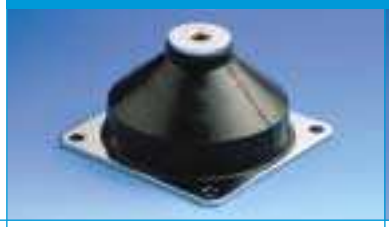
STOP-CHOC

Каталог силиконовых демпферов

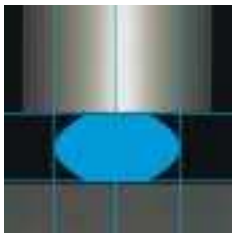
APPLICATION GUIDE FOR THE ELASTOMER RANGE

APPLICATIONS	VIBMAR*	ARDAMP®
		
MOBILE OR STATIC FANS	■	
MOBILE OR STATIC AIR CONDITIONERS	■	
COMPRESSORS	■	
MOBILE OR STATIC GENERATOR SETS	■	
INTERNAL COMBUSTION ENGINES	■	
LABORATORY EQUIPMENT	■	■
MOBILE OR STATIC ELECTRICAL ENCLOSURES	■	■
FRAGILE EQUIPMENT IN CONTAINERS	■	
COMPUTER EQUIPMENT		■
SHIPBOARD ELECTRONIC EQUIPMENT		■
PROTECTION AGAINST SHOCKS AND BUMPS	■	■

* See Navy shock mountings range.

APPLICATION GUIDE FOR THE ELASTOMER RANGE

SPECIAL PACKAGING	SPECIAL ELECTRONICS	APPLICATIONS
		
		MOBILE OR STATIC FANS
		MOBILE OR STATIC AIR CONDITIONERS
		COMPRESSORS
		MOBILE OR STATIC GENERATOR SETS
		INTERNAL COMBUSTION ENGINES
		LABORATORY EQUIPMENT
		MOBILE OR STATIC ELECTRICAL ENCLOSURES
■		FRAGILE EQUIPMENT IN CONTAI-NERS
	■	COMPUTER EQUIPMENT
	■	SHIPBOARD ELECTRONIC EQUIPMENT
■		PROTECTION AGAINST SHOCKS AND BUMPS



ARDAMP®

(1) Natural frequency: 10 to 25 Hz

DESCRIPTION

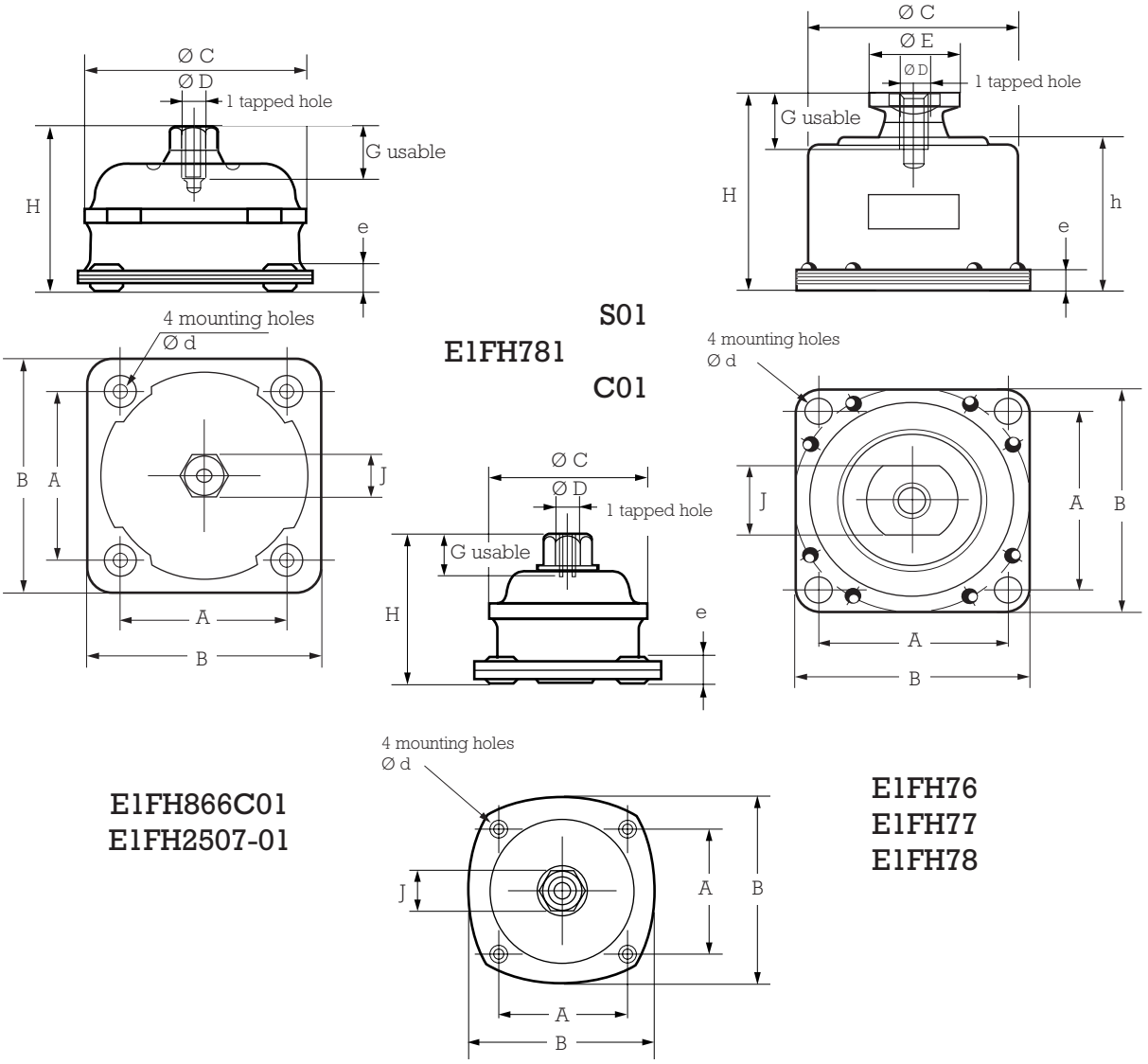
The ARDAMP series dampers have a spring and piston embedded in high viscosity silicone rubber gel which itself is embedded in an elastomer membrane bonded to the case.

APPLICATIONS

Due to their high performances and high shock damping capacity ARDAMP dampers are designed to protect fragile electronic equipment, control panels and measuring instruments on ground vehicles, aircrafts, helicopters, civil and military submersible crafts.

(1) Natural frequency with max. load, see chapter: OPERATING CHARACTERISTICS.

DIMENSIONS



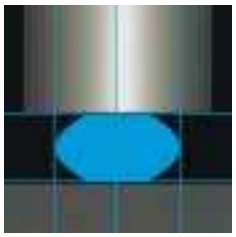
Reference	H Unload. mm	H approx. under load mm	Ø A mm	B mm	C mm	D	E mm	G maxi mm	J mm	Ø d mm	e mm	h mm	Weight approx.
E1FH781S01 **E1FH781C01**	42 43	39 41	35	54	43	M5		10	12	4.5	5.5		120 g
E1FH866C01 **E1FH2507-01**	47	46	49.2	65.3	61.5	M6		15	12	5.2	5		230 g 215 g
E1FH76-01 **E1FH76-02**	70 67	66 65	63.5	77	70	M10	30	19	24	8.4	7.2	49	390 g
E1FH77-01	86	82	88	110.5	96	M12	40	24	34	8.4	8.5	62	930 g
E1FH78-01 **E1FH78-02**	102 98	99 95	107.9	132	117	M16	54	25	44	11	9.5	77.5	1.5 kg

OPERATING CHARACTERISTICS

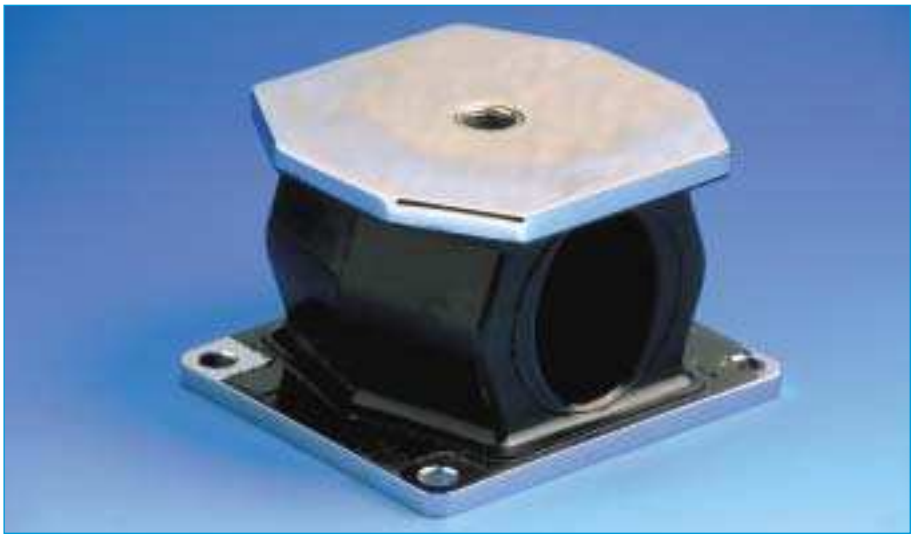
Natural frequency:
axial: 10 to 25 Hz
radial: 10 to 20 Hz.

Damping: 20% c/cc (E1FH781, 866, 2507-01).
17% c/cc (E1FH76, 77, 78).
Amplification factor at resonance: 2.5 to 3 max.
These dampers comply with SEFT 001A, AIR 7304, MIL STD 810 C.

	SEFT 001 A			AIR 7304			MIL STD 810 C		Non standard applications		Shocks and bumps OZ axis	
Reference	Load kg per damper	Axial Fn in Hz	Radial Fn in Hz	Load kg per damper	Axial Fn in Hz	Radial Fn in Hz	Load kg per dam-per	Axial Fn in Hz	Load kg per dam-per	Radial Fn in Hz	6 ms ½ sine shocks max input g	11 ms ½ sine shocks max input g
E1FH781S01 **E1FH781C01**				0.2-2 2-5	20-25	15-20	4	16	1.5-3.5 3.5-8	10-20	70 g	38 g
E1FH866C01 **E1FH2507-01**	8-15 -	10-20 -	12-20 -	6-8 -	20-25 -	15-20 -	8 -	20 -	8-15 5-8	10-20 6-10	50 g -	27 g -
E1FH76-01 **E1FH76-02**	14-20 18-30	10-20	12-20 11-16	7-12 9-20	20-25	15-20	14 18	18 17	14-20 18-30	10-20	40 g 55 g	22 g 30 g
E1FH77-01	20-50	10-20	10-17				30	15	20-50	10-20	50 g	25 g
E1FH78-01 **E1FH78-02**	50-100 90-130	10-20	10-16 10-15				75 100	10 11	50-100 90-130	10-20	40 g	22 g



E1C2321
E1T2105
SPECIAL PACKAGING



(1) Natural frequency: 10 to 25 Hz

DESCRIPTION

The special packing dampers have a flexible elastomer element designed for various applications, bonded to two steel mounting plates.

