	96	86 ±3	4	V1B1135-66	1 860 to 2 520	108	98 ±3	10
V1B1134-26	720 to 1 120	96	86 ±3	4	V1B1135-67	2 520 to 3 360	110	98 ±3	10
V1B1134-27	1 080 to 1 460	106	94 ±3	8	V1B1135-86	2 480 to 3 360	108	98 ±3	10
V1B1134-36	1 080 to 1 680	106	94 ±3	8	V1B1135-87	3 360 to 4 480	110	98 ±3	10
V1B1134-37	1 620 to 2 190	106	94 ±3	8	V1B1135-125	2 340 to 3 720	108	98 ±3	10
V1B1134-45	1 000 to 1 600	104	94 ±3	8	V1B1135-126	3 720 to 5 040	108	98 ±3	10
V1B1134-46	1 440 to 2 240	104	94 ±3	8	V1B1135-127	5 040 to 6 720	110	98 ±3	10
V1B1134-47	2 160 to 2 920	106	94 ±3	8	V1B1135-205	3 900 to 6 200	108	98 ±3	10
V1B1134-56	1 800 to 2 800	108	98 ±3	10	V1B1135-206	6 200 to 8 400	108	98 ±3	10
V1B1134-57	2 700 to 3 650	110	98 ±3	10	V1B1135-207	8 400 to 11 200	110	98 ±3	10
V1B1134-66	2 160 to 3 360	108	98 ±3	10	V1B1136-25	440 to 620	148	128 ±5	4
V1B1134-67	3 240 to 4 380	110	98 ±3	10	V1B1136-26	600 to 830	148	128 ±5	4
V1B1134-86	2 880 to 4 480	108	98 ±3	10	V1B1136-27	820 to 1 100	158	136 ±5	8
V1B1134-87	4 320 to 5 840	110	98 ±3	10	V1B1136-36	900 to 1 260	158	136 ±5	8
V1B1134-125	3 000 to 4 800	108	98 ±3	10	V1B1136-37	1 230 to 1 650	158	136 ±5	8
V1B1134-126	4 300 to 6 720	108	98 ±3	10	V1B1136-45	880 to 1 280	156	136 ±5	8
V1B1134-127	6 480 to 8 760	110	98 ±3	10	V1B1136-46	1 200 to 1 660	156	136 ±5	8
V1B1134-205	5 000 to 8 000	108	98 ±3	10	V1B1136-47	1 640 to 2 200	158	136 ±5	8
V1B1134-206	7 200 to 11 200	108	98 ±3	10	V1B1136-56	1 500 to 2 075	160	140 ±5	10
V1B1134-207	10 800 to 14 600	110	98 ±3	10	V1B1136-57	2 050 to 2 750	162	140 ±5	10
V1B1135-25	390 to 620	96	86 ±3	4	V1B1136-66	1 800 to 2 490	160	140 ±5	10
V1B1135-26	620 to 840	96	86 ±3	4	V1B1136-67	2 460 to 3 300	162	140 ±5	10
V1B1135-27	840 to 1 120	106	94 ±3	8	V1B1136-86	2 400 to 3 320	160	140 ±5	10
V1B1135-36	930 to 1 260	106	94 ±3	8	V1B1136-87	3 280 to 4 400	162	140 ±5	10
V1B1135-37	1 260 to 1 680	106	94 ±3	8	V1B1136-125	2 640 to 3 720	160	140 ±5	10
V1B1135-45	780 to 1 240	104	94 ±3	8	V1B1136-126	3 600 to 4 980	160	140 ±5	10
V1B1135-46	1 240 to 1 680	104	94 ±3	8	V1B1136-127	4 920 to 6 600	162	140 ±5	10
V1B1135-47	1 680 to 2 240	106	94 ±3	8	V1B1136-205	4 400 to 6 200	160	140 ±5	10
V1B1135-56	1 550 to 2 100	108	98 ±3	10	V1B1136-206	6 000 to 8 300	160	140 ±5	10
V1B1135-57	2 100 to 2 800	110	98 ±3	10	V1B1136-207	8 200 to 11 000	162	140 ±5	10



7002

Natural frequency : (1)
• En axial 7 to 10 Hz
• En radial 4,5 to 6 Hz

DESCRIPTION

The 7002 damper has a satin finish treated AG3 casing and mounting plate, a stainless steel centre axis. A spring and stainless steel cushion provide the resilient elements. It has four Ø 5.2 mounting holes in the base and a tapped hole in the centre axis.

