

Vibration Isolation Systems

Components



Vibration Isolation

Steel spring isolators
Series P
Series UPM
Series SSI

Overview Steel spring isolators

Type P	Load range [kN]	natural frequency vertical [Hz]	see page ...	
P51/122	0,07 - 0,11	3,3 - 2,6	8	
P51/124	0,26 - 0,43	3,1 - 2,4		
P51/126	0,47 - 0,79	3,2 - 2,5		
P51/117	0,75 - 1,25	3,5 - 2,7		
P60/126	0,47 - 0,79	3,2 - 2,5	9	
P60/137	0,68 - 1,13	2,8 - 2,1		
P60/117	0,75 - 1,25	3,5 - 2,7		
P60/128	1,13 - 1,88	3,0 - 2,3		
P60/119	1,28 - 2,14	3,8 - 3,0		
P60/129	1,34 - 2,23	3,3 - 2,5		
P60/1111	2,10 - 3,50	4,0 - 3,1		
P60/1112	2,54 - 4,23	4,0 - 3,0		
P71/128	1,13 - 1,88	3,0 - 2,3	10	
P71/129	1,34 - 2,23	3,3 - 2,5		
P71/1211	1,89 - 3,15	3,2 - 2,5		
P71/1312	3,04 - 5,06	2,6 - 2,0		
P71/1226	3,30 - 5,49	6,1 - 4,7		
P71/1213	4,20 - 7,00	3,2 - 2,5		
P71/1113	4,36 - 7,27	4,0 - 3,1		
P71/1228	5,70 - 9,50	6,1 - 4,7		
P80/1512	preferred range	2,76 - 4,60	1,9 - 1,5	11
P80/1413		4,5 - 7,59	2,3 - 1,8	
P80/429		5,36 - 8,93	3,3 - 2,5	
P80/2312		6,08 - 10,13	2,6 - 2,0	
P80/2213		8,39 - 13,99	3,2 - 2,5	
P80/2113		8,72 - 14,53	4,0 - 3,1	
P80/3312		9,11 - 15,19	2,6 - 2,0	
P80/4312		12,15 - 20,25	2,6 - 2,0	
P80/4213		16,79 - 27,98	3,1 - 2,5	
P80/4113		17,44 - 29,06	4,0 - 3,1	
P80/437	further structural shapes	2,72 - 4,54	2,8 - 2,2	
P80/3211		5,67 - 9,45	3,2 - 2,5	
P80/519		6,41 - 10,69	3,9 - 3,0	
P80/529		6,69 - 11,16	3,3 - 2,5	
P80/4211		7,56 - 12,60	3,2 - 2,5	
P80/4111		8,39 - 13,99	4,1 - 3,1	
P80/5211		9,45 - 15,75	3,2 - 2,5	
P80/3226		9,89 - 16,48	6,1 - 4,7	
P80/4112		10,15 - 16,91	4,0 - 3,1	
P80/5111		10,49 - 17,48	4,1 - 3,1	
P80/3213	12,59 - 20,98	3,2 - 2,5		
P80/3113	13,08 - 21,80	4,0 - 3,1		

Type SSI	Load range [kN]	natural frequency vertical [Hz]	see page ...
SSI-4.0-18182/D	55 - 91	2,1 - 1,6	13
SSI-6.0-18182/D	82 - 137		
SSI-8.0-18182/D	109 - 183		
SSI-10.0-18182/D	137 - 228		

SSI-4.0-2575/D	22 - 38	2,9 - 2,2	14 + 15
SSI-6.0-2575/D	33 - 57		
SSI-8.0-2575/D	45 - 75		
SSI-10.0-2575/D	56 - 94		
SSI-4.0-25120/D	36 - 60	2,9 - 2,2	
SSI-6.0-25120/D	54 - 90		
SSI-8.0-25120/D	72 - 120		
SSI-10.0-25120/D	90 - 150		
SSI-4.0-25192/D	57 - 96	2,9 - 2,2	
SSI-6.0-25192/D	86 - 144		
SSI-8.0-25192/D	115 - 192		
SSI-10.0-25192/D	144 - 240		
SSI-4.0-25307/D	92 - 154	2,9 - 2,2	
SSI-6.0-25307/D	138 - 230		
SSI-8.0-25307/D	184 - 307		
SSI-9.0-25307/D	207 - 346		

SSI-4.0-5075/D	22 - 38	5,7 - 4,4	16 + 17
SSI-6.0-5075/D	33 - 57		
SSI-8.0-5075/D	45 - 75		
SSI-10.0-5075/D	56 - 94		
SSI-4.0-50120/D	36 - 60	5,8 - 4,5	
SSI-6.0-50120/D	54 - 90		
SSI-8.0-50120/D	72 - 120		
SSI-10.0-50120/D	90 - 150		
SSI-4.0-50192/D	57 - 96	5,8 - 4,5	
SSI-6.0-50192/D	86 - 144		
SSI-8.0-50192/D	115 - 192		
SSI-10.0-50192/D	144 - 240		
SSI-4.0-50307/D	92 - 154	5,8 - 4,5	
SSI-6.0-50307/D	138 - 230		
SSI-8.0-50307/D	184 - 307		
SSI-10.0-50307/D	230 - 384		

Type UPM	Load range [kN]	natural frequency vertical [Hz]	see page ...
UPM 4113	17 - 29	4,0 - 3,1	18
UPM 6113	26 - 44		
UPM 8113	35 - 58		
UPM 10113	43 - 73		
UPM 12113	52 - 87		