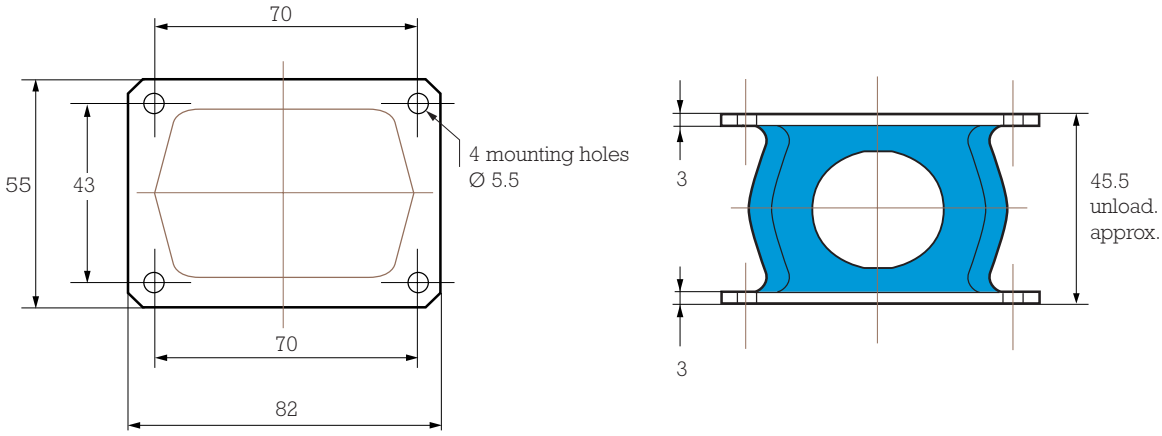
APPLICATIONS

These multi-directional dampers allow considerable deflection to protect equipment transported in containers against drops and transport shocks (missiles, aeronautical equipment).
These dampers are also suitable for suspending equipment to be protected against shocks and vibrations caused by explosions or earthquakes.

(1) Natural frequency with max. load, see chapter: OPERATING CHARACTERISTICS.

E1C2321

DIMENSIONS



OPERATING CHARACTERISTICS

Natural frequency:
axial: 10 to 25 Hz
radial: 10 to 25 Hz.

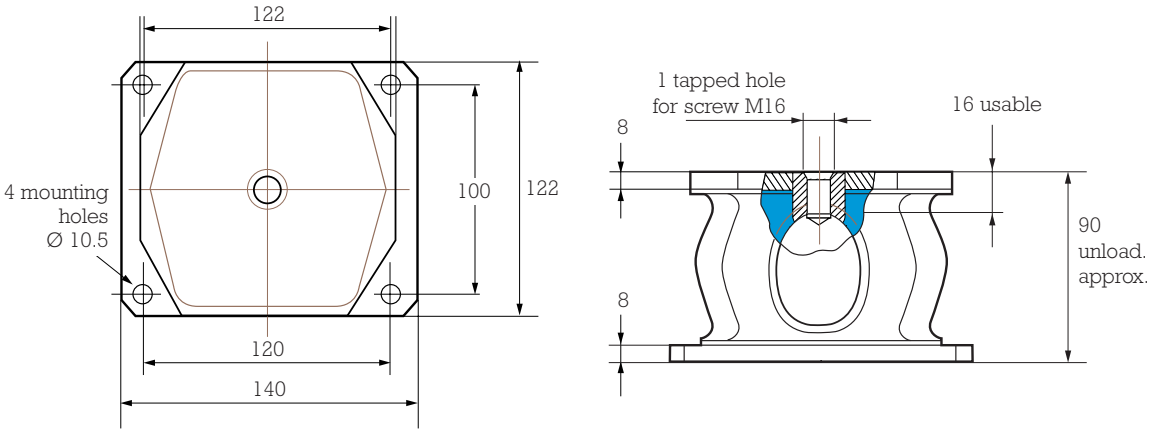
Maximum permitted excitation at natural frequency of suspension: ± 1.6 mm.
Maximum travel available for shocks: - axial 15 mm.
- radial 40 mm.
Operating temperature: see table.
Weight: 0.3 kg.

Reference	Axial static load in daN	Damping	Resistance to oils and hydrocarbons	Resistance to fatigue	Operating temperature	Material (1)
E1C2321S01	1-10	***	*	*	- 54 to + 150°C	SIL 33 Sh
E1C2321S02	2-20					SIL 55 Sh
E1C2321-01	2-20	*	**	***	- 30 to + 100°C	CR 60 Sh
E1C2321-02	5-50					CR 70 Sh
E1C2321-03	10-100					CR 75 Sh
E1C2321-21	2-20	***	*	***	- 40 to + 90°C	BR 60 Sh
E1C2321-22	5-50					BR 70 Sh
E1C2321-23	10-100					BR 80 Sh

(1) SIL: Silicone; CR: Chloroprene-Rubber; BR: Butadiene-Rubber.

1 kg ≃ 1 daN

DIMENSIONS



OPERATING CHARACTERISTICS

Natural frequency:

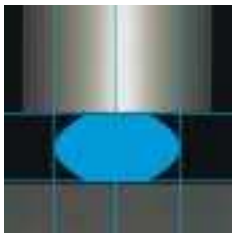
axial: 10 to 25 Hz
radial: 10 to 25 Hz.

Maximum permitted excitation at natural frequency of suspension: ± 1.6 mm.
Maximum travel available for shocks: - axial 40 mm.
- radial 75 mm.

Operating temperature: see table.
Weight: 2.6 kg.

Reference	Axial static load daN	Damping	Resistance to oils and hydrocarbons	Resistance to fatigue	Operating temperature
E1T2105S01 **E1T2105S02**	2-20 4-40	***	*	*	- 54 to + 150°C
E1T2105-41 **E1T2105-42** **E1T2105-43**	10-100 20-200 50-400	*	***	**	- 25 to + 90°C
E1T2105-21 **E1T2105-22** **E1T2105-23**	10-100 20-200 50-400	***	*	***	- 40 to + 90°C

1 kg ≃ 1 daN



ELASTOMER MOULDED PARTS

SILICONE RUBBER / SPECIAL ELECTRONICS

CHARACTERISTICS

These parts are usually supplied in VHDS (very high density silicone) rubber and the full reference should include:

- the letter S,
- the appropriate grade which corresponds:
  to the youngs modulus of the rubber under static compression in accordance with ASTM D945 (ref. 33 to 77),
  or to the stiffness measured on a part (ref. 16 to 25).

These standard VIBRACHOC grades are shown in the following table:

Reference	Colour	Characteristics		
		G: Shear modul. (MPa)	E: Elast. modul. (MPa)	Stiffness (1)(2) (N/mm)
		Tolerance: ± 15%		Tolerance: ± 10%
16 20 25	yellow dark blue black			19 20 25
33 38 42 48 55 63 72 77	light blue grey brown dark green brick red orange light green ultramarine blue	0.4 0.47 0.53 0.6 0.67 0.8 1 1.1	1.2 1.4 1.6 1.8 2.0 2.4 3.0 3.3	36 40 45 50 55 65 75 100

(1) measured on standardised Ø 19 - h 12.7 mm high part.
(2) linear region between 1 to 3 mm compression.

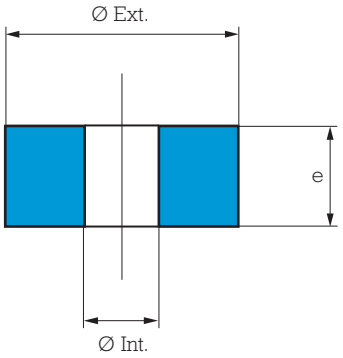
1 kg ≃ 1 daN

Example: E3RP0754S55 flat washer internal diameter 7, external diameter 30, height 6, in VHDS silicone, young modulus 2 MPa; washer colour: brick red.

Other elastomers may be used: natural rubber, neoprene, EPDM, butyl rubber, nitrile rubber.

DIMENSIONS

FLAT WASHERS

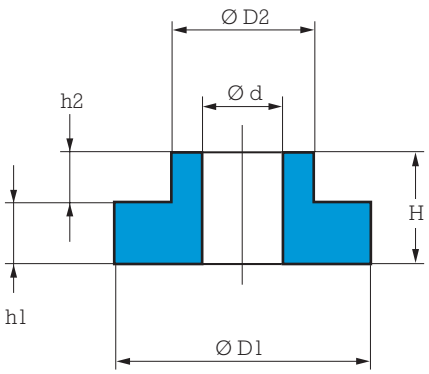


Reference	Ø Int. mm	Ø Ext. mm	e mm
E3RP2439	2	6	10
E3RP3419	2	7	1
E3RP2062	4	8	5
E3RP3291	4	9	3.4
E3RP2061	4	12	4
E3RP2667	5	12	5
E3RP2025	5	15	4
E3RP2024	5	22	4
E3RP2401	6	18	6
E3RP2282	6.1	12	6
E3RP2281	6.1	20	4
E3RP2959	6.4	12	3
E3RP2453	6.5	11.8	2.5
E3RP2403	6.5	13.5	10
E3RP3534	6.5	15	4.5
E3RP2402	6.5	18	14.5
E3RP3162	6.5	25	2
E3RP2882	7	12	4
E3RP0590	7	12	6
E3RP2883	7	16	6
E3RP0591	7	16	8
E3RP2404	7	30	3
E3RP0754	7	30	6
E3RP2148	7.4	11.5	7.5
E3RP2149	7.6	17.6	6
E3RP2454	7.7	11.8	7.7
E3RP2406	8	13	4
E3RP2405	8	16	4
E3RP0607	8	18	6
E3RP0608	8	18	8
E3RP0588	8	22	4
E3RP0777	8	24	4
E3RP2436	8	26	6
E3RP0609	8	26	10
E3RP2045	8.5	26	4

Reference	Ø Int. mm	Ø Ext. mm	e mm
E3RP2604	9	13	4
E3RP2605	9	19	4
E3RP2330	9	36	6
E3RP2181	9.5	20	6
E3RP2570	9.5	24	4
E3RP2446	9.5	26	4
E3RP3500	10	18	4
E3RP0613	10	20	6
E3RP2346	10	21	6
E3RP2437	10	22	4
E3RP0584	10	22	6
E3RP2345	10	24	6
E3RP2645	10	25	4
E3RP0614	10	26	6
E3RP0615	10	26	12
E3RP2435	10	30	6
E3RP0644	10	30	12
E3RP0585	10	34	6
E3RP0643	10	34	8
E3RP0586	10	34	12
E3RP2329	11	36	4
E3RP2328	11	36	6
E3RP0694	12	17	4
E3RP0695	12	18	4
E3RP0738	12	50	12
E3RP2407	14	22	6.5
E3RP3222	14	30	3
E3RP2408	16	29	7
E3RP2409	20	32	10.5
E3RP3532	20	38	3
E3RP0782	21	29	5
E3RP2434	22	38	17
E3RP0744	31	36	3
E3RP0745	36	44	3
E3RP2341	44.5	83	3.2