APPLICATIONS

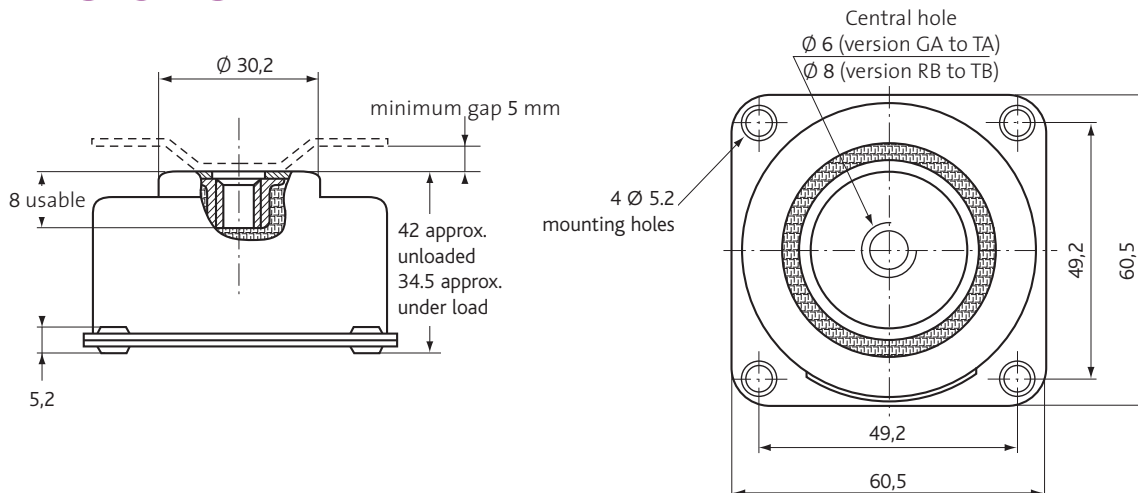
Its axial natural frequency of between 7 and 10 Hz and its integral travel limiter enable 7002 dampers to be used for mounting electronic or computer equipment, navigation equipment and on board measurement instruments.

They can also be used for static equipment for suspending control panels, etc.

Their all metal construction enable them to operate in the harshest of conditions.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS



OPERATING CHARACTERISTICS

- Natural frequencies :
 - axial : 7 to 10 Hz depending on load,
 - radial : 4.5 to 6 Hz depending on load.
- Maximum permitted excitation at natural frequency of suspension : ± 0.75 mm.
- Amplificator factor at resonance : < 4 .
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.
- Structural strength corresponds to continuous acceleration of 10 g with maximum load.
- Travel available under shock :
 - axial : ± 6 mm,
 - radial : ± 5 mm.
- Weight : 100 to 200 (depending on version).

Reference	Axial static load (daN)	Central hole
7002 GA	0,70 - 1,25	M6
7002 HA	1,15 - 2,30	
7002 JA	2,00 - 4,50	
7002 KA	2,80 - 5,60	
7002 LA	4,50 - 9,00	
7002 UA	7,00 - 14,00	
7002 MA	8,00 - 18,00	
7002 PA	16,00 - 22,00	
7002 RB	20,00 - 33,00	M8
7002 SB	28,00 - 45,00	
7002 TB	40,00 - 60,00	



MV70 MV71 MV72 MV73

Natural frequency : (1)
axial and radial 15 to 25 Hz

DESCRIPTION

All metal mount design to carry load in compression or tension and which includes an internal limit stop.

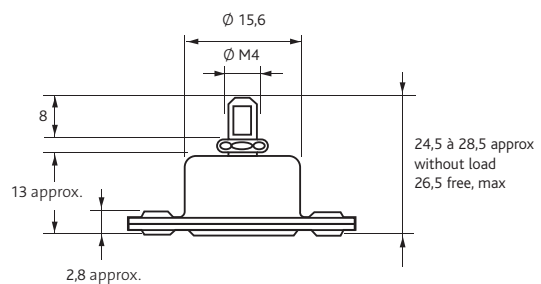
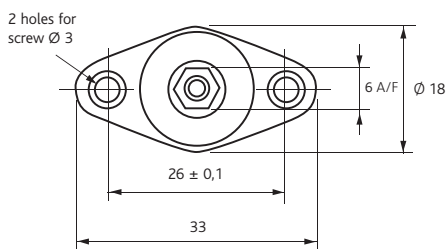
APPLICATIONS

Protection of components, assemblies and electronic equipment mounted in aircraft, road vehicles and trains including navigation equipment, control consoles, measuring instruments.

TECHNICAL CHARACTERISTICS

- Max permitted excitation at natural frequency :
MV70 : $\pm 0,3$ mm.
MV71 : $\pm 0,4$ mm.
MV72 : $\pm 0,45$ mm.
MV73 : $\pm 0,45$ mm.
- Amplification factor at resonance : < 4 .
- Operating temperature : $- 70$ °C to $+ 300$ °C.
- Structural strength corresponds to continuous acceleration of 10g with maximum load
- Internal snubber design for equivalent performance during continuous acceleration at maximum load.

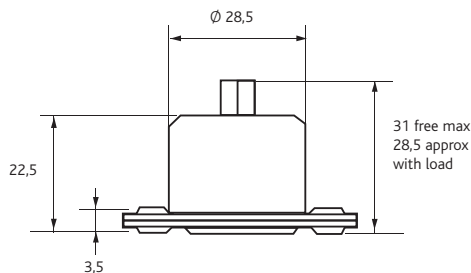
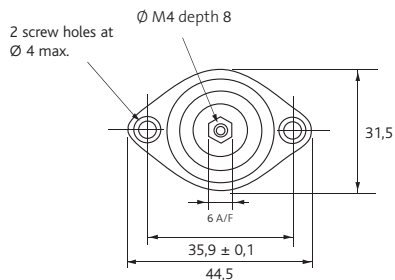
MV70



Reference	Static axial load (daN)	Natural frequency
MV70-01	0,05-0,20	20 to 25 Hz
MV70-02	0,15-0,35	
MV70-03	0,30-0,65	
MV70-04	0,50-0,85	
MV70-05	0,75-1,00	