Steel spring isolators

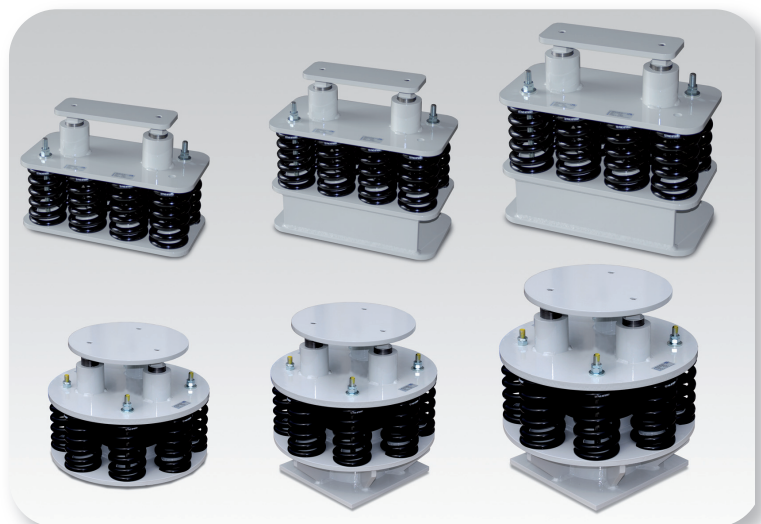
For the vibration isolation of machines and plants we offer various series and types of steel springs. Selection of the appropriate isolator depends on the required payload and the occurring frequencies. Generally speaking steel spring isolators can achieve natural frequencies ranging from 2 to 6 Hz. In contrast to air springs steel spring isolators' levels cannot be controlled.



Steel spring isolators bseries P and UPM

Our steel spring isolators contain helical steel springs complying to DIN 2089 Part 1. The tolerances at the fabrication of steel springs are based on quality grade 2 DIN 2095.

All housings of our steel spring isolators are painted in light grey (RAL 7035). On demand, your steel spring isolators will be painted in different RAL-colours.



Steel spring isolators new series SSI

Our standard steel spring isolators contain integrated level elements, which allow you to level your plant. The extensive use of shims is no longer necessary. Furthermore leveling your plant at shifting its center of gravity is possible without disassembling the steel spring isolators.



Level element

Steel spring isolators series P

Our „Small Ones“. These isolators are designed for the load range up to 3 tons. The steel spring isolators of our series P51 have a compact plastic housing, series P60, P71 and P80 a compact cast steel housing.

Steel spring isolators series SSI

Our „Standard“. These steel spring isolators are designed to isolate large presses, grinding machines and test stands. Due to the wide range of payloads from 23kN to 384kN, smaller mounting plates and machines can be isolated also. The natural frequency can vary from 1,8 - 5,8Hz to optimize the isolation to your application.

Steel spring isolators series UPM

Our „Specialists“. The series UPM is designed for setting up machines. The benefit of these isolators is the very low installation height.

If you need advice by choosing the correct steel spring isolator, please don't hesitate to contact us:

0049-(0)2471-1246-0
info@cfm-schiller.de

Fields of application

Steel spring isolators have a wide field of application. There are a lot of reasons to use steel spring isolators. Mostly they are used to protect people or buildings from harmful vibrations. Therefore the steel spring isolators are located under the machine bed or - if a seismic mass is necessary - under the concrete foundation.



Vibration isolation of a foundation with steel spring isolators SSI



Vibration isolation of a foundation with steel spring isolators SSI-D with integrated damping

A growing field is the vibration isolation of high tech machines and electronically measuring devices. To guarantee a full functionality of this kind of applications, the machines have to be protected against the environment.

Steel spring isolators are a reasonably priced and practical possibility to protect people, machines and buildings from vibrations.

Viscous dampers

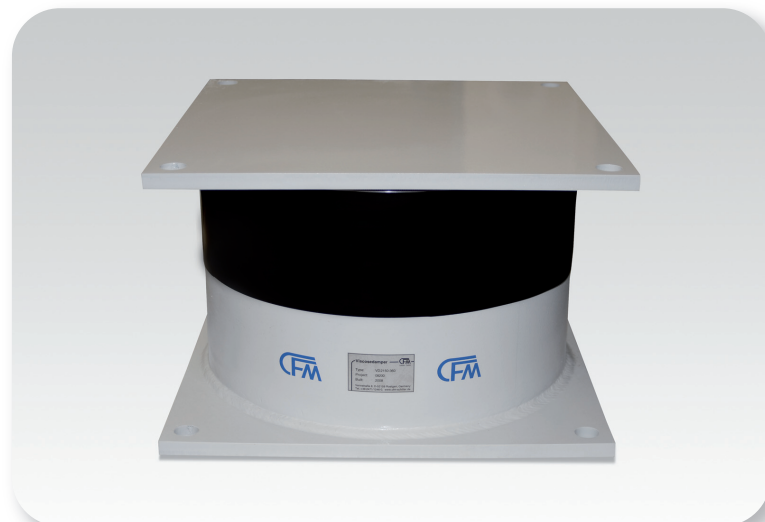
Viscous dampers are used parallel to steel springs to increase the damping ratio. Viscous dampers shorten the decay time of the caused vibrations.



Viscous damper

Viscous dampers are using the principal of fluid friction to reduce the amplitudes of a vibration. Therefore a piston is put into a viscous medium. The dampers have 6 DOF.

According to your request, our dampers are designed.