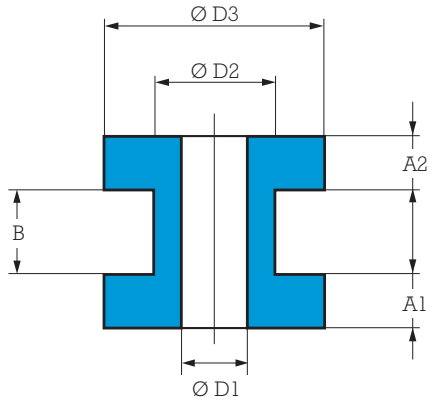
DIMENSIONS

FLANGED WASHERS



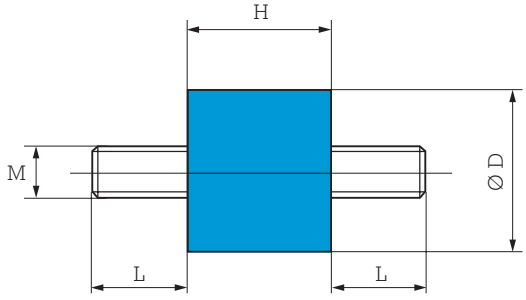
Reference	Ø d mm	Ø D1 mm	Ø D2 mm	H mm	h1 mm	h2 mm
E3RP0712	3.5	10	7.5	4.7	3.2	1.5
E3RP2292	3.5	13	6	7	3.3	3.7
E3RP3290	4	9	6	5.4	3.4	2
E3RP0647	4.2	8	5.8	3.3	1.7	1.6
E3RP0997	5	18	10	24	14	10
E3RP2192	6	12	8.5	7	4	3
E3RP2410	6	18	10	10	6	4
E3RP3533	6.5	15	11	8	4.5	3.5
E3RP0755	7	30	17	14	6	8
E3RP2374	8	18	12	6	3	3
E3RP2379	8	18	13	3.5	2	1.5
E3RP0563	8	19.8	13.8	7	2	5
E3RP2173	8	21	13	6	4	2
E3RP0778	8	24	14	8	4	4
E3RP2042	8.5	26	17	8	4	4
E3RP3491	9.5	24	18	8	4	4
E3RP3490	10	18	14	8	4	4
E3RP0553	11	24	17	9	4	5
E3RP0575	12	50	28	22	12	10
E3RP2315	16	50	28	22	12	10

GROMMETS

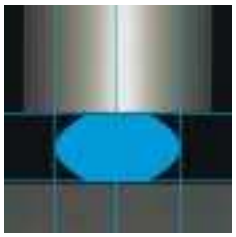


Reference	Ø D1 mm	Ø D2 mm	Ø D3 mm	A1 mm	A2 mm	B mm
E3RP2364	4	6	8	2.2	2.2	1.6
E3RP0648	4.2	5.8	8	1.7	1.7	1.6
E3RP0576	5	8	12	2	2	4
E3RP3295	8	12	18	5.5	5.5	3
E3RP3258	8	12	18	5.5	5.5	6

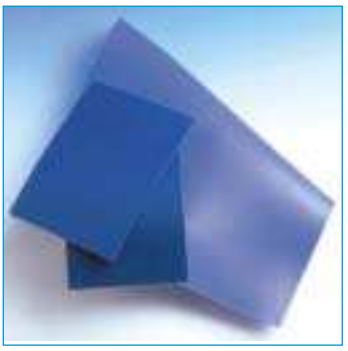
THREADED STUDS



Reference	Ø D mm	H mm	L mm	M
E3RP0953	10	8	6	M3
E3RP0956	12	8	6	M3
E3RP2118	16	16	8/9.5	M5
E3RP0757	20	23	12	M5
E3RP0954	33	26	13.2	M6
E3RP0708	33	39	13.2	M6
E3RP0686	33.2	53.5	12	M6



ELASTOMER PLATES E3PEPL



SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

VHDS elastomer sheet.

APPLICATIONS

These sheets may be used for making grommets, washers or anti-vibration mountings for equipment.
There is a wide range of VIBRACHOC moulded parts, but in certain cases, such as prototypes - undefined specification, etc, it is often advantageous to determine the suspension using elastomer components cut from sheet and bonded.

CHARACTERISTICS

Overall tolerances:
- on the lengths: ± 5%
- on the thickness: ± 3%

SHAPE	DIMENSIONS mm	THICKNESS mm
SQUARE	300 X 300	2, 3, 4, 5, 6, 8, 10

VIBRACHOC plates should be ordered using the following reference:

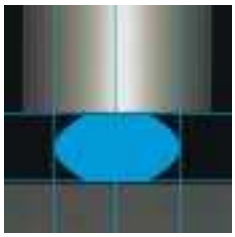
E3PEPL ❑ ❑ S ❑ ❑ C ❑ ❑ ❑

1 2 3

1: dimension in cm.
2: grade (see. table page 126).
3: thickness in 1/10 mm.

For example: E3PEPL30S55C060 =
square plate 300 X 300 mm.
6 mm thick VHDS rubber compound.
grade 55.

For other shapes, sizes or materials, ask us for details.



E1E11S**E*
E1E12S**E*
E1E13S**E*

(1) Natural frequency: 20 to 25 Hz

SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

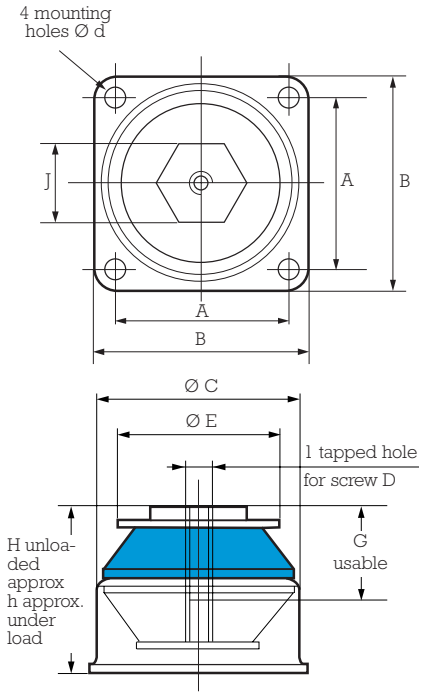
- VHDS elastomer able to carry loads under compression and traction.
- Pedestal, washer and shaft in stainless steel.

APPLICATIONS

- Protecting electronic equipment, navigation equipment, instrument panels, measuring instruments, control panels on aircraft, road vehicles and railway trains.

CHARACTERISTICS

Natural frequency:
axial: 20 to 25 Hz
radial: 20 to 25 Hz.
Maximum permitted excitation at natural frequency of suspension: ± 0.5 mm.
Amplification factor at resonance < 5.
Operating temperature: - 54°C to + 150°C.
Structural strength corresponds to a continuous acceleration of 10 g at maximum load.
Maximum axial travel available for shock:
E1E11: + 4mm / E1E12: + 5 mm / E1E13: + 7 mm.
Weight: E1E11: 60 g / E1E12: 120 g / E1E13: 225 g.

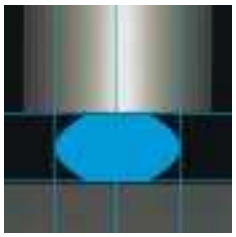


Reference	Axial static loads in daN
E1E11S38EC	1.60 - 2-80
E1E11S42EC	1.80 - 3.20
E1E11S48EC	2.10 - 3.80
E1E11S55EC	2.50 - 4.50
E1E11S63EC	3.00 - 5.30
E1E11S72EC	3.50 - 6.20
E1E12S38ED	3.70 - 5.70
E1E12S42ED	4.00 - 6.30
E1E12S48ED	4.60 - 7.10
E1E12S55ED	5.20 - 8.10
E1E12S63ED	6.00 - 9.30
E1E12S72ED	6.60 - 10.30
E1E13S38EE	5.50 - 8.50
E1E13S42EE	6.00 - 9.50
E1E13S48EE	6.50 - 10.50
E1E13S55EE	7.50 - 12.00
E1E13S63EE	8.50 - 14.00
E1E13S72EE	10.00 - 16.00

1 kg ≃ 1 daN

Reference	A mm	B mm	Ø C mm	D	Ø E mm	H mm	J mm	Ø d mm	h mm	G mm
E1E11S ❑❑ EC	25.4	34	28.5	M5	23	29	14	4.3	28	10
E1E12S ❑❑ ED	34.9	44.4	40	M6	34.6	35.6	19	4.3	34.5	12
E1E13S ❑❑ EE	49.2	60.5	57	M8	45	47	23	5.3	45.5	16

(1) Natural frequency with max. load, see chapter: CHARACTERISTICS.



E1E11S**AL
E1E12S**AL
E1E13S**AL

(1) Natural frequency: 20 to 25 Hz

SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

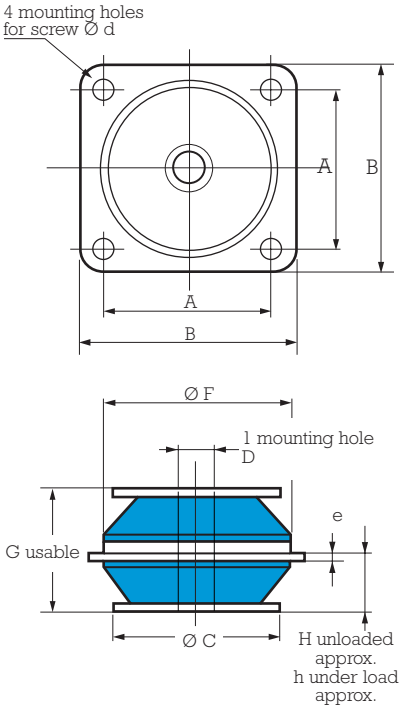
- VHDS elastomer able to carry loads under compression and traction.
- Flange, washer and shaft in steel.

APPLICATIONS

- Protecting electronic equipment, navigation equipment, instrument panels, measuring instruments, control panels on aircraft, road vehicles and railway trains.

CHARACTERISTICS

Natural frequency:
axial: 20 to 25 Hz
radial: 20 to 25 Hz.
Maximum permitted excitation at natural frequency of suspension: ± 0.5 mm.
Amplification factor at resonance < 5.
Operating temperature: - 54°C to + 150°C.
Structural strength corresponds to a continuous acceleration of 10 g at maximum load.
Maximum axial travel available for shocks:
E1E11: + 4mm / E1E12: + 5 mm / E1E13: + 7 mm.
Weight: E1E11: 25 g / E1E12: 75 g / E1E13: 225 g.