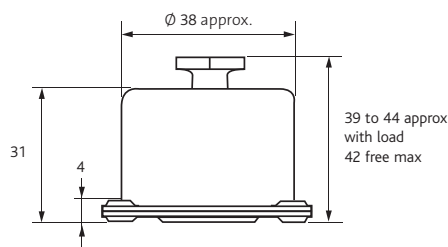
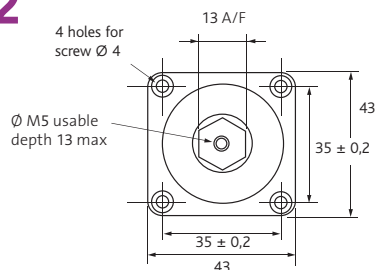
(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

MV71



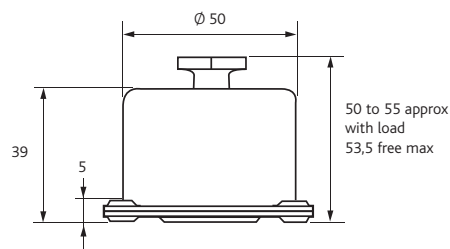
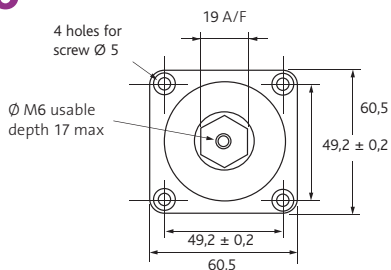
Reference	Static axial load (daN)	Natural frequency
MV71-01	0,18-0,50	15 to 20 Hz
MV71-02	0,30-0,70	
MV71-03	0,45-0,90	
MV71-04	0,65-1,30	
MV71-05	0,90-1,80	
MV71-06	1,35-2,40	
MV71-07	1,80-3,00	

MV72



Reference	Static axial load (daN)	Natural frequency
MV72-P03	0,30-0,55	15 to 20 Hz
MV72-P04	0,50-0,90	
MV72-P05	0,75-1,40	
MV72-P06	1,20-2,10	
MV72-P07	1,90-3,40	
MV72-P08	3,00-5,90	
MV72-P09	4,20-8,20	
MV72-P10	5,90-11,50	

MV73



Reference	Static axial load (daN)	Natural frequency
MV73-P02	2,50-5,20	15 to 20 Hz
MV73-P03	3,50-8,00	
MV73-P04	4,50-10,00	
MV73-P05	5,50-12,00	
MV73-P06	7,00-14,00	
MV73-P07	9,00-16,00	
MV73-P08	10,50-19,00	
MV73-P09	12,00-22,00	
MV73-P10	15,00-27,00	

(1) The Natural frequency indicated correspond to the maximum loads given in the TECHNICAL CHARACTERISTICS
(1) See p58.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.



VE101 VE111
VE112 VE113

Natural frequency : (1)
3,5 to 6 Hz

See also
PAULSTRA
elastomer range :
Traxiflex

DESCRIPTION

VE isolators have a cylindrical stainless steel spring, a galvanised body, an elastomer noise reduction guide and steel rings or studs depending on the model. The VE112 series has a steel cushion inside the spring.

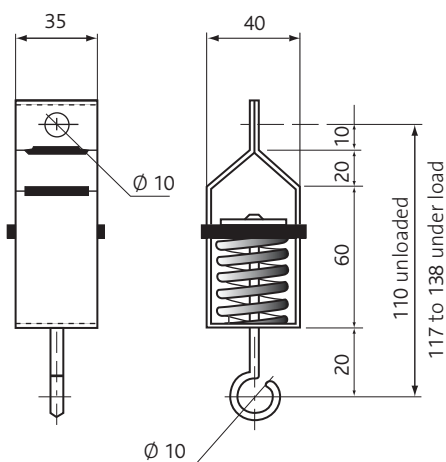
APPLICATIONS

These isolators with a natural frequency of between 3.5 and 6 Hz are specially designed for suspending false ceilings, air conditioning equipment and pipework and significantly reduces noise in buildings.

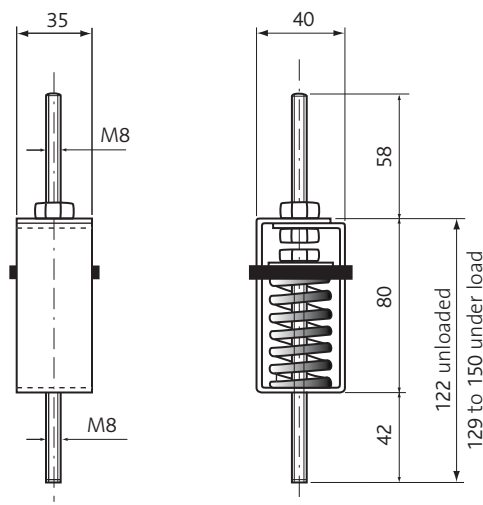
(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

DIMENSIONS

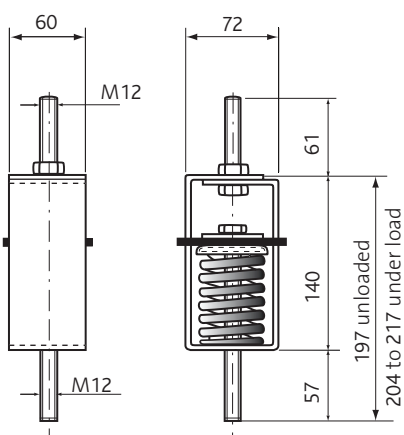
VE101



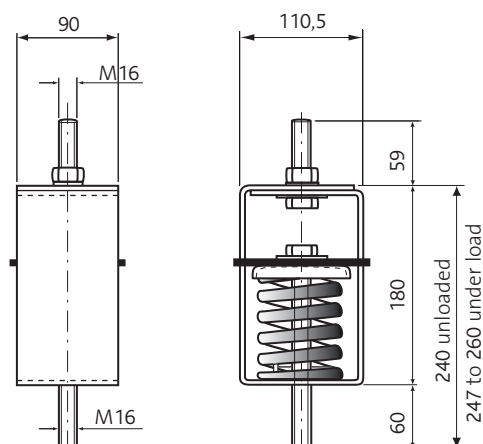
VE111



VE112



VE113



OPERATING CHARACTERISTICS

Reference	Static load (daN)
VE101 - 01	1 to 5
VE101 - 02	4 to 13
VE101 - 03	7 to 20
VE101 - 04	12 to 33
VE101 - 05	19 to 43

