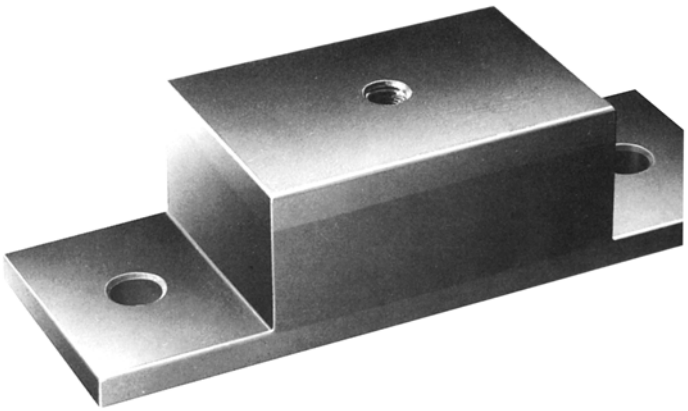
Elasto®- Rubber-Metal Blocks

for Vibration Isolation and Structure-Borne Noise Reduction

Load capacity up to160 kN
Vertical natural frequency 7.0 Hz (minimum)



Mode of Function

The transmission of intermittent or periodic impact force is considerably reduced by the vibration isolation bedding of machines and plants on G+H bearing elements.

Advantages

- Elasto®-Rubber-Metal Bocks are made of natural rubber with vulcanised metal plates. Natural rubber has better elastic properties compared to synthetic materials.
- Elasto®-Rubber-Metal Bocks have a relatively high material damping. This serves to reduce the vibration amplitude of the elastically-supported system when passing through the resonant frequency and also to shorten the decay time of the oscillation, in case of sudden impacts.
- The various types allow good mounting possibilities for nearly every application.

Temperature range

- 20 to + 70º C

Installation conditions

Elasto®-Rubber-Metal Blocks are constructed exclusively for compressive or shear loads. Tensile loads are not allowed.
During installation care must be taken to allow for lateral expansion of the mounts, as the rubber volume is constant.
ELASTO®-elements must be protected against oil, grease, and fuel. An occasional and slight moistening with oil however has no adverse affect on their function or lifetime.

Construction and types

Elasto®-Rubber-Metal Blocks are made of natural rubber and have vulcanised metal parts, corrosion protected with black lacquer.
ELASTO®-elements are supplied in two shore-hardness, according to DIN 53 505:

rubber-hardness a:	43 ± 5 Shore A
rubber-hardness f:	57 ± 5 Shore A

These tolerances of the rubber-hardness can result in a possible ± 20 % deviation of the spring rate

Special types

Elasto®-Rubber-Metal Blocks can also be supplied in other rubber-hardness, dimensions, or synthetic rubbers. When requested, ELASTO®-elements can be protected against oil with a special lacquer.

Accessories

- **Adhesive sheet at bottom** –Gu, **Adhesive sheet on top** -Go:
  For mounting, fixing and levelling uneven surfaces on erection site. Due to their good adhesive features, the adhesive and the structure-borne noise damping sheets are in most cases suitable for the mounting (not using any screws). Thickness: 2 mm
- **Protective coating of paint** –A:
  For protection against oil and for outer using with protection against UV-radiation and ozone.
- **Gemak®-Glue**:
  To glue Elasto®-Rubber-Metal Blocks with adhesive or structure-borne damping sheet with surfaces.