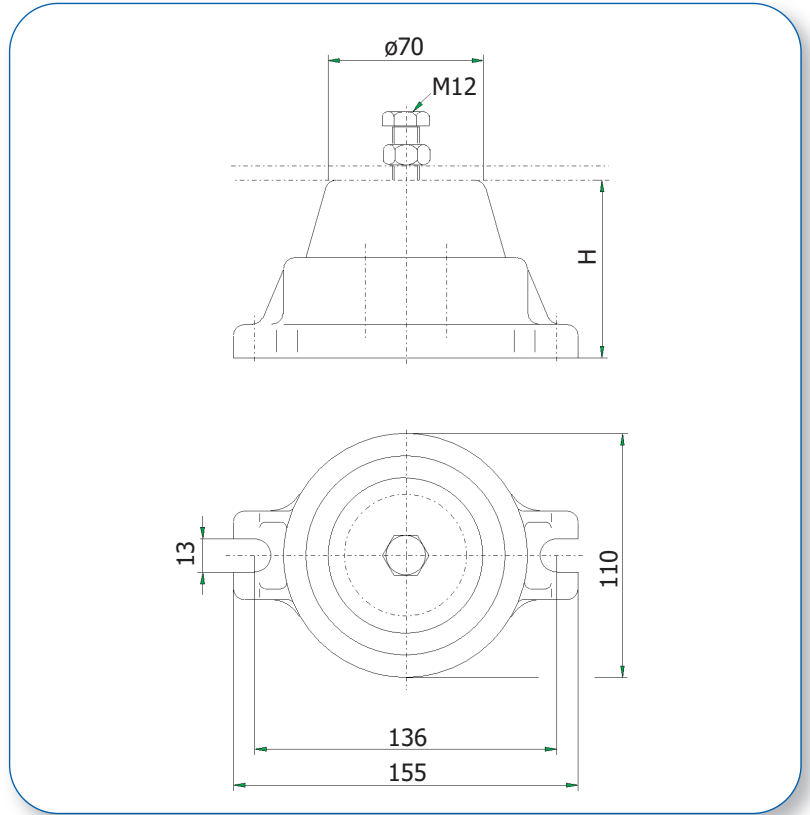


Viscous damper

Steel spring isolator P51



The steel spring isolators of our series P51 have a compact plastic housing, that covers the steel spring completely.



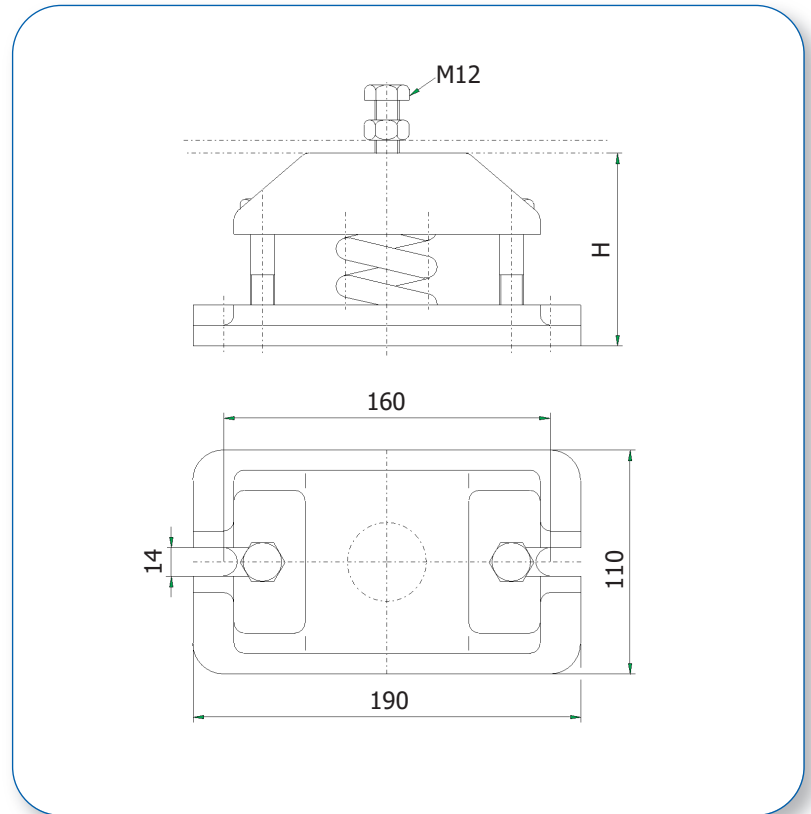
Steel spring isolator P51 Technical data

Type	Load range [kN]	Stiffness vertical [kN/cm]	natural frequency, vertical [Hz]	Height H at delivery / under load [mm]		Weight approx. [kg]
P51/122	0,07 - 0,11	0,03	3,3 - 2,6	98	72 - 57	0,7
P51/124	0,26 - 0,43	0,10	3,1 - 2,4		87 - 70	
P51/126	0,47 - 0,79	0,19	3,2 - 2,5		88 - 72	
P51/117	0,75 - 1,25	0,37	3,5 - 2,7		88 - 74	

Steel spring isolator P60



Steel spring isolators of our series P60 consist of a compact cast housing, which is coated to protect against corrosion.