Reference	Static load (daN)
VE112 - 01	25 to 70
VE112 - 02	45 to 130
VE112 - 03	85 to 230

Reference	Static load (daN)
VE111 - 01	1 to 5
VE111 - 02	4 to 13
VE111 - 03	7 to 20
VE111 - 04	12 to 33
VE111 - 05	19 to 43

Reference	Static load (daN)
VE113	150 to 420

Vibration characteristics :

- Natural frequency : 3.5 to 6 Hz



VIBCABLE

Natural frequency : (1)
5 to 25 Hz

DESCRIPTION

This range of mounts has a stainless steel cable wound between light alloy bars. The 8010 to 8060 versions are assembled using stainless steel clips and the 8080 to 8140 models have galvanised steel screws.

There are two or four mounting holes, per bar, smooth, counter sunk or tapped.

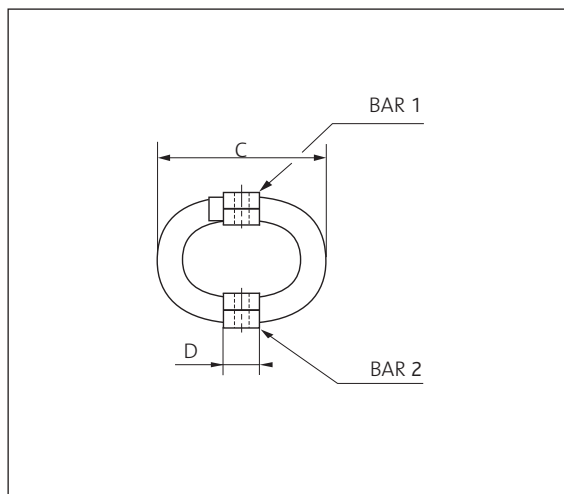
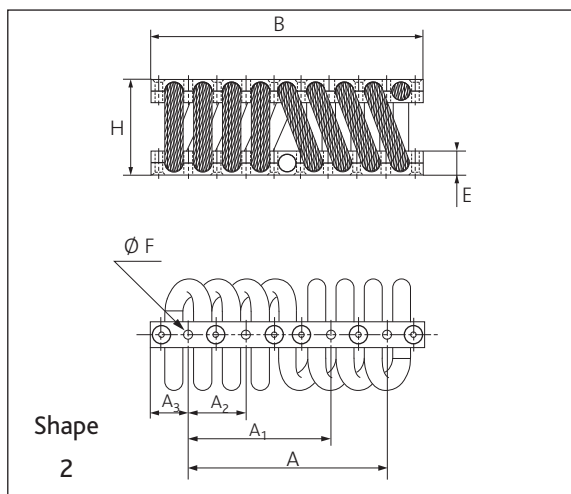
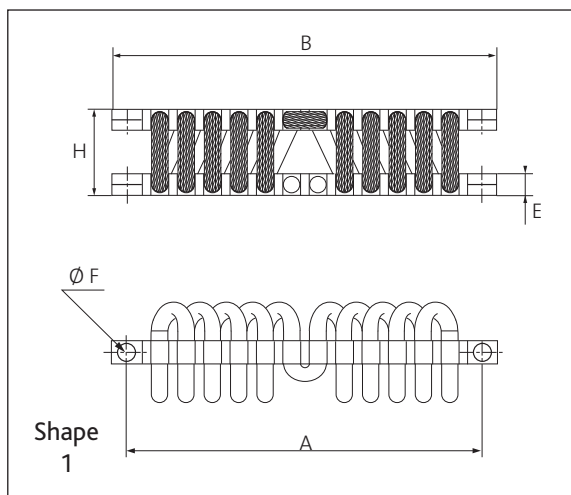
APPLICATIONS

With a natural frequency between 5 and 25 Hz, damping up to 40% and high deflection in all directions, these dampers can absorb accelerations to equipment subjected to shock or drop.

Protection of equipment in containers, protection of racks and any fragile on board equipment.

(1) Natural frequencies with max/min loads, see : OPERATING CHARACTERISTICS.