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Technical Data

Length L [mm]	Rubber-hardness a (43 Shore A) Type GSS	Load Capacity vertical F_{vzul} [kN]	Load Capacity hori-zontal F_{hzul} [kN]	Spring-Constant verti-cal C_v [N/mm]	Spring-Constant hori-zontal C_h [N/mm]	Natural Frequency vertikal [1] n_o [1/min]	Natural Frequency vertikal [1] f_o [Hz]	Rubber-hardness f (57 Shore A) Type GSS	Load Capacity vertical F_{vzul} [kN]	Load Capacity hori-zontal F_{hzul} [kN]	Spring-Constant verti-cal C_v [N/mm]	Spring-Constant hori-zontal C_h [N/mm]	Natural Frequency vertikal [1] n_o [1/min]	Natural Frequency vertikal [1] f_o [Hz]
100	**502a-10**	2.5	0.6	1090	140	684	11.4	**502f-10**	4.2	1.1	2190	260	864	14.4
150	**502a-15**	4.3	0.9	1810	210	672	11.2	**502f-15**	6.7	1.7	3660	400	884	14.7
200	**502a-20**	6.1	1.2	2570	290	673	11.2	**502f-20**	9.3	2.3	5200	530	895	14.9
300	**502a-30**	9.9	1.8	4140	430	670	11.2	**502f-30**	14.4	3.4	8370	790	912	15.2
400	**502a-40**	13.7	2.5	5730	570	670	11.2	**502f-40**	19.5	4.6	11590	1060	922	15.4
500	**502a-50**	17.6	3.1	7340	710	669	11.2	**502f-50**	24.7	5.8	14840	1320	927	15.5
600	**502a-60**	21.4	3.7	8960	860	670	11.2	**502f-60**	30.0	6.9	18110	1590	930	15.5
700	**502a-70**	25.3	4.3	10580	1000	670	11.2	**502f-70**	35.0	8.1	21390	1850	935	15.6
800	**502a-80**	29.2	5.0	12200	1140	670	11.2	**502f-80**	40.5	9.3	24670	2110	934	15.6
900	**502a-90**	33.1	5.6	13820	1280	669	11.2	**502f-90**	45.5	10.4	27950	2380	938	15.6
1000	**502a-100**	37.0	6.2	15450	1430	670	11.2	**502f-100**	50.5	11.6	31240	2640	941	15.7
100	**503a-10**	1.9	0.6	540	100	552	9.2	**503f-10**	3.6	1.1	1080	180	655	10.9
150	**503a-15**	3.1	0.9	870	140	549	9.1	**503f-15**	5.6	2.3	1750	260	669	11.1
200	**503a-20**	4.3	1.2	1210	190	550	9.2	**503f-20**	7.7	2.3	2440	350	673	11.2
300	**503a-30**	6.8	1.8	1910	290	549	9.2	**503f-30**	11.8	3.4	3860	530	684	11.4
400	**503a-40**	9.4	2.5	2620	380	547	9.1	**503f-40**	16.0	4.6	5290	700	688	11.5
500	**503a-50**	11.9	3.1	3330	480	548	9.1	**503f-50**	20.3	5.8	6730	880	689	11.5
600	**503a-60**	14.5	3.7	4050	570	548	9.1	**503f-60**	24.7	6.9	8180	1060	688	11.5
700	**503a-70**	17.1	4.3	4770	670	547	9.1	**503f-70**	28.8	8.1	9630	1230	692	11.5
800	**503a-80**	19.7	5.0	5480	760	546	9.1	**503f-80**	33.0	9.3	11080	1410	693	11.6
900	**503a-90**	22.3	5.6	6200	860	546	9.1	**503f-90**	37.5	10.4	12540	1590	692	11.5
1000	**503a-100**	24.9	6.2	6920	950	546	9.1	**503f-100**	41.5	11.6	13990	1760	695	11.6
100	**505a-10**	1.4	0.6	250	60	438	7.3	**505f-10**	3.0	1.1	510	110	493	8.2
150	**505a-15**	2.3	0.9	390	90	427	7.1	**505f-15**	4.7	1.7	790	160	490	8.2
200	**505a-20**	3.2	1.2	540	110	426	7.1	**505f-20**	6.4	2.3	1090	210	494	8.2
300	**505a-30**	4.9	1.8	830	170	426	7.1	**505f-30**	9.7	3.4	1680	320	498	8.3
400	**505a-40**	6.7	2.5	1130	230	425	7.1	**505f-40**	13.3	4.6	2280	420	495	8.3
500	**505a-50**	8.5	3.1	1430	290	425	7.1	**505f-50**	16.8	5.8	2880	530	495	8.3
600	**505a-60**	10.3	3.7	1730	340	425	7.1	**505f-60**	20.5	6.9	3480	630	493	8.2
700	**505a-70**	12.1	4.3	2020	400	423	7.1	**505f-70**	23.8	8.1	4090	740	496	8.3
800	**505a-80**	13.9	5.0	2320	460	423	7.1	**505f-80**	27.3	9.3	4690	850	496	8.3
900	**505a-90**	15.7	5.6	2620	510	423	7.1	**505f-90**	30.5	10.4	5300	950	499	8.3
1000	**505a-100**	17.4	6.2	2920	570	424	7.1	**505f-100**	34.0	11.6	5900	1060	498	8.3
100	**703a-10**	3.1	0.8	870	130	549	9.1	**703f-10**	5.4	1.6	1750	250	681	11.4
150	**703a-15**	5.2	1.3	1460	200	549	9.1	**703f-15**	8.7	2.4	2950	370	697	11.6
200	**703a-20**	7.5	1.7	2090	270	547	9.1	**703f-20**	12.0	3.2	4220	490	709	11.8
300	**703a-30**	12.2	2.6	3410	400	548	9.1	**703f-30**	19.0	4.8	6890	740	720	12.0
400	**703a-40**	17.1	3.5	4770	530	547	9.1	**703f-40**	25.7	6.5	9630	990	732	12.2
500	**703a-50**	22.0	4.3	6140	670	547	9.1	**703f-50**	33.0	8.1	12410	1230	734	12.2
600	**703a-60**	27.0	5.2	7520	800	547	9.1	**703f-60**	40.0	9.7	15210	1480	738	12.3
700	**703a-70**	32.0	6.1	8910	930	547	9.1	**703f-70**	46.5	11.3	18020	1730	745	12.4
800	**703a-80**	37.0	7.0	10310	1070	547	9.1	**703f-80**	54.0	13.0	20850	1970	743	12.4
900	**703a-90**	42.1	7.9	11710	1200	546	9.1	**703f-90**	60.5	14.6	23670	2220	748	12.5
1000	**703a-100**	47.1	8.7	13110	1330	547	9.1	**703f-100**	68.0	16.2	26500	2470	747	12.4