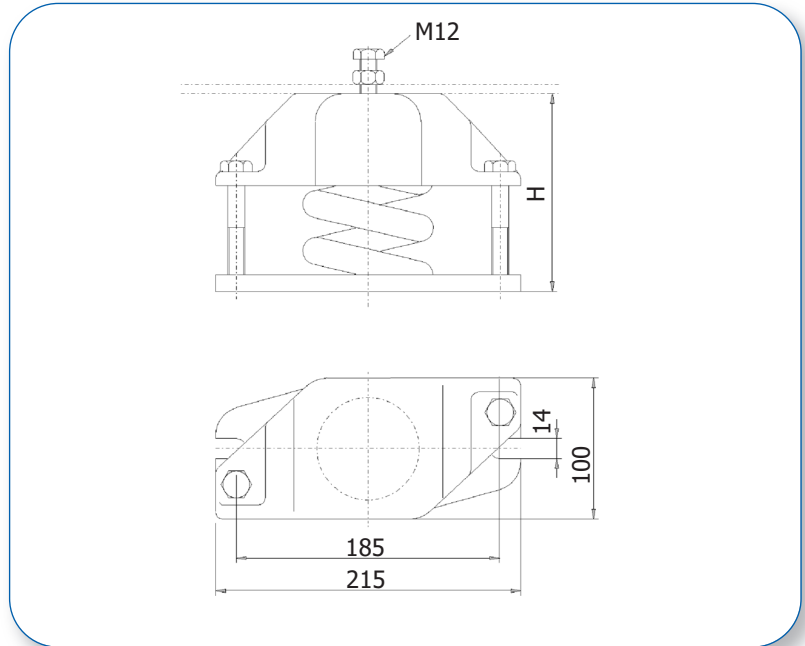
Steel spring isolator P60 Technical data

Type	Load range [kN]	Stiffness vertical [kN/cm]	natural frequency vertical [Hz]	Height H at delivery / under load [mm]		Weight approx. [kg]
P60/126	0,47 - 0,79	0,19	3,2 - 2,5	100	82 - 66	4
P60/137	0,68 - 1,13	0,21	2,8 - 2,1	110	105 - 83	
P60/117	0,75 - 1,25	0,37	3,5 - 2,7	100	82 - 68	
P60/128	1,13 - 1,88	0,41	3,0 - 2,3	110	99 - 81	
P60/119	1,28 - 2,14	0,76	3,8 - 3,0	110	98 - 87	
P60/129	1,34 - 2,23	0,57	3,3 - 2,5	110	104 - 88	
P60/1111	2,10 - 3,50	1,38	4,0 - 3,1	110	109 - 99	
P60/1112	2,54 - 4,23	1,61	4,0 - 3,0	120	116 - 106	

Steel spring isolator P71



Steel spring isolators of our series P71 consist of a compact cast housing, which is coated to protect against corrosion.



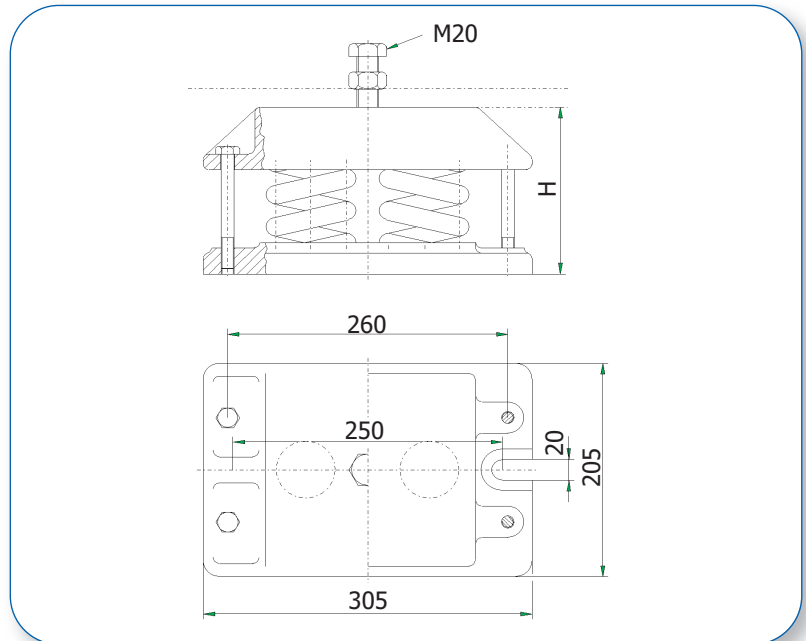
Steel spring isolator P71 Technical data

Type	Load range [kN]	Stiffness vertical [kN/cm]	natural frequency vertical [Hz]	Height H at delivery / under load [mm]		Weight approx. [kg]
P71/128	1,13 - 1,88	0,41	3,0 - 2,3	110	99 - 81	4
P71/129	1,34 - 2,23	0,57	3,3 - 2,5	110	104 - 88	
P71/1211	1,89 - 3,15	0,76	3,2 - 2,5	160	149 - 133	
P71/1312	3,04 - 5,06	0,84	2,6 - 2,0	160	156 - 132	
P71/1226	3,30 - 5,49	4,88	6,1 - 4,7	90	85 - 81	
P71/1213	4,20 - 7,00	1,69	3,2 - 2,5	160	152 - 136	
P71/1113	4,36 - 7,27	2,77	4,0 - 3,1	120	115 - 105	
P71/1228	5,70 - 9,50	8,45	6,1 - 4,7	100	94 - 90	

Steel spring isolator P80



Steel spring isolators of our series P80 consist of a compact cast housing, which is coated to protect against corrosion.