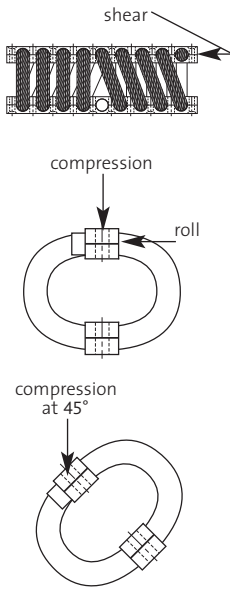
DIMENSIONS



Reference	Shape	A (mm)	B (mm)	C (mm) depending on version		D (mm)	E (mm)	F (mm) (2 fixing holes)		H (mm) depending on version					
				min.	max.			tapped	threaded	01	02	03	04	05	06
V3CA8010-01 to -06	1	68	82	25	38	10	5	4,8	M4	18	26	20	28	30	33
V3CA8020-01 to -06	1	100	112	29	43	12,5	6	5,8	M5	21	31	35	25	28	38
V3CA8030-01 to -06	1	114	127	37	49	14	8	6,5	M6	28	30	33	36	38	41
V3CA8040-01 to -03	1	114	127	37	44	14	8	6,5	M6	28	33	38	-	-	-
V3CA8060-01 to -06	1	114	127	37	95	14	10	6,5	M6	38	43	87	43	31	34
V3CA8080-01 to -06	2	131	146	57	102	16	13	6,5	M6	48	54	60	64	80	90

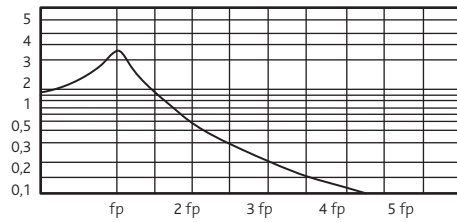
Reference	Shape	A (mm)	A1 (mm)	A2 (mm)	A3 (mm)	B (mm)	C (mm) depending on version		D (mm)	E (mm)	F (mm) (4 fixing holes)		H (mm) depending on version					
							min.	max.			tapped	threaded	01	02	03	04	05	06
V3CA8090-01 to -06	2	156	111	44,5	30	216	80	135	25	16	9	M8	70	74	89	110	68	77
V3CA8100-01 to -06	2	156	111	44,5	30	216	92	150	25	20	9	M8	75	89	95	110	83	108
V3CA8110-01 to -06	2	191	136,5	54,5	38,1	267	102	170	25	25	11	M10	90	95	100	100	110	150
V3CA8120-01 to -04	2	266,5	190,5	76	50,5	370	145	195	40	40	13	M12	135	150	160	160	-	-
V3CA8140-01 to -02	2	378	270	108	70,8	520	224	248	50	50	20	M18	180	218	-	-	-	-

OPERATING CHARACTERISTICS



Reference	Static load range (daN)																	
	Compression						Compression at 45°						Roll/Shear					
Version	01	02	03	04	05	06	01	02	03	04	05	06	01	02	03	04	05	06
V3CA-8010	7	3	5	5	4	4	6	3	4	4	3	3	4	2	3	2	2	2
V3CA-8020	11	20	19	15	74	26	8	14	14	11	13	19	6	10	10	7	9	13
V3CA-8030	17	18	17	13	11	10	13	13	13	10	8	8	9	9	9	7	6	5
V3CA-8040	86	62	40				66	48	31				42	31	20			
V3CA-8060	63	58	19	53	82	100	46	44	15	40	62	75	32	29	10	27	41	50
V3CA-8080	88	62	51	47	25	26	66	47	39	36	19	19	44	31	26	24	13	13
V3CA-8090	194	162	120	82	188	134	147	122	91	62	142	101	97	81	60	41	94	67
V3CA-8100	439	414	481	215	442	290	330	312	363	162	332	218	220	207	240	108	221	145
V3CA-8110	848	682	712	529	486	315	639	532	556	406	366	246	424	342	357	265	243	157
V3CA-8120	1 658	1 396	878	651			1 272	1 055	664	492			331	698	441	320		
V3CA-8140	2 229	2 031					1 687	1 527										

- **Operating temperature :**
- 180 °C to + 300 °C.
- **Electrical resistance :**
with conducting coating < 210° Ω.
- **Environment :**
The material used are unaffected by harsh environments.
- **Vibration transmission coefficient curves :**
For perfectly free system.



The bars can be supplied with smooth, threaded or countersunk holes. Several combinations are possible :

		Bar 1		
		Smooth holes: L	Threaded holes: N	Countersunk holes: F
Bar 2	Smooth holes: L	LL	NL	FL
	Threaded holes: N	LN	NN	FN
	Countersunk holes: F	LF	NF	FF

• **Codification example : V3CA8010-01 LL**

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OTHER METAL SUSPENSIONS MV801 MV803

DESCRIPTION

MV801 and MV803 has a stainless steel wire mesh cushion and spring attached to alumi-nium alloy upper and lower cup with threaded centre holes.

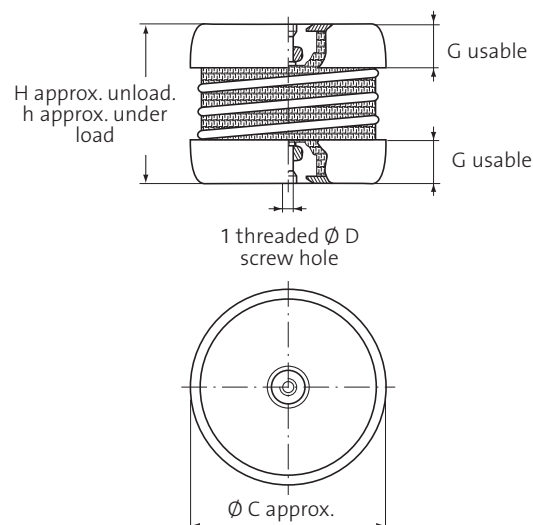
APPLICATIONS

Isolation of low speed stationary rotating machines (fans, electric motors, pumps ...) sensitive equipments (measuring instruments, laboratory equipment ...).