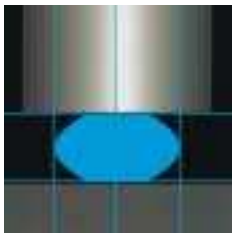


Reference	Axial static loads in daN
E1E11S38AL	1.60 - 2-80
E1E11S42AL	1.80 - 3.20
E1E11S48AL	2.10 - 3.80
E1E11S55AL	2.50 - 4.50
E1E11S63AL	3.00 - 5.30
E1E11S72AL	3.50 - 6.20
E1E12S38AL	3.70 - 5.70
E1E12S42AL	4.00 - 6.30
E1E12S48AL	4.60 - 7.10
E1E12S55AL	5.20 - 8.10
E1E12S63AL	6.00 - 9.30
E1E12S72AL	6.60 - 10.30
E1E13S38AL	5.50 - 8.50
E1E13S42AL	6.00 - 9.50
E1E13S48AL	6.50 - 10.50
E1E13S55AL	7.50 - 12.00
E1E13S63AL	8.50 - 14.00
E1E13S72AL	10.00 - 16.00

1 kg ≃ 1 daN

Reference	A mm	B mm	Ø C mm	Ø F mm	G mm	Ø d mm	e mm	H mm	h mm	Ø D mm
E1E11S ❑❑ AL	25.4	32	23	25.4	19	3.6	1.5	10	9	5.2
E1E12S ❑❑ AL	34.9	44.5	34.6	38.7	25.4	4.2	1.8	11.5	10.5	6.7
E1E13S ❑❑ AL	49.2	80.5	45	53	38	5.3	2.5	17.75	16.5	8.3

(1) Natural frequency with max. load, see chapter: CHARACTERISTICS.



E1E21
E1E22
E1E23

(1) Natural frequency: 20 to 25 Hz

SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

- VHDS elastomer.
- Flange and shaft in 18/8 stainless steel.

Two Ø C fail safe rings must be provided.

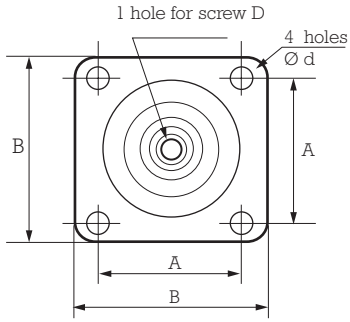
APPLICATIONS

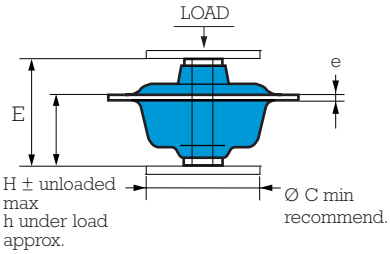
- Protecting electronic equipment, navigation equipment, instrument panels, measuring instruments, control panels on aircraft, road vehicles and railway trains.

CHARACTERISTICS

Natural frequency:
axial: 15 to 25 Hz
radial: 20 to 35 Hz.

Maximum permitted excitation at natural frequency of suspension: ± 0.5 mm.
Amplification factor at resonance < 4.
Operating temperature: - 54°C to + 150°C.
Structural strength corresponds to a continuous acceleration of 10 g at maximum load.
Maximum axial travel available for shock:
E1E21: ± 4 mm for f min / E1E22: ± 4.5 mm for f min
± 6 mm for f max ± 6 mm for f max.
Weight: E1E21: 9 g / E1E22: 25 g / E1E23: 63 g.



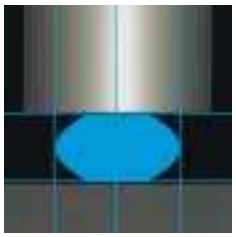


Reference	A mm	B mm	Ø C mm	D	E mm	Ø d mm	e mm	H mm	h mm
E1E21S ❑❑ AL	25.4	32	24	M4	19	3	0.8	12.5	11
E1E22S ❑❑ AL	34.9	44.5	28	M5	25.4	4	1.5	16.5	15
E1E23S ❑❑ AL	49.2	60.5	42	M6	36	5	2	22	20

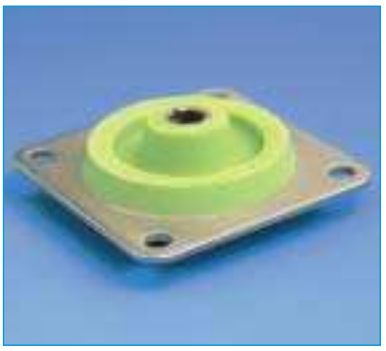
Reference	Axial static loads in daN	Frequency in Hz	Axial static loads in daN	Frequency in Hz
E1E21S38AL E1E21S63AL E1E21S77AL	0.15-0.40 0.30-0.90 0.40-1.20	15-20	0.10-0.15 0.20-0.30 0.26-0.40	20-25
E1E22S38AL E1E22S63AL E1E22S77AL	0.40-1.00 0.70-1.70 0.90-2.20	12-18	0.20-0.40 0.40-0.70 0.50-0.90	18-25
E1E23S42AL E1E23S77AL	0.40-1.20 1.00-2.90	10-15		

1 kg ≃ 1 daN

(1) Natural frequency with max. load, see chapter: CHARACTERISTICS.



E1E31
E1E32



(1) Natural frequency: 20 to 25 Hz

SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

- VHDS elastomer.
- Flange and shaft in 18/8 stainless steel.

Two Ø C fail safe rings must be provided.

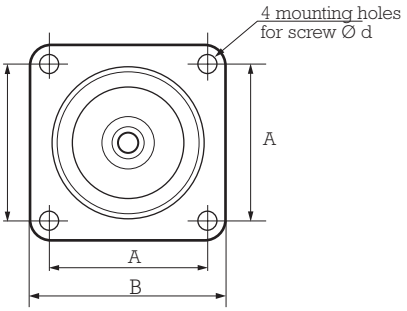
APPLICATIONS

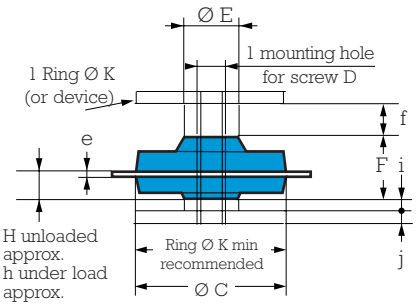
- Protecting electronic equipment, navigation equipment, instrument panels, measuring instruments, control panels on aircraft, road vehicles and railway trains.

CHARACTERISTICS

Natural frequency:
axial: 15 to 25 Hz
radial: 20 to 35 Hz.

Maximum permitted excitation at natural frequency of suspension: ± 0.5 mm.
Amplification factor at resonance < 4.
Operating temperature: - 54°C to + 150°C.
Structural strength corresponds to a continuous acceleration of 10 g with maximum load.
Maximum axial travel available for shocks:
E1E 31: ± 4 mm for f min
± 6 mm for f max.
E1E 32: ± 4.5 mm for f min
± 6 mm for f max.
Weight: E1E31: 9 g / E1E32: 25 g.



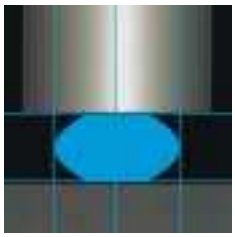


Reference	Axial static loads in daN	Frequency in Hz	Axial static loads in daN	Frequency in Hz
E1E31S38AL	0.20-0.70	15-20	0.20-0.40	20-25
E1E31S55AL	0.30-1.00		0.30-0.50	
E1E31S77AL	0.50-1.70		0.50-0.90	
E1E32S38AL	0.30-1.10		0.30-0.70	
E1E32S55AL	0.60-1.80		0.60-1.10	
E1E32S77AL	0.80-2.60		0.80-1.60	

1 kg ≃ 1 daN

Reference	A mm	B mm	Ø C mm	D	Ø E mm	F mm	J mm	K mm	d mm	e mm	f (mm) Min	f (mm) Max	H mm	j (mm) Min	j (mm) Max	h mm
E1E31S ❑❑ AL	25.4	32	25	M4	8.5	10.5	2	25	3.6	1	3.2	5	4.5	0	1.75	3.5
E1E32S ❑❑ AL	34.9	44.5	35	M5	13	14.5	3	35	4.3	1.5	4.5	7	6.2	0	2.5	5

(1) Natural frequency with max. load, see chapter: CHARACTERISTICS.



E1E41
E1E42
E1E43

(1) Natural frequency: 10 to 25 Hz

SILICONE RUBBER / SPECIAL ELECTRONICS

DESCRIPTION

- VHDS elastomer able to carry loads under compression.
- Base and centre axis in stainless steel.

APPLICATIONS

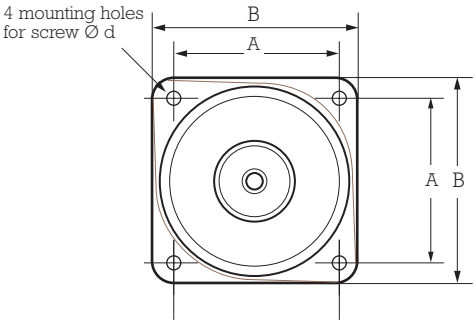
- Protecting electronic equipment, navigation equipment, instrument panels, measuring instruments, control panels on aircraft, road vehicles and railway trains.

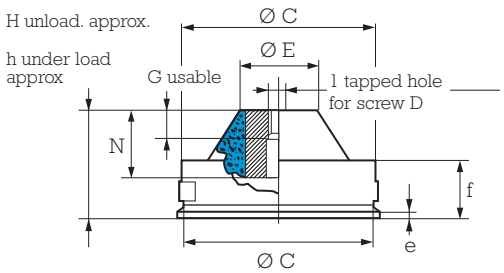
CHARACTERISTICS

Natural frequency:

axial and radial: 10 to 25 Hz.

Maximum permitted excitation at natural frequency of suspension: ± 0.5 mm.
Amplification factor at resonance < 4.
Operating temperature: - 54°C to + 150°C.
Structural strength corresponds to a continuous acceleration of 10 g at maximum load.
Maximum axial travel available for shocks:
E1E41: 8.8 mm / E1E42, E1E43: 12 mm.
Weight: E1E41: 22 g / E1E42: 60 g / E1E43: 96 g.





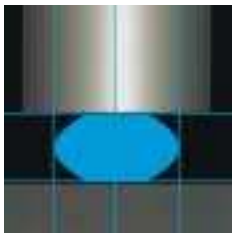
Reference	Axial static loads in daN
① E1E41-S38EB	1.20-2.10
① E1E41-S63EB	2.00-3.80
① E1E41-S77EB	3.00-5.20
E1E42-S38EC	1.75-3.30
E1E42-S63EC	3.20-5.90
E1E42-S77EC	4.40-8.30
E1E43-S38ED	3.10-5.50
E1E43-S63ED	5.40-10.80
E1E43-S77ED	7.50-13.60

① These isolators exist with an oval flange (FB).

1 kg ≃ 1 daN

Reference	A mm	B mm	Ø C mm	D	Ø E mm	G mm	H mm	N mm	d mm	e mm	f mm	h mm
E1E41- ❑❑ EB	25.4	34	30,5	M4	10	6	23	14.2	4.3	0.8	14	21
E1E42- ❑❑ EC	34.9	43	41.5	M5	12	8	33	20	4.3	1.5	18	31
E1E43- ❑❑ ED	49.2	60.5	57	M6	21.5	8	33	20	5.3	2	16	31

(1) Natural frequency with max. load, see chapter: CHARACTERISTICS.