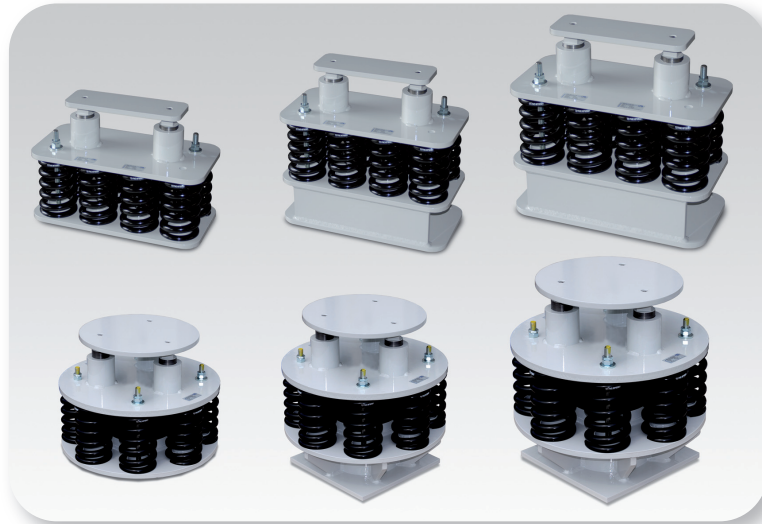


Steel spring isolator P80 Technical data

Type	Load range [kN]	Stiffness vertical [kN/cm]	natural frequency vertical [Hz]	Height H at delivery / under load [mm]		Weight approx. [kg]																																								
P80/1512	2,76 - 4,60	0,41	1,9 - 1,5	240	235 - 190	20																																								
P80/1413							4,5 - 7,59	0,95	2,3 - 1,8	210	200 - 168																																			
P80/429												5,36 - 8,93	2,28	3,3 - 2,5	135	129 - 113																														
P80/2312																	6,08 - 10,13	1,68	2,6 - 2,0	185	181 - 157																									
P80/2213																						8,39 - 13,99	3,38	3,2 - 2,5	185	177 - 161																				
P80/2113																											8,72 - 14,53	5,54	4,0 - 3,1	145	140 - 130															
P80/3312																																9,11 - 15,19	2,52	2,6 - 2,0	185	181 - 157										
P80/4312																																					12,15 - 20,25	3,36	2,6 - 2,0	185	181 - 157					
P80/4213																																										16,79 - 27,98	6,76	3,1 - 2,5	185	177 - 161
P80/4113																																														
P80/437	2,72 - 4,54	0,84	2,8 - 2,2	135	130 - 108																																									
P80/3211							5,67 - 9,45	2,28	3,2 - 2,5	185	174 - 158																																			
P80/519												6,41 - 10,69	3,80	3,9 - 3,0	135	123 - 112																														
P80/529																	6,69 - 11,16	2,85	3,3 - 2,5	135	129 - 113																									
P80/4211																						7,56 - 12,60	3,04	3,2 - 2,5	185	174 - 158																				
P80/4111																											8,39 - 13,99	5,52	4,1 - 3,1	135	134 - 124															
P80/5211																																9,45 - 15,75	3,80	3,2 - 2,5	185	174 - 158										
P80/3226																																					9,89 - 16,48	14,64	6,1 - 4,7	115	110 - 106					
P80/4112																																										10,15 - 16,91	6,44	4,0 - 3,1	145	141 - 131
P80/5111																																														
P80/3213	12,59 - 20,98	5,07	3,2 - 2,5	185	177 - 161																																									
P80/3113						13,08 - 21,80	8,31	4,0 - 3,1	145	140 - 130																																				

Steel spring isolators series SSI / SSI-D

Our steel spring isolators allow you to isolate a wide range of machines, presses and test rigs. From small mounting plates and mid-sized test rigs up to heavy presses located on huge concrete foundations. To match this wide range of requirements three ranges of natural frequencies are available:



Steel spring isolators series SSI / SSI-D

- 1.8 Hz:** to get the best degree of isolation that is possible with steel springs
- 2.5 Hz:** to get the best compromise between degree of isolation and stability for your machines and plants
- 5.0 Hz:** to get enough vertical stiffness to withstand the shock excitation of presses and shredders. In order to reduce the amplitudes to tolerable values.

Due to the same working height of the types SSI and SSI-D (integrated damper), different isolators can be combined to get the best vibration isolation system for your application.

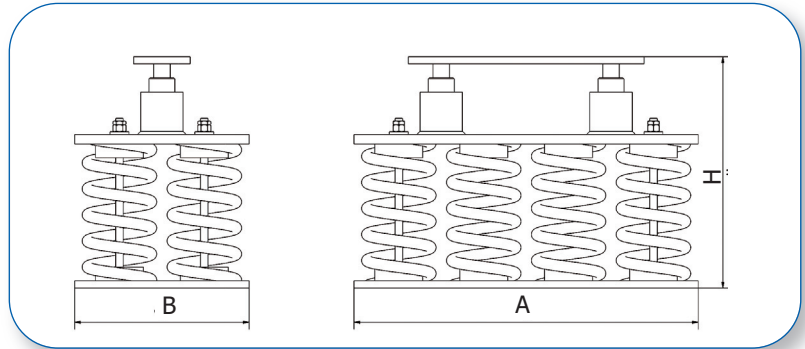
All three ranges of natural frequencies are available in a wide range of payloads.

To protect the covers from corrosion the isolators are painted (light grey, RAL 7035).