OPERATING CHARACTERISTICS

Reference	Axial static load (daN)
MV801-1CC	0,15 - 0,20
MV801-2CC	0,20 - 0,25
MV801-3CC	0,25 - 0,30
MV801-4CC	0,30 - 0,40
MV801-5CC	0,40 - 0,50
MV801-6CC	0,50 - 0,65
MV801-7CC	0,60 - 0,80
MV801-8CC	0,75 - 1,00
MV801-9CC	0,95 - 1,20
MV801-10CC	1,20 - 1,65
MV801-11CC	1,50 - 2,00
MV801-12CC	1,80 - 2,50
MV801-13CC	2,40 - 3,20
MV803-1CC	1,20 - 1,65
MV803-2CC	1,50 - 2,00
MV803-3CC	1,80 - 2,50
MV803-4CC	2,40 - 3,20
MV803-5CC	3,00 - 4,00
MV803-6CC	3,70 - 5,00
MV803-7CC	4,80 - 6,50
MV803-8CC	6,00 - 8,00
MV803-9CC	7,50 - 10,00
MV803-10CC	9,50 - 13,00
MV803-11CC	12,00 - 16,50
MV803-12CC	15,00 - 20,00
MV803-13CC	18,00 - 25,00

- Natural frequencies :
 - axial } 5 to 10 Hz. depending on load.
 - radial }
- Amplification factor at resonance <5.
- Structural strength corresponds to continuous acceleration of 2 g with maximum load.
- Operating temperature : - 70°C to + 300°C.
- Maximum permitted excitation at natural frequency of suspension :
 - MV801 : ± 0.7 mm.
 - MV803 : ± 1 mm.



Reference	H (mm)	Ø C (mm)	D	G (mm)	h (mm)
MV801	42	26	M4	6	25
MV803	55	40,2	M5	8	34



V1N303 V1N304 V1N305 V1N306 V1N308

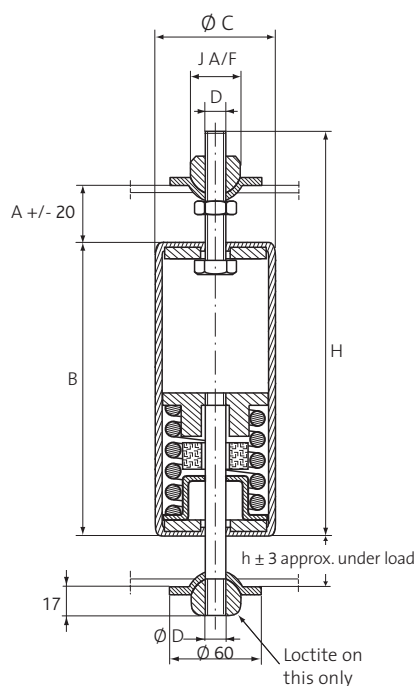
DESCRIPTION

A single acting telescopic anti-vibration manufactured with a helicoil spring and stainless steel woven cushion.
Protection, paint.

APPLICATIONS

Isolation of exhaust sticking and pipework.

OPERATING CHARACTERISTICS



- Maximum permitted excitation at natural frequency of suspension : ± 1 mm.
- Natural frequency for this amplitude :
- axial : 3.5 to 5 Hz depending on load.
- Structural strength corresponds to continuous acceleration of 3 g with maximum load.
- Operating temperature : - 70°C to + 150°C.
- Displacement in all directions : ± 40 mm.
- Adjustment between attachment points : ± 20 mm.

Reference	Static load in traction (daN)	\varnothing of pipes 3 m long (for information only)
V1N303	45 - 85	150 - 300
V1N304	75 - 140	300 - 500
V1N305	120 - 230	500 - 800
V1N306	200 - 380	800 - 1 000
V1N308	270 - 500	1000 - 1200

Reference	A (mm)	B (mm)	\varnothing C (mm)	D	H (mm)	J (mm)	K (mm)	h (mm)
V1N303	40	135	63	M12	210	30	6	35
V1N304	40	155	63	M12	230	30	6	35
V1N305	45	175	82	M16	257	30	8	40
V1N306	45	200	82	M16	282	30	8	40
V1N308	45	220	82	M16	302	30	8	40



V1209

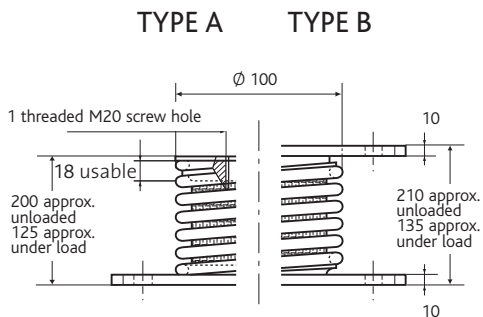
DESCRIPTION

Part of a series of very low frequency isolators working in compression only, giving very efficient isolation for rotating machines running at 250 rpm and above.

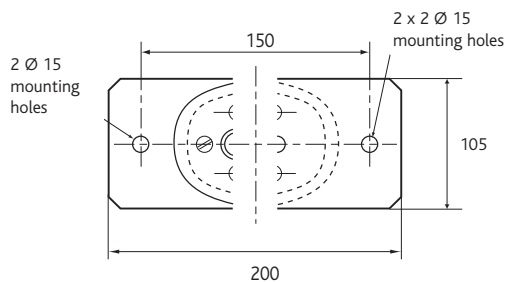
APPLICATIONS

Rotating machinery, hoppers and sensitive equipment with or without the use of inertia blocks.