[1] at maximum load capacity

Technical Data

Length L [mm]	Rubber-hardness a (43 Shore A) Type GSS	Load Capacity vertical F_{vzul} [kN]	Load Capacity horizontal F_{hzul} [kN]	Spring-Constant vertical C_v [N/mm]	Spring-Constant horizontal C_h [N/mm]	Natural Frequency vertikal [1] n_o [1/min]	Natural Frequency vertikal [1] f_o [Hz]	Rubber-hardness f (57 Shore A) Type GSS	Load Capacity vertical F_{vzul} [kN]	Load Capacity horizontal F_{hzul} [kN]	Spring-Constant vertical C_v [N/mm]	Spring-Constant horizontal C_h [N/mm]	Natural Frequency vertikal [1] n_o [1/min]	Natural Frequency vertikal [1] f_o [Hz]
100	**705a-10**	2.2	0.8	380	80	431	7.2	**705f-10**	4.5	1.6	770	150	495	8.2
150	**705a-15**	3.6	1.3	620	120	430	7.2	**705f-15**	7.1	2.4	1250	220	502	8.4
200	**705a-20**	5.1	1.7	860	160	425	7.1	**705f-20**	9.8	3.2	1740	300	504	8.4
300	**705a-30**	8.1	2.6	1360	240	425	7.1	**705f-30**	15.2	4.8	2750	440	509	8.5
400	**705a-40**	11.2	3.5	1880	320	424	7.1	**705f-40**	20.8	6.5	3790	590	511	8.5
500	**705a-50**	14.3	4.3	2390	400	424	7.1	**705f-50**	26.2	8.1	4830	740	514	8.6
600	**705a-60**	17.4	5.2	2910	480	424	7.1	**705f-60**	31.7	9.7	5880	890	515	8.6
700	**705a-70**	20.5	6.1	3430	560	424	7.1	**705f-70**	37.3	11.3	6930	1040	516	8.6
800	**705a-80**	23.6	7.0	3950	640	424	7.1	**705f-80**	42.5	13.0	7990	1180	519	8.6
900	**705a-90**	26.8	7.9	4470	720	423	7.1	**705f-90**	47.8	14.6	9040	1330	520	8.7
1000	**705a-100**	29.9	8.7	5000	800	424	7.1	**705f-100**	53.0	16.2	10100	1480	522	8.7
100	**103a-10**	5.1	1.2	1450	190	552	9.2	**103f-10**	8.5	2.3	2920	350	701	11.7
150	**103a-15**	9.2	1.8	2570	290	548	9.1	**103f-15**	14.0	3.4	5200	530	729	12.2
200	**103a-20**	13.7	2.5	3820	380	547	9.1	**103f-20**	19.5	4.6	7730	700	753	12.6
300	**103a-30**	23.0	3.7	6530	570	552	9.2	**103f-30**	31.3	6.9	13210	1060	777	13.0
400	**103a-40**	32.0	5.0	9390	760	561	9.4	**103f-40**	43.0	9.3	18990	1410	795	13.3
500	**103a-50**	40.5	6.2	12330	950	572	9.5	**103f-50**	55.5	11.6	24930	1760	802	13.4
600	**103a-60**	49.0	7.5	15310	1140	579	9.7	**103f-60**	67.0	13.9	30960	2110	813	13.6
700	**103a-70**	58.0	8.7	18330	1330	582	9.7	**103f-70**	79.5	16.2	37060	2470	817	13.6