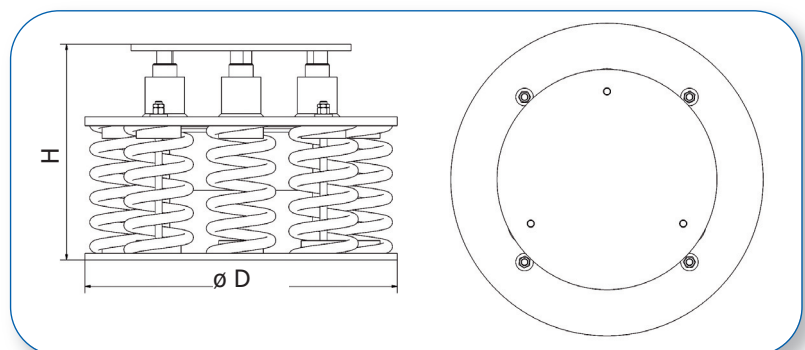
Steel spring isolators SSI/ SSI-D 1,8 Hz



Steel spring isolator series SSI



Steel spring isolator series SSI-D



Technical data for all steel spring isolators SSI/ SSI-D 1,8 Hz:

Height H [mm]	
Height without load	490
Working height	434 - 396
Height at delivery	487
Setting range leveling elements [mm]	±25
Damping (series SSI-D)	0,15

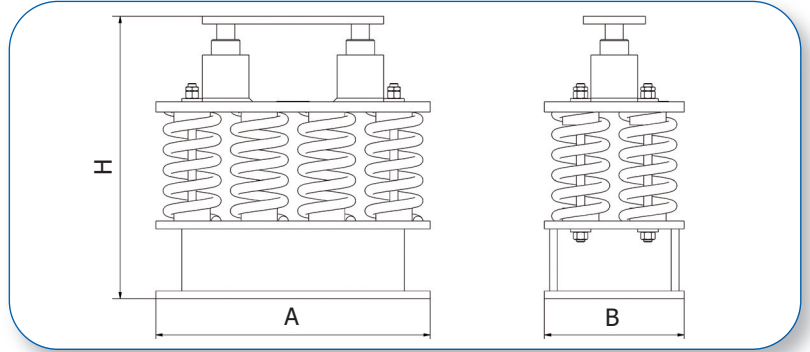
Steel spring isolator SSI/ SSI-D 1,8 Hz Technical data detailed

Type	Load range [kN]	Stiffness vertical [kN/mm]	Stiffness horizontal [kN/mm]	natural frequency vertical [Hz]	A [mm]	B [mm]	øD [mm]	Weight approx. [kg]
SSI-4.0-18182	55 - 91	0,97	0,54	2,1 - 1,6	370	370		100
SSI-6.0-18182	82 - 137	1,46	0,81	2,1 - 1,6	550	370		140
SSI-8.0-18182	109 - 183	1,94	1,08	2,1 - 1,6	730	370		182
SSI-10.0-18182	137 - 228	2,43	1,35	2,1 - 1,6	870	440		242
SSI-4.0-18182-D	55 - 91	0,97	0,54	2,1 - 1,6			710	172
SSI-6.0-18182-D	82 - 137	1,46	0,81	2,1 - 1,6			710	235
SSI-8.0-18182-D	109 - 183	1,94	1,08	2,1 - 1,6			710	258
SSI-10.0-18182-D	137 - 228	2,43	1,35	2,1 - 1,6			850	327

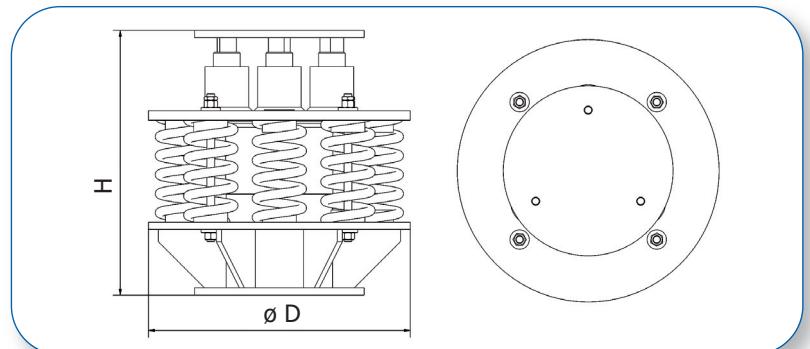
Steel spring isolator SSI/ SSI-D 2,5 Hz



Steel spring isolator series SSI



Steel spring isolator series SSI-D



Technical data for all steel spring isolators SSI/ SSI-D 2,5 Hz :

Height H [mm]	
Height without load	545
Working height	495 - 515
Height at delivery	542
Setting range leveling elements [mm]	±25
Damping (series SSI-D)	0,15

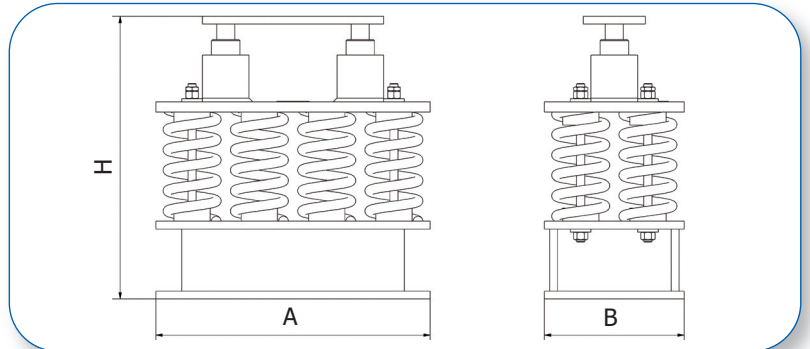
Steel spring isolator SSI/ SSI-D 2,5 Hz Technical data detailed