OPERATING CHARACTERISTICS



- Maximum permitted excitation at natural frequency of suspension : ± 3 mm.
- Natural frequencies for this amplitude :
 - axial } 1,5 to 3,5 Hz depending on load.
 - radial }
- Amplification factor at resonance : < 5 .
- Structural strength corresponds to continuous acceleration of 2 g with maximum load.
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.



With lower mounting plate	With lower and upper mounting plate	Static axial load (daN)
V1209-01A	V1209-01B	60 - 95
V1209-03A	V1209-03B	95 - 150
V1209-05A	V1209-05B	150 - 230
V1209-07A	V1209-07B	210 - 330
V1209-09A	V1209-09B	300 - 460



V1210

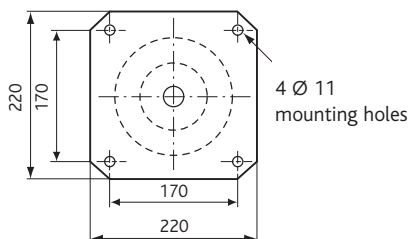
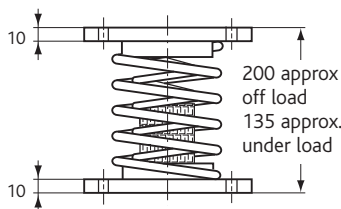
DESCRIPTION

Part of a series of very low frequency isolators working in compression only, giving very efficient isolation for rotating machines running at 250 rpm and above.

APPLICATIONS

Rotating machinery, hoppers and sensitive equipment with or without the use of inertia blocks.

OPERATING CHARACTERISTICS



- Maximum permitted excitation at natural frequency of suspension : ± 3 mm.
- Natural frequencies for this amplitude :
 - axial
 - radial } 1,5 to 3,5 Hz depending on load.
- Amplification factor at resonance : < 5 .
- Structural strength corresponds to continuous acceleration of 2 g with maximum load.
- Operating temperature : $- 70^{\circ}\text{C}$ to $+ 300^{\circ}\text{C}$.

Reference	Static axial load (daN)
V1210-51	460 - 740
V1210-52	550 - 870
V1210-53	700 - 1 100
V1210-54	1 000 - 1 600
V1210-55	1 300 - 1 960



V1B-5984-01 V1B-5984-11

DESCRIPTION

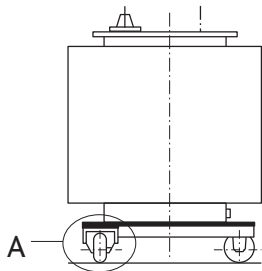
The assembly comprises :

- two metal cushions;
- a nut;
- two Belleville washers.
- a threaded centre axis;
- two flat washers;

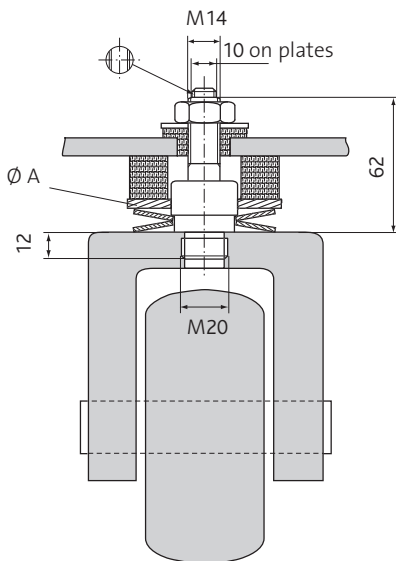
APPLICATIONS

Mountings for transformers with a locking system for use in transit.

OPERATING CHARACTERISTICS



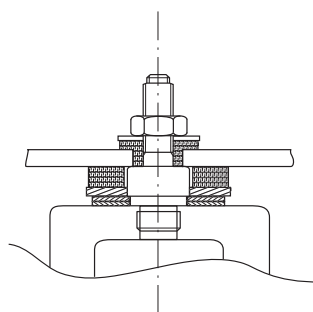
ENLARGEMENT POINT A



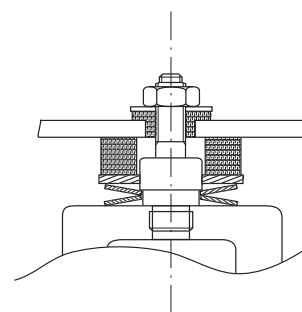
- Natural frequencies :
 - axial
 - radial } 10 to 15 Hz depending on load.
- Attenuation 100 Hz > 90%.
- Good resistance to oil.
- Electrically conductive.

Reference	Static load (daN)	Locking torque (N.m) (for use when transformer in transit)	Ø A (mm)
V1B-5984-01	930	90	65
V1B-5984-11	1 500	100	75

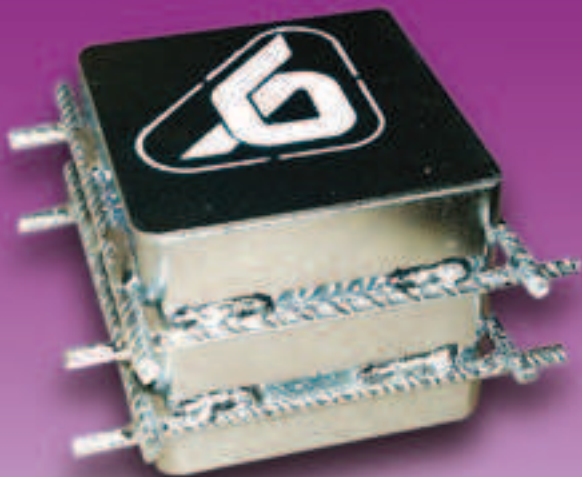
Torque when transformer in use for both types = 0 N.m.