PNEUMATIC MOUNTS SLM

(1) Natural frequency: 3 to 5 Hz

DESCRIPTION

SLM pneumatic mounts are made from synthetic rubber and are laterally reinforced with steel springs.

The base plate is bored with 4 smooth holes to allow a possible fixing on the ground and the valve allows to inflate the mount in the same way as an automobile tyre.

Elastomer body (temperature range - 30°C to + 80°C) resistant to oils, the majority of solvents and natural ageing.

The top and bottom plates are available in both steel and aluminium.

OPERATION

The design of SLM mounts gives the following basic characteristics:

In the event of pressure loss, the machine will rest on the elastomer body. The load capacity of the mounting remains unchanged.

The ratio of horizontal rigidity and vertical rigidity of the SLM is 1:1, which allows excellent stability.

Advantages:

Eight sizes, capacity range of 10 daN to 10000 daN.

Allow you to level the machine gradually while varying the air pressure.

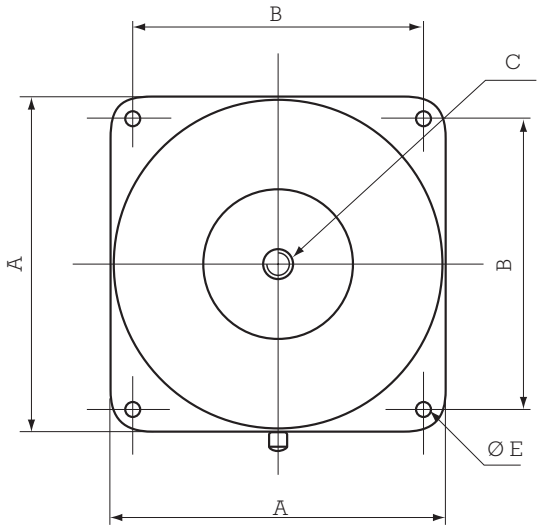
Possibility of varying the natural frequency, by varying the air pressure.

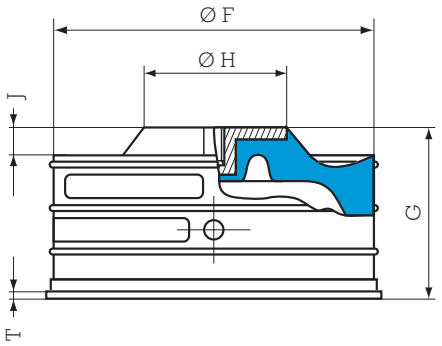
APPLICATIONS

Industrial plants, compressors, conveyors, vacuum pumps, generators, air-conditioners, diesel engines, ventilators, presses with fast cycle, machine tools.
Metrology: measuring apparatus sensitive to the external disturbances, optical instruments, etc.

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

DIMENSIONS AND OPERATING CHARACTERISTICS



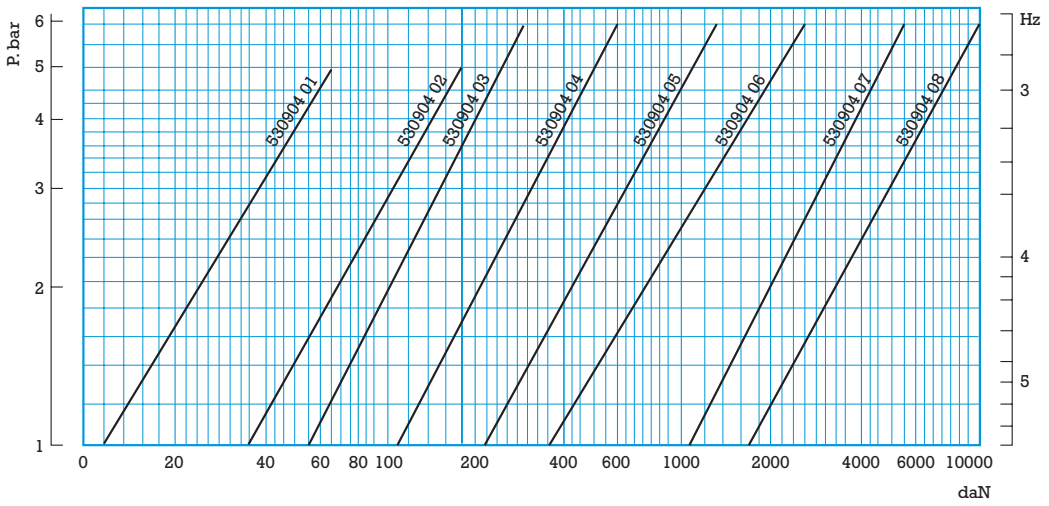


Paulstra reference	*Barry Controls * reference*	Nominal static load daN	A mm	B mm	C	Ø E mm	Ø F mm	G mm	Ø H mm	J mm	T mm	Weig. kg
530904 01	***SLM-M1A***	11 - 45	76.2	60.4	M10	7	73.2	63.5	25.4	12.7	3.2	0.5
530904 02	***SLM-M3A***	34 - 136	106.4	88.9	M12	7	105.2	62.2	44.4	12.7	3.2	0.7
530904 03	***SLM-M6A***	68 - 272	130.0	108.0	M12	7	126.7	88.9	54.1	14.2	3.2	1.5
530904 04	***SLM-M12A***	136 - 545	174.8	152.4	M12	7	171.2	88.9	76.2	14.2	3.2	2.5
530904 05	***SLM-M24A***	272 - 1090	254.0	215.9	M16	14.2	245.4	88.9	138.2	14.2	4.8	6
530904 06	***SLM-M48A***	545 - 2180	342.9	304.8	M16	14.2	338.1	88.9	190.5	14.2	4.8	11.8
530904 07	***SLM-M96A***	1090 - 4360	469.9	406.4	M24	20.6	468.4	88.9	266.7	14.2	6.4	26.0
530904 08	*SLM-M192A*	2180 - 8720	609.6	508.0	M24	20.6	609.6	88.9	400.1	14.2	6.4	45.0

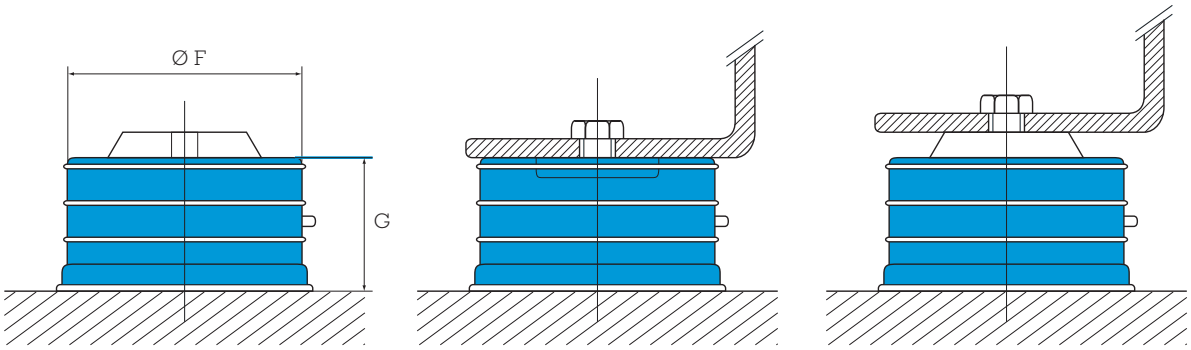
See current price list for availability of items. **1 kg ≃ 1 daN**

** Barry Controls references are given as an indication..*

PRESSURE OF INFLATION FOR STATIC HEAD AND NATURAL FREQUENCY



ASSEMBLY

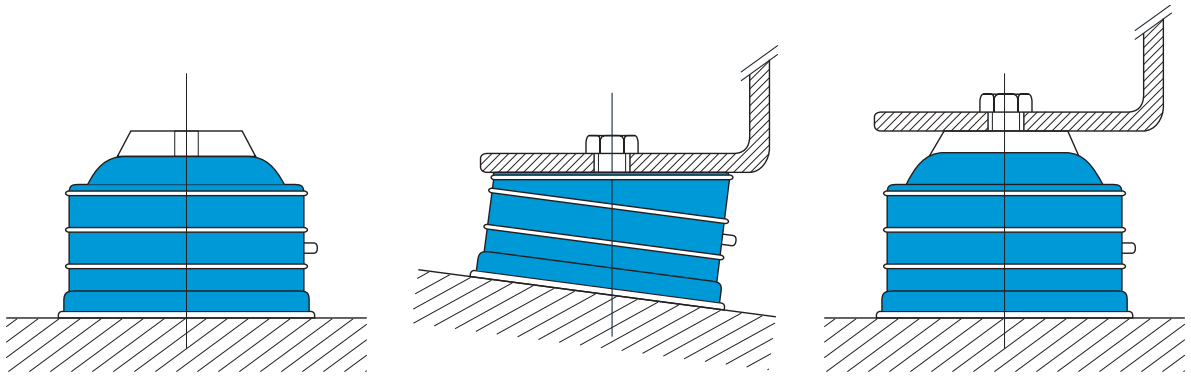


1 - AV mount | 2 - Install the machinery | 3 - Inflate the mount

Correct assembly

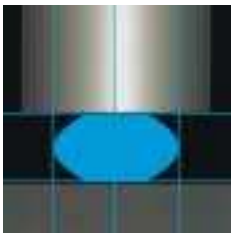
Recommendations:

The machine must rest on the supports before they are inflated to the level indicated on dimension " G ".
Before any dismantling, the SLM mount must be deflated.
The surface of the machine must completely cover the surface (Ø F) of the mount. If it is not possible, use a separate plate (thickness between 5 and 10 mm, according to the load) and diameter equal to F + 10 mm. This is to obtain a base on the full surface. It is required for assembly and in the event of an air leakage.
If necessary, it is possible to fix the supports using the four smooth holes on the bed plate.
Make sure care that the valves are protected.
Never overload the mounts. Always use the recommended load capabilities.



Mount inflated before fixing the machinery | Floor not level | Over inflated mount

Uncorrect assemblies



22000 MOUNT

(1) Natural frequency: 8 to 18 Hz

DESCRIPTION

The 22000 mount is made of two parts of elastomer bonded to a central tube.

Interior reinforced: cylindrical tube.
Elastomer: chloroprene. Range of five different stiffnesses.

OPERATION

The design of the 22000 mount gives the following basic characte-ristics.

Elastomer element resistant to oils, supporting axial and radial loadings.
Axial to radial stiffness of 1: 1.
Absorb vibrations and reduce noise in all directions.

Advantages:

Good isolation against structural noises.
Chloroprene resistant to oils.
Simple and economical.
Simple to fix.
Five sizes for a load capacity under axial pressure from 15 to 2100 kg and under radial pressure until 650 kg.
Anti-rebound effect when it is assembled with a washer.