Type	Load range [kN]	Stiffness vertical [kN/mm]	Stiffness horizontal [kN/mm]	natural frequency vertical [Hz]	A [mm]	B [mm]	øD [mm]	Weight approx. [kg]
SSI-4.0-2575	22 - 38	0,75	0,14	2,9 - 2,2	220	190		40
SSI-6.0-2575	33 - 57	1,13	0,21		280	190		53
SSI-8.0-2575	45 - 75	1,50	0,28		370	190		68
SSI-10.0-2575	56 - 94	1,88	0,35		370	250		88
SSI-4.0-2575-D	22 - 38	0,75	0,14	2,9 - 2,2			420	53
SSI-6.0-2575-D	33 - 57	1,13	0,21				420	103
SSI-8.0-2575-D	45 - 75	1,50	0,28				420	107
SSI-10.0-2575-D	56 - 94	1,88	0,35				460	130
SSI-4.0-25120	36 - 60	1,19	0,58	2,9 - 2,2	270	270		65
SSI-6.0-25120	54 - 90	1,78	0,87		400	270		95
SSI-8.0-25120	72 - 120	2,37	1,15		530	270		123
SSI-10.0-25120	90 - 150	2,97	1,44		630	320		160
SSI-4.0-25120-D	36 - 60	1,19	0,58	2,9 - 2,2			520	135
SSI-6.0-25120-D	54 - 90	1,78	0,87				520	145
SSI-8.0-25120-D	72 - 120	2,37	1,15				540	160
SSI-10.0-25120-D	90 - 150	2,97	1,44				640	205
SSI-4.0-25192	57 - 96	1,95	2,25	2,9 - 2,2	420	420		143
SSI-6.0-25192	86 - 144	2,92	3,37		620	420		208
SSI-8.0-25192	115 - 192	3,90	4,49		820	420		272
SSI-10.0-25192	144 - 240	4,87	5,62		820	570		355
SSI-4.0-25192-D	57 - 96	1,95	2,25	2,9 - 2,2			760	265
SSI-6.0-25192-D	86 - 144	2,92	3,37				760	290
SSI-8.0-25192-D	115 - 192	3,90	4,49				780	322
SSI-10.0-25192-D	144 - 240	4,87	5,62				930	420
SSI-4.0-25307	92 - 154	3,09	5,42	2,9 - 2,2	600	600		285
SSI-6.0-25307	138 - 230	4,64	8,14		900	600		435
SSI-8.0-25307	184 - 307	6,18	10,85		900	900		592
SSI-9.0-25307	207 - 346	6,96	12,20		900	900		615
SSI-4.0-25307-D	92 - 154	3,09	5,42	2,9 - 2,2			1130	520
SSI-6.0-25307-D	138 - 230	4,64	8,14				1130	570
SSI-8.0-25307-D	184 - 307	6,18	10,85				1130	620
SSI-9.0-25307-D	207 - 346	6,96	12,20				1220	695

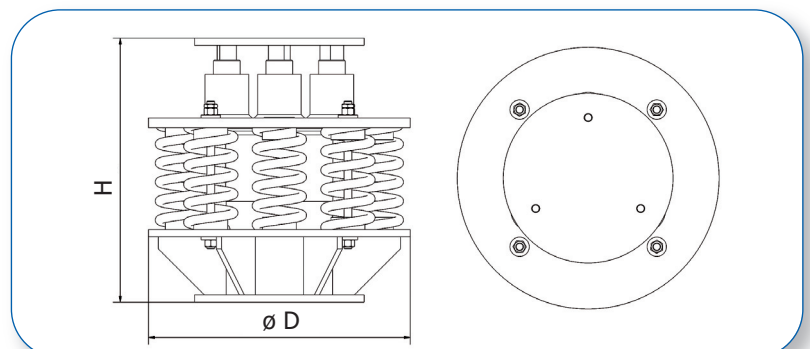
Steel spring isolator SSI/ SSI-D 5 Hz



Steel spring isolator series SSI



Steel spring isolator series SSI-D



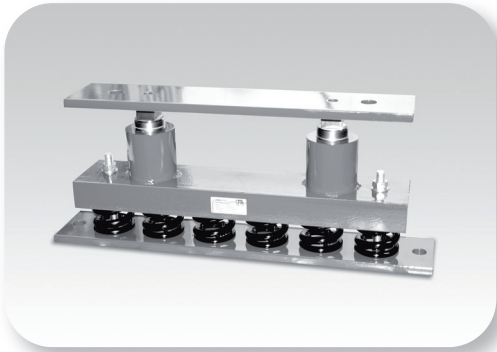
Technical data for all steel spring isolators SSI/ SSI-D 5 Hz:

Height H [mm]	
Height without load	480
Working height	472,5-467,5
Height at delivery	477
Setting range leveling elements [mm]	±25
Damping (series SSI-D)	0,15

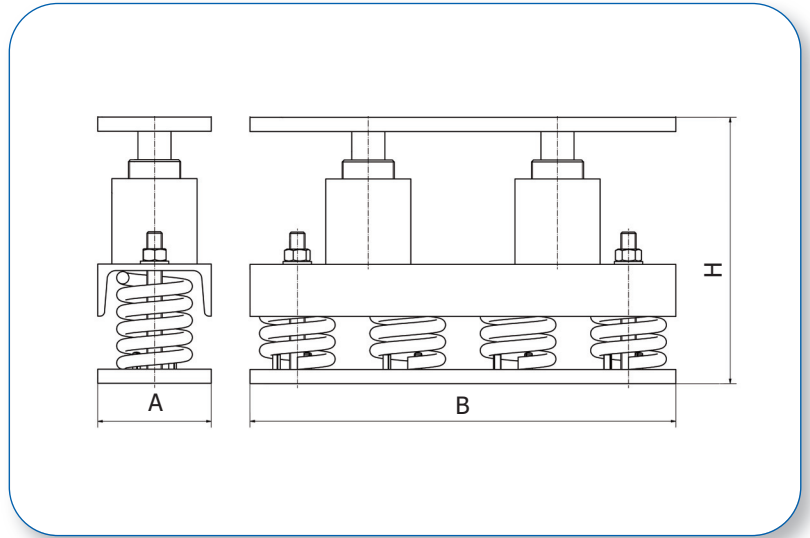
Steel spring isolator SSI/ SSI-D 5 Hz Technical data detailed