Locked position during transit



Unlocked position transformer in use



VIBRAFLOT® 357-961

DESCRIPTION

VIBRAFLOT® is an antivibration system consisting of the following elements :

- Metallic box containing a low frequency spring.
- Elastomer sheet to isolate high frequencies.
- System to lift the floating floor and set its height

APPLICATIONS

Typical applications for floating floor in buildings :

- Theatres
- Ground floor shops
- Concert theatres
- Hospital
- Laboratories
- Sports & dance halls
- Cinemas
- Thalasso, Spas
- Discotechs
- Technical areas
- Hotels
- Auditoriums, Conference halls
- Recording studios
- Railway lines
- Luxury apartments
- Alleys



ADVANTAGES

Low natural frequency.

- High level of vibration attenuation.
- Improved stability of the suspension and reduced vibration amplitude.
- Improved operational life for suspended machinery.
- Integrated system controlling the height of the floor.
- Mounts are accessible if modifications are required.

FUNCTION

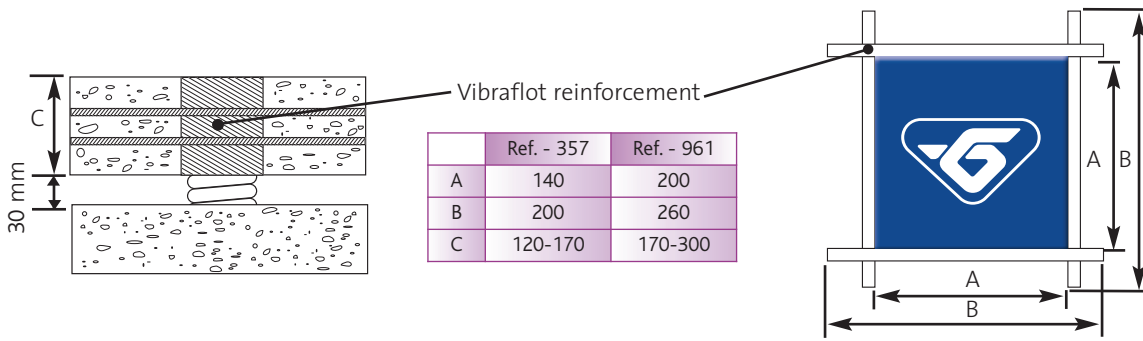
Low natural frequency.

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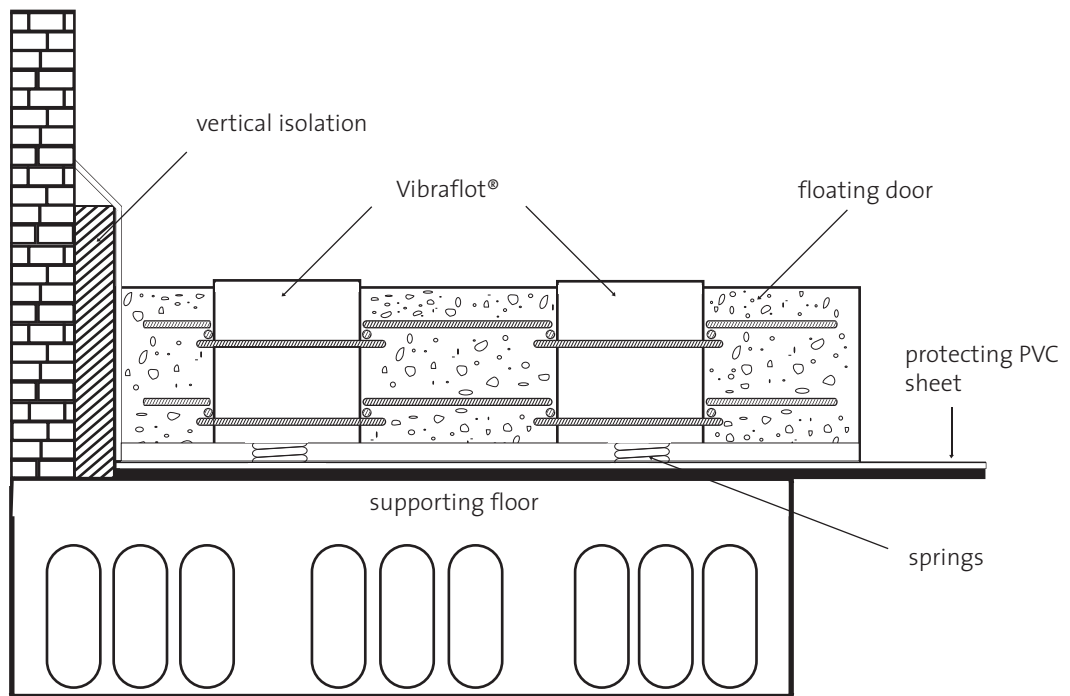
TECHNICAL CHARACTERISTICS

Static load	From 300 daN to 2.000 daN by box
Natural frequency	3 to 6 Hz
Elastic limit	2 - 4 g in vertical 1,2 g in horizontal
Concrete thickness	From 120 to 300 mm

DIMENSIONS



TYPICAL MOUNTING ARRANGEMENT







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