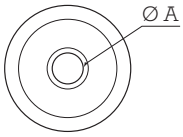
APPLICATIONS

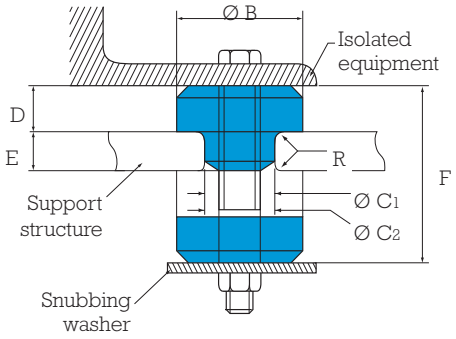
22000 mounts can be used in static or mobile applications, such as: pumps, compressors, generators, electronic equipment, HVAC equipment, engines with internal combustion, transmissions, plant cabs, radiators, etc.

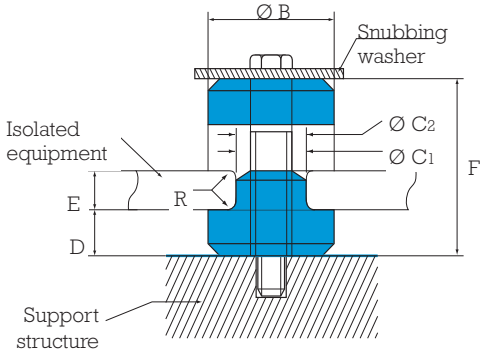
(1) Natural frequencies with max/min loads, see: OPERATING CHARACTERISTICS.

DIMENSIONS CHARACTERISTICS

C1: Ø mounting hole
C2: Ø elastomer
F: Free height
R: Radius required



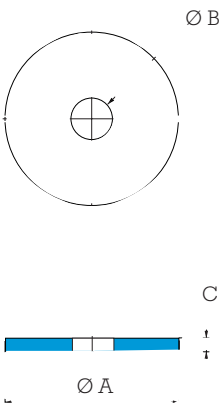




E: support structure thickness can be E1 or E2 depending on the required load and natural frequency (see technical chart next page)."

Paulstra reference	*Barry Controls* reference*	Ø A mm	Ø B mm	Ø C1 mm	Ø C2 mm	D mm	E1 mm	E2 mm	F mm	R mm	Weight g
530903 11 / 15	***22001-11 / 15***	10.4	33.2	19	20.1	12.3	9.5	9.5	31.7	1	43
530903 21 / 25	***22002-11 / 15***	13.5	47.7	31.7	33	19.8	14	12.5	49.2	1.5	142
530903 31 / 35	***22003-11 / 15***	16.7	64.8	38.1	40.1	22.8	22	19	61.7	2.3	313
530903 41 / 45	***22004-11 / 15***	23.8	88.9	57.1	58.4	25.4	28.5	25.5	73.1	3	670
530903 51 / 55	*22005-11* ***/ 15***	27	123.9	63.5	64.8	31.7	32	25.5	85.8	3	1306

See current price list for availability of items. **1 kg ≃ 1 daN**



Zinc plated steel washers are recommended for the assembly of the mount.
They make it possible to carry out debouncing.

PAULSTRA Reference*	Washer			
	Ø A mm	Ø B mm	C mm	Weight g
530903 11 / 15	39.6	10.3	2.2	24
530903 21 / 25	54.1	13.5	3.4	54
530903 31 / 35	71.3	16.7	4.7	140
530903 41 / 45	98.5	23.8	6.3	368
530903 51 / 55	133.3	27.0	9.5	991

** References given as an indication.*

OPERATING CHARACTERISTICS

The maximum loadings depend on the compression of the assembly by comparing the thicknesses E1 and E2.

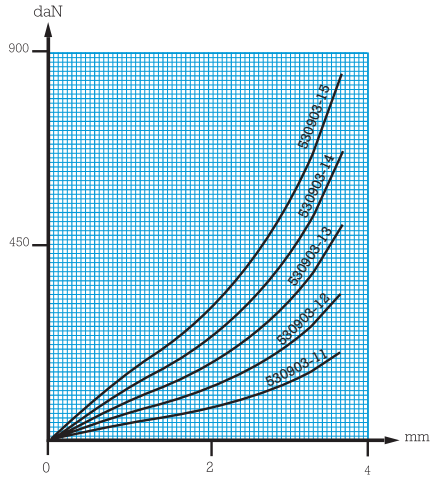
Paulstra reference	*Barry Controls* reference*	Support structure thickness E1 Load per mount				Support structure thickness E2 Load per mount			
		Axial daN	Radial daN	Fo Hz	E1 mm	Axial daN	Radial daN	Fo Hz	E2 mm
530903 11	***22001-11***	18	9			18	9		
530903 12	***22001-12***	40	13			40	13		
530903 13	***22001-13***	63	18	15	9.5	63	18	15	9.5
530903 14	***22001-14***	113	22			113	22		
530903 15	***22001-15***	136	27			136	27		
530903 21	***22002-11***	59	22			27	18		
530903 22	***22002-12***	79	29			54	36		
530903 23	***22002-13***	109	40	12	14	72	56	15	12.5
530903 24	***22002-14***	172	75			118	81		
530903 25	***22002-15***	286	127			172	127		
530903 31	***22003-11***	95	40			40	31		
530903 32	***22003-12***	159	63			68	47		
530903 33	***22003-13***	222	102	11	22	102	72	15	19
530903 34	***22003-14***	390	175			147	111		
530903 35	***22003-15***	604	313			227	163		
530903 41	***22004-11***	122	61			68	50		
530903 42	***22004-12***	231	104			136	100		
530903 43	***22004-13***	350	156	10	28.5	181	136	15	25.5
530903 44	***22004-14***	531	268			227	181		
530903 45	***22004-15***	954	443			272	263		
530903 51	*22005-11*	518	109			136	68		
530903 52	*22005-12*	877	154			227	100		
530903 53	*22005-13*	1172	277	10	32	318	136	15	25.5
530903 54	*22005-14*	1609	404			409	213		
530903 55	*22005-15*	2072	640			545	300		

See current price list for availability of items. **1 kg ≃ 1 daN**

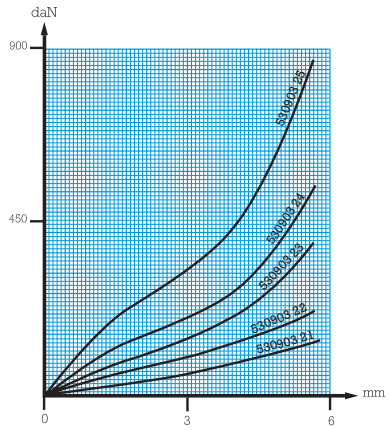
* *Barry Controls references are given as an indication..*

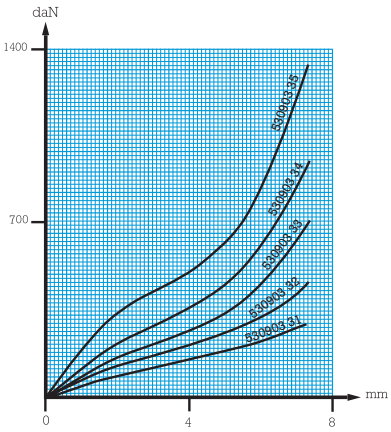
LOAD/DEFLECTION CURVES IN AXIAL COMPRESSION

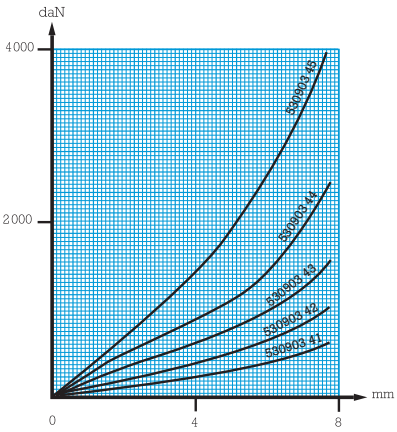
Assembly type E1 and E2

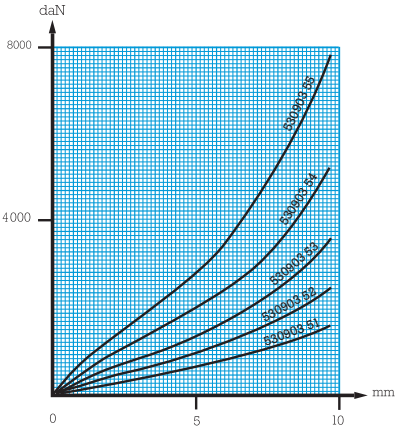


Assembly type E1

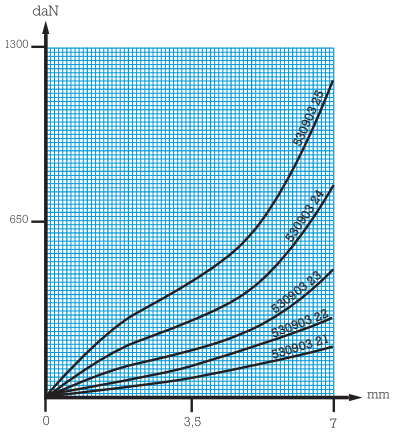


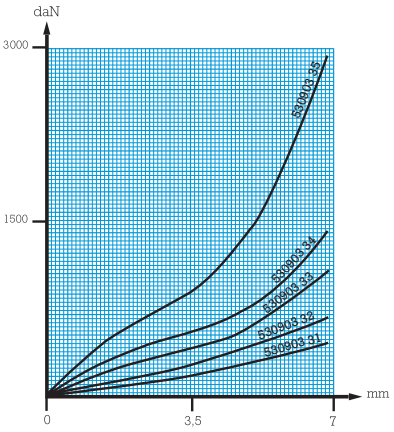


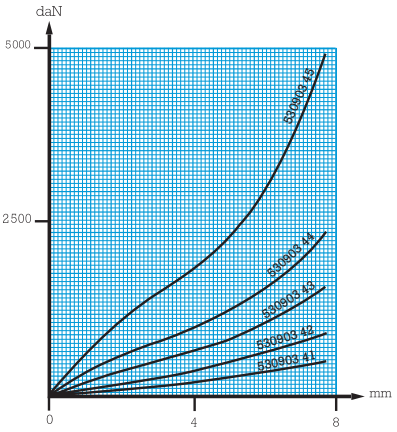


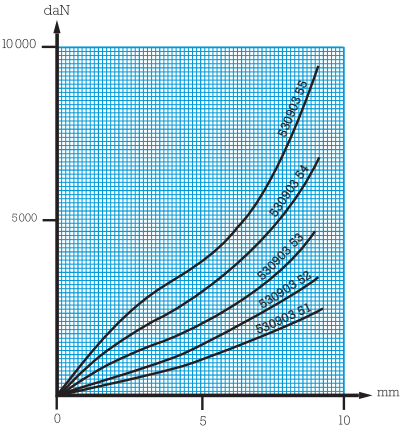


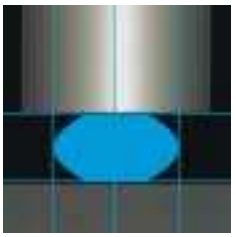
Assembly type E2











CUPMOUNT

(1) Natural frequency: 25 to 35 Hz

DESCRIPTION

The CUPMOUNT is made of rubber bonded to two metal reinforcements of truncated form.