800	**103a-80**	66.5	10.0	21360	1520	587	9.8	**103f-80**	92.0	18.6	43190	2820	820	13.7
900	**103a-90**	75.5	11.3	24410	1710	589	9.8	**103f-90**	104.0	20.9	49360	3170	824	13.7
1000	**103a-100**	84.0	12.5	27470	1900	592	9.9	**103f-100**	116.0	23.2	55540	3520	828	13.8
100	**105a-10**	3.5	1.4	600	110	429	7.1	**105f-10**	6.9	2.6	1220	210	503	8.4
150	**105a-15**	6.0	2.1	1010	170	425	7.1	**105f-15**	11.1	3.9	2040	320	513	8.5
200	**105a-20**	8.6	2.8	1450	230	425	7.1	**105f-20**	15.3	5.2	2930	420	524	8.7
300	**105a-30**	14.2	4.2	2380	340	424	7.1	**105f-30**	24.2	7.9	4810	630	533	8.9
400	**105a-40**	20.0	5.7	3350	460	424	7.1	**105f-40**	33.2	10.5	6770	850	540	9.0
500	**105a-50**	25.9	7.1	4330	570	424	7.1	**105f-50**	42.5	13.2	8760	1060	543	9.1
600	**105a-60**	31.9	8.5	5330	680	424	7.1	**105f-60**	51.5	15.8	10780	1270	547	9.1
700	**105a-70**	37.9	9.9	6340	800	424	7.1	**105f-70**	61.0	18.4	12810	1480	548	9.1
800	**105a-80**	44.0	11.4	7350	910	423	7.1	**105f-80**	69.5	21.1	14850	1690	553	9.2
900	**105a-90**	50.1	12.8	8360	1030	423	7.1	**105f-90**	79.5	23.7	16900	1900	552	9.2
1000	**105a-100**	56.2	14.2	9370	1140	423	7.1	**105f-100**	88.0	26.4	18950	2110	555	9.3
100	**155a-10**	6.0	1.8	1010	170	425	7.1	**155f-10**	11.1	3.4	2040	320	513	8.5
150	**155a-15**	10.6	2.8	1790	260	426	7.1	**155f-15**	18.2	5.2	3610	480	533	8.9
200	**155a-20**	15.9	3.7	2670	340	425	7.1	**155f-20**	25.8	6.9	5390	630	547	9.1
300	**155a-30**	27.7	5.6	4630	510	424	7.1	**155f-30**	42.0	10.4	9360	950	565	9.4
400	**155a-40**	40.4	7.5	6750	680	424	7.1	**155f-40**	58.0	13.9	13640	1270	580	9.7
500	**155a-50**	53.7	9.4	8960	860	423	7.1	**155f-50**	75.0	17.4	18110	1590	588	9.8
600	**155a-60**	67.3	11.3	11230	1030	423	7.1	**155f-60**	92.0	20.9	22700	1900	594	9.9
700	**155a-70**	81.1	13.1	13530	1200	423	7.1	**155f-70**	108.0	24.4	27360	2220	602	10.0
800	**155a-80**	94.0	15.0	15860	1370	426	7.1	**155f-80**	126.0	27.9	32080	2540	604	10.1
900	**155a-90**	105.0	16.9	18220	1540	432	7.2	**155f-90**	143.0	31.3	36840	2850	607	10.1
1000	**155a-100**	118.0	18.8	20580	1710	433	7.2	**155f-100**	160.0	34.8	41620	3170	610	10.2