Type	Load range [kN]	Stiffness vertical [kN/mm]	Stiffness horizontal [kN/mm]	natural frequency vertical [Hz]	A [mm]	B [mm]	øD [mm]	Weight approx. [kg]
SSI-4.0-5075	22 - 38	2,96	1,48	5,7 - 4,4	210	210		42
SSI-6.0-5075	33 - 57	4,44	2,22		310	210		60
SSI-8.0-5075	45 - 75	5,92	2,96		410	210		81
SSI-10.0-5075	56 - 94	7,4	3,7		410	280		98
SSI-4.0-5075-D	22 - 38	2,96	1,48	5,7 - 4,4			430	86
SSI-6.0-5075-D	33 - 57	4,44	2,22				430	106
SSI-8.0-5075-D	45 - 75	5,92	2,96				430	109
SSI-10.0-5075-D	56 - 94	7,4	3,7				510	140
SSI-4.0-50120	36 - 60	4,82	6,64	5,8 - 4,5	360	360		115
SSI-6.0-50120	54 - 90	7,23	9,96		540	360		169
SSI-8.0-50120	72 - 120	9,64	13,28		720	360		223
SSI-10.0-50120	90 - 150	12,05	16,61		860	430		300
SSI-4.0-50120-D	36 - 60	4,82	6,64	5,8 - 4,5			730	248
SSI-6.0-50120-D	54 - 90	7,23	9,96				730	269
SSI-8.0-50120-D	72 - 120	9,64	13,28				730	291
SSI-10.0-50120-D	90 - 150	12,05	16,61				850	370
SSI-4.0-50192	57 - 96	7,73	7,51	5,8 - 4,5	310	310		82
SSI-6.0-50192	86 - 144	11,59	11,26		460	310		120
SSI-8.0-50192	115 - 192	15,46	15,01		610	310		157
SSI-10.0-50192	144 - 240	19,32	18,76		610	420		196
SSI-4.0-50192-D	57 - 96	7,73	7,51	5,8 - 4,5			650	193
SSI-6.0-50192-D	86 - 144	11,59	11,26				650	207
SSI-8.0-50192-D	115 - 192	15,46	15,01				650	220
SSI-10.0-50192-D	144 - 240	19,32	18,76				780	294
SSI-4.0-50307	92 - 154	12,56	14,30	5,8 - 4,5	340	340		103
SSI-6.0-50307	138 - 230	18,84	21,45		500	340		149
SSI-8.0-50307	184 - 307	25,12	28,60		660	340		194
SSI-10.0-50307	230 - 384	31,4	35,75		660	460		242
SSI-4.0-50307-D	92 - 154	12,56	14,30	5,8 - 4,5			690	222
SSI-6.0-50307-D	138 - 230	18,84	21,45				690	244
SSI-8.0-50307-D	184 - 307	25,12	28,60				690	262
SSI-10.0-50307-D	230 - 384	31,4	35,75				820	340

Steel spring isolator UPM (model single-row)



Steel spring isolators of our series UPM consist of a compact welded structure, which is painted to protect against corrosion.



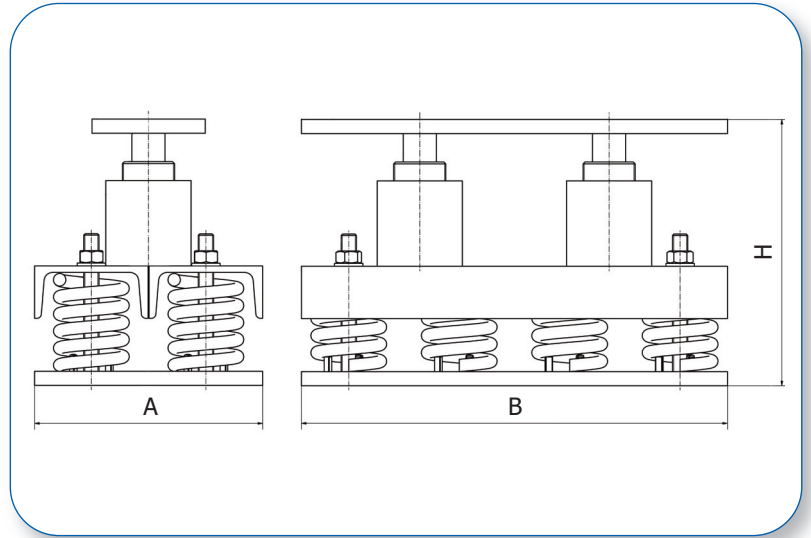
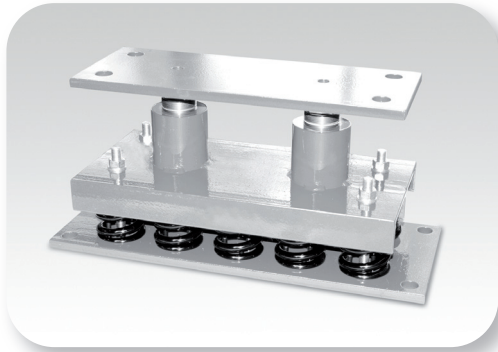