Interior reinforcement with tapped hole.
External reinforcements with square base (4 holes).

OPERATION

The design of the CUPMOUNT gives the following basic characteristics:

The ratio of radial and axial rigidity of the elements is 1/1, which allows excellent stability.

Advantages:

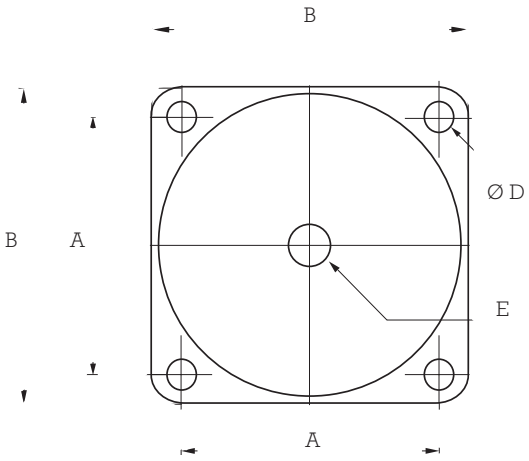
Four models, load capacity of 1 to 1000 daN.
Support iso-stiffness into axial and radial.
Can be assembled multidirectional. Effective in compression, traction and shear.
Chloroprene resistant to oils.
Easy and fast to install.

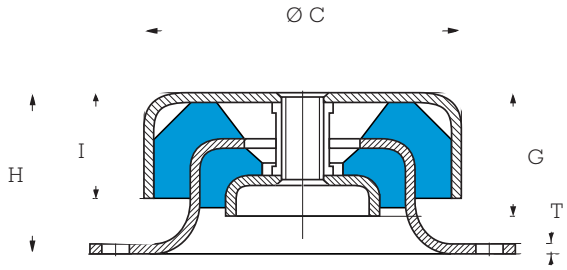
APPLICATIONS

Engines, pumps, air conditioning, ventilators, transformers...
The CUPMOUNT can also be used for suspended ceilings and for mobile applications.

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

DIMENSIONS CHARACTERISTICS





Reference 530906

Paulstra reference	*Barry Controls* reference*	A mm	B mm	Ø C mm	Ø D mm	E	G mm	H mm	I mm	T mm	Weight kg
530906 11/14	*C1000*	49,5	60	58	5.2	M6	20	28	18	1,6	0.2
530906 21/26	*C2000*	63,5	75	76	6.4	M10	30	38	25	2.3	0.4
530906 31/34	*C3000*	143	175	168	13.5	M16	65	90	59	4.7	4.5
530906 41/44	*C4000*	108	133	124	11.9	M16	19	63	38	4	1.8

** Barry Controls references are given as an indication.*

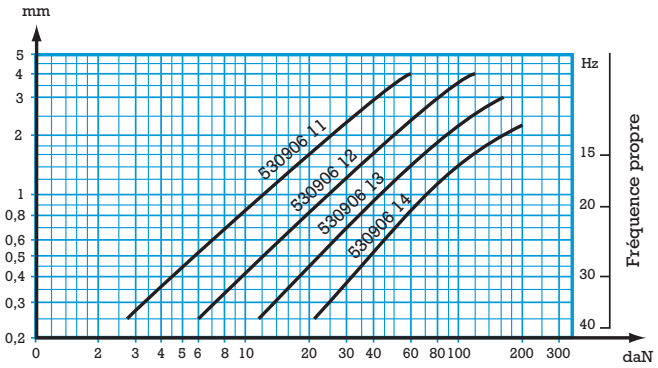
OPERATING CHARACTERISTICS

Paulstra reference	*Barry Controls* reference*	Maximum load daN	
		Mobile application	Static application
530906 11	*C1010*	6,5	6.5
530906 12	*C1015*	14	14
530906 13	*C1035*	26	26
530906 14	*C1050*	45	45
530906 21	*C2020*	13	26
530906 22	*C2040*	24	48
530906 23	*C2060*	34	68
530906 24	*C2075*	60	120
530906 25	*C2090*	72	144
530906 26	*C2125*	92	184
530906 41	*C4100*	70	140
530906 42	*C4135*	118	236
530906 43	*C4200*	160	320
530906 44	*C4300*	250	500
530906 31	*C3125*	90	180
530906 32	*C3175*	125	250
530906 33	*C3300*	165	330
530906 34	*C3500*	330	660

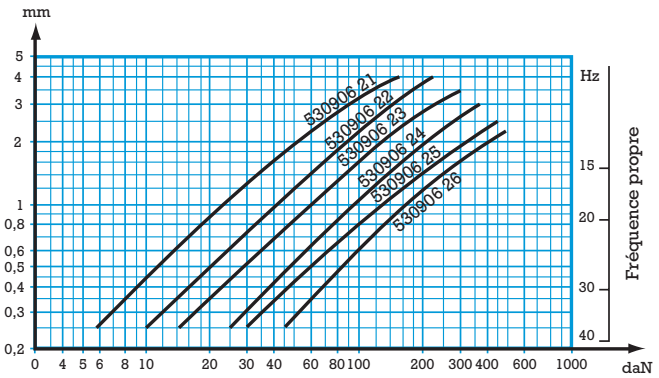
** Barry Controls references are given as an indication.*

1 kg ≃ 1 daN

LOAD/DEFLECTION CURVES IN AXIAL COMPRESSION



Reference 530906 11/14



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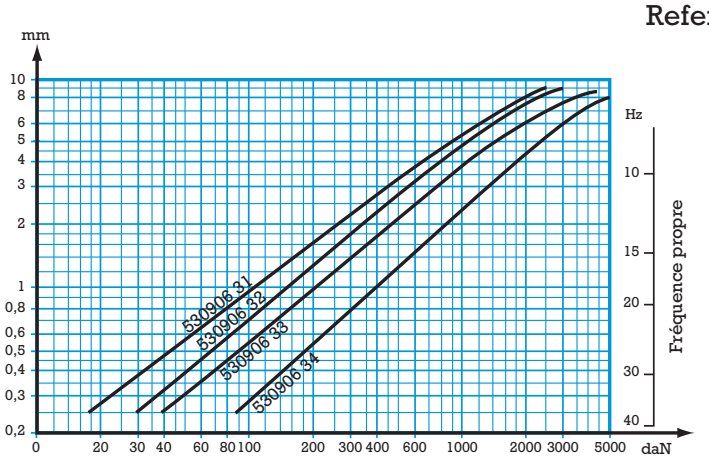
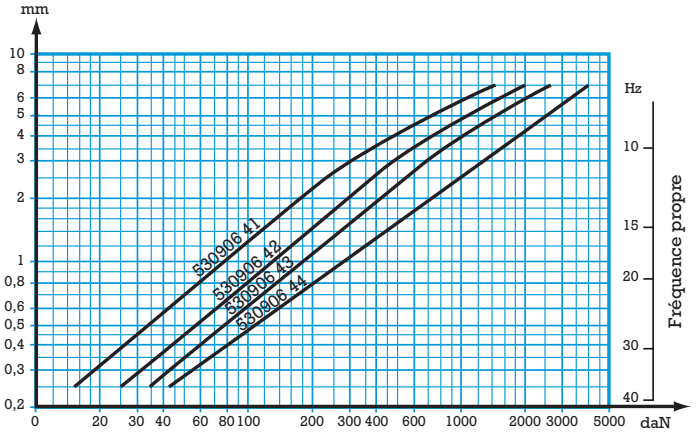
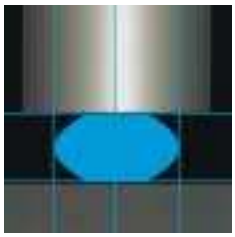


Reference 530906 31/34



Reference 530906 41/44



RINGS AND BUSHINGS

(1) Natural frequency: 6 to 28 Hz

DESCRIPTION

All elements made of elastomer.
Elastomer is compatible with the majority of the industrial environments and has an operating temperature range of - 40°C to + 83°C.

OPERATION

A ring assembled with the associated bushing constitutes a flexible interface and a simple solution to decrease noise and vibrations.

These supports can be installed in parallel for a greater load capacity and may also be stacked in series when greater deflection capacity is required.

Advantages:

Highly efficient noise reduction.
Absorb schock and vibrations.
Simple and economic.
Four models in four stifnesses for load capacities going from 0.5 to 160 kg per isolator.

APPLICATIONS

Office machines, motors, fans, HVAC equipment, electronics equipment, telecommunication equipment; etc.

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

DIMENSIONS CHARACTERISTICS

Rings

Bushings

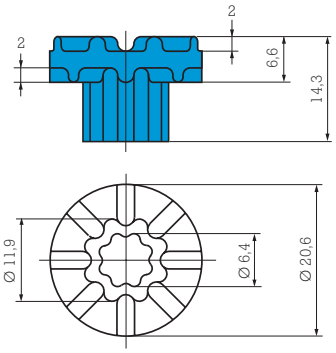
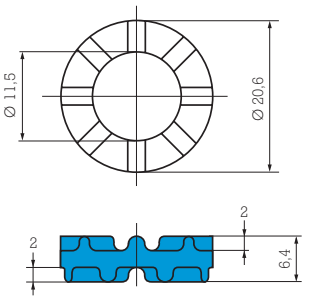


Fig. 1



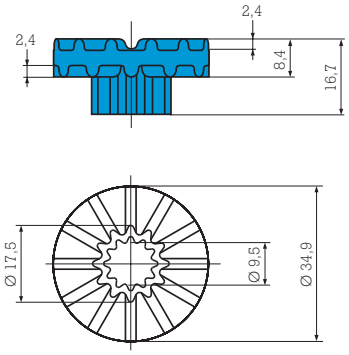
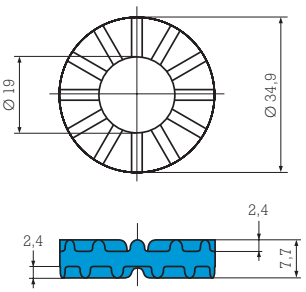


Fig. 2



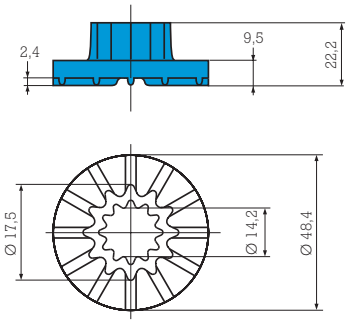
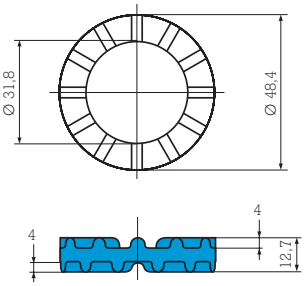