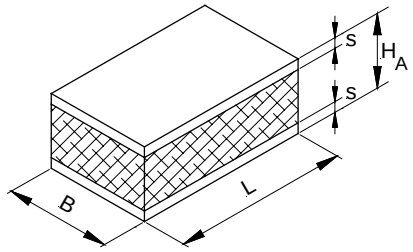
[1] at maximum load capacity

Dimensions, Weights

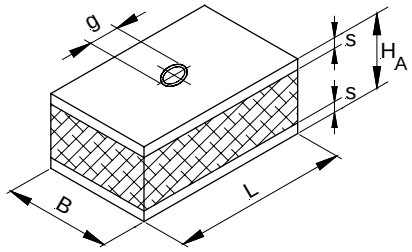
Type GSS	B [mm]	Height un-loaded H_A [mm]	s [mm]	d [mm]	g	Weight (Model 0) [kg/m]
502	50	40	10	14	M 12	9.0
503	50	50	10	14	M 12	9.5
505	50	70	10	14	M 12	10.7
703	70	50	10	14	M 12	13.4
705	70	70	10	14	M 12	15.0
103	100	60	15	18	M 16	27.0
105	100	80	15	18	M 16	29.3
155	150	80	15	18	M 16	43.9

	Dynamic factor k_d	Damping Ratio D
rubber-hardness a (43 Shore(A))	1,2	0.02 - 0.03
rubber-hardness f (57 Shore(A))	1,6	0.03 - 0.06

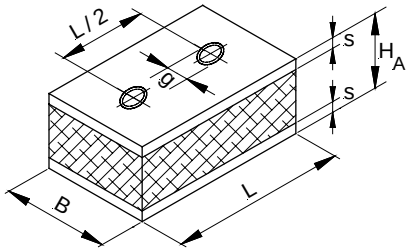
Model 0
undrilled



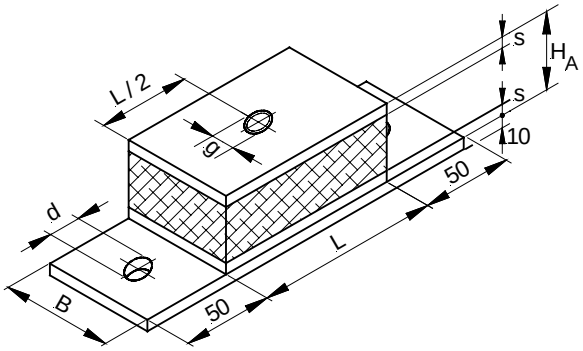
Model 1
both sides with a threaded hole



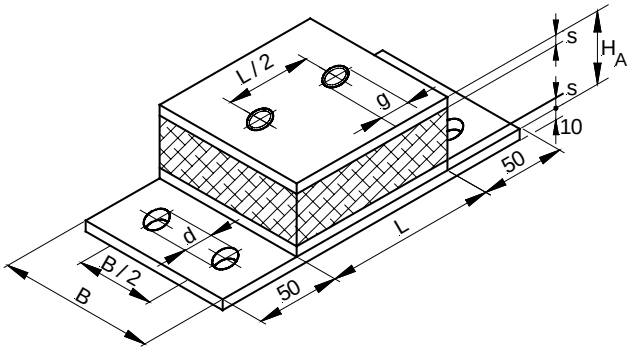
Model 2
both sides with two threaded holes



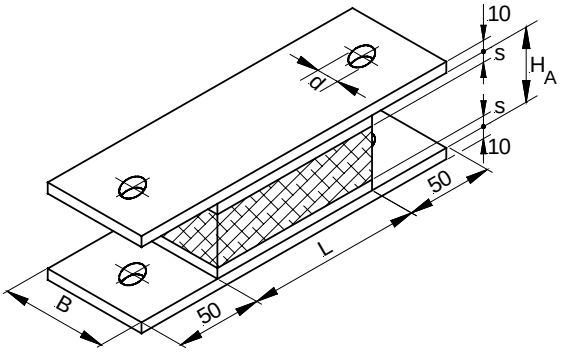
Model 3
Type 502, 503, 505, 703, 705
upper side threaded hole(s) ; under side steel mounting plate with holes



Type 103, 105, 155



Model 4
Type 502, 503, 505, 703, 705
both sides with steel mounting plates with holes



Type 103, 105, 155