Fig. 3



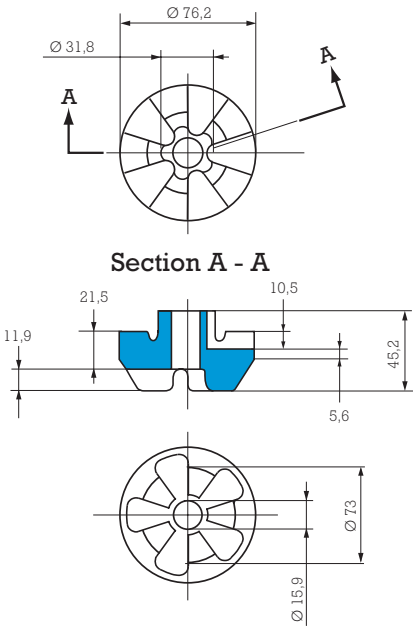
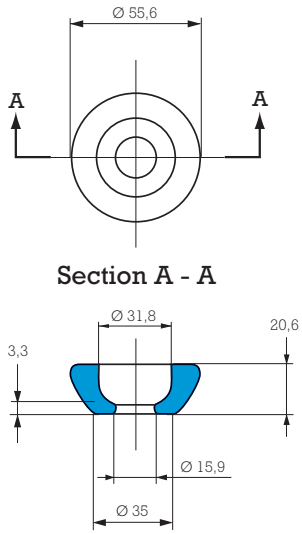


Fig. 4



OPERATING CHARACTERISTICS

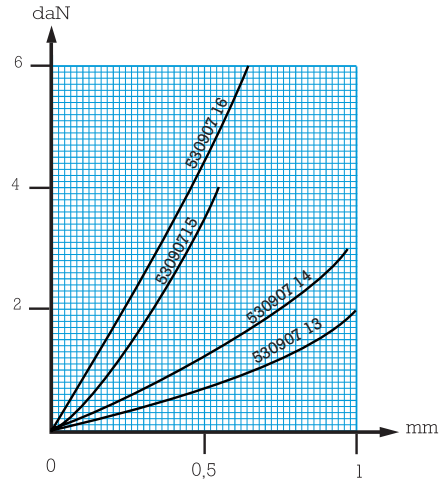
Group Paulstra reference *Barry Controls reference* *	Fig	Load range	
		Min. (daN)	Max. (daN)
530907 13 / 530908 13 *WR1-030 / WB1-030*	1	0.4	1.8
530907 14 / 530908 14 *WR1-040 / WB1-040*	1	0.9	2.7
530907 15 / 530908 15 *WR1-050 / WB1-050*	1	1.4	3.6
530907 16 / 530908 16 *WR1-060 / WB1-060*	1	2.3	5.4
530907 43 / 530908 43 *WR4-030 / WB4-030*	3	2.7	9
530907 44 / 53090844 *WR4-040 / WB4-040*	3	3.2	10.5
530907 45 / 530908 45 *WR4-050 / WB4-050*	3	4.5	11.4
530907 46 / 530908 46 *WR4-060 / WB4-060*	3	6.8	16

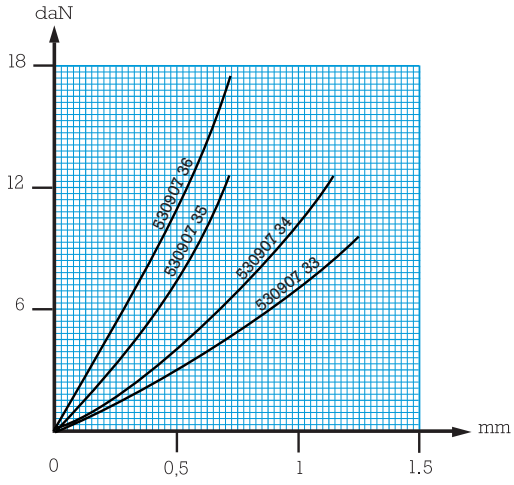
Group Paulstra reference *Barry Controls reference* *	Fig	Load range	
		Min. (daN)	Max. (daN)
530907 33 / 530908 33 *WR3-030 / WB3-030*	2	4.7	16
530907 34 / 530908 34 *WR3-040 / WB3-040*	2	9	23
530907 35 / 530908 35 *WR3-050 / WB3-050*	2	13.6	27
530907 36 / 530908 36 *WR3-060 / WB3-060*	2	18	74
530907 63 / 530908 63 *WR6-030 / WB6-030*	4	27	55
530907 64 / 530908 64 *WR6-040 / WB6-040*	4	50	73
530907 65 / 530908 65 *WR6-050 / WB6-050*	4	61	114
530907 66 / 530908 66 *WR6-060 / WB6-060*	4	73	159

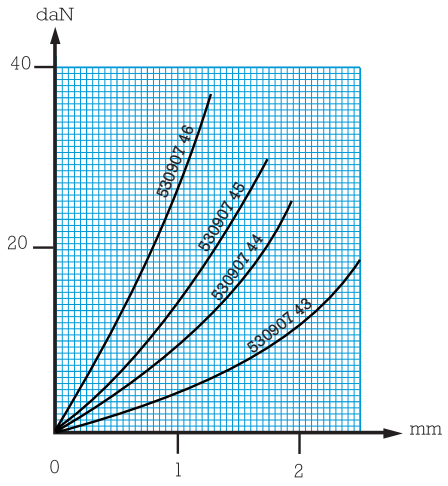
* *Barry Controls references are given as an indication.*

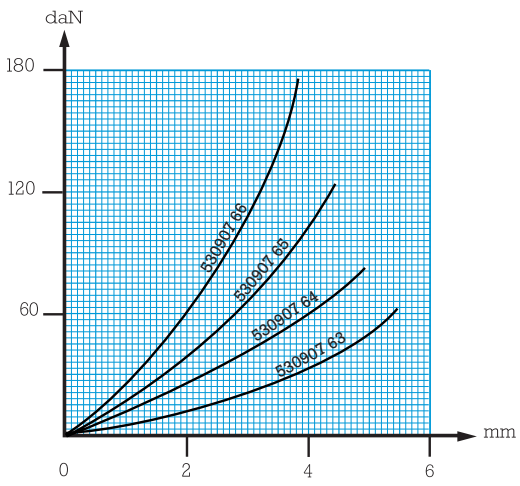
1 kg ≃ 1 daN

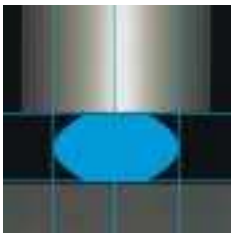
LOAD/DEFLECTION CURVES IN AXIAL COMPRESSION











FLEX-LOC

DESCRIPTION

A flexible fixing resistant to oils, the majority of solvents and ageing.

OPERATION

The design of the FLEX-LOC mount gives the following basic characteristics:

The rubber works in:

- compression (axial),
- shear (radial),
- compression/shear according to the fixing method.

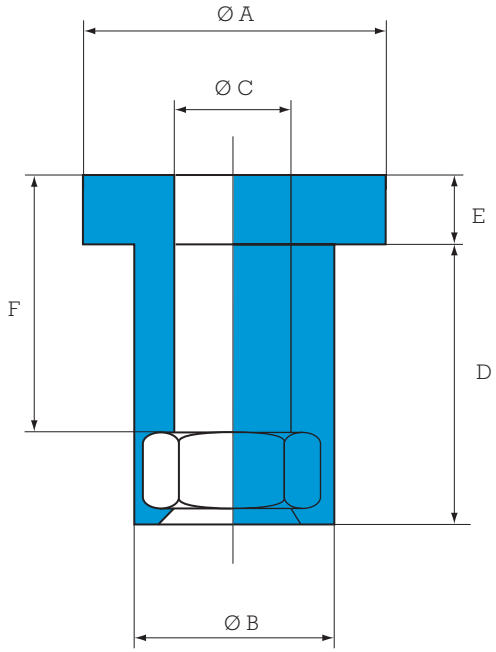
Advantages:

80% reduction of vibrational energy transmitted from normal structural frequencies.
Simple and economical.
Simple to fix.
Light weight.

APPLICATIONS

FLEX-LOC are suitable for the fixing of sheets, frameworks, engines, ventilators, electronic equipment, computers, etc.

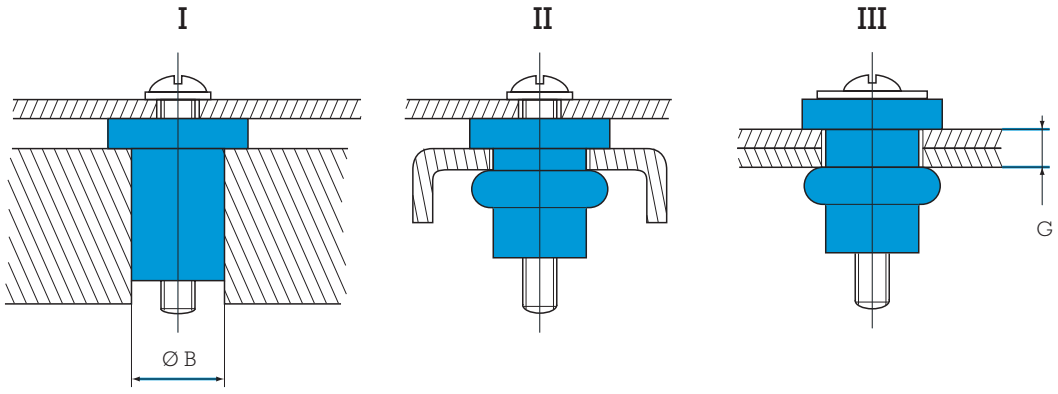
DIMENSIONS CHARACTERISTICS



Paulstra reference	*Barry Controls reference **	Nut	Ø A mm	Ø B mm	Ø C mm	D mm	E mm	F mm
530909 03	***Q3***	M3	9	7.2	3.4	9	2.5	8
530909 04	***Q4***	M4	12	9.3	4.4	11.5	3	10.5
530909 05	***Q5***	M5	15	10.2	5.4	14.5	3.5	13
530909 06	***Q6***	M6	18	12.7	6.4	17	4	15
530909 07	***Q8***	M8	24	16.5	8.4	22	5	19.5

* *Barry Controls references are given as an indication.*

OPERATING CHARACTERISTICS



Paulstra reference	*Barry Controls reference **	Clearance cole Ø B	Plate thickness G mm	Torque range		Static load (daN)		
				I N.m	II ou III N.m	I	II ou III	
						Compression/ shear	Compression	Shear
530909 03	***Q3***	7,2-7,5	0.6-2.5	0.5	0.4	1	5	2.5
530909 04	***Q4***	9,3-9,6	0.8-3.3	0.6	0.5	1	7	3.5
530909 05	***Q5***	10,2-10,5	0.8-4.3	1.0	0.6	1.5	10	5
530909 06	***Q6***	12,7-13,0	1.5-5.0	3.5	0.9	3	14	7
530909 07	***Q8***	16,5-16,8	1.5-6.5	4.0	1.8	5	28	14

* *Barry Controls references are given as an indication.*

1 kg ≃ 1 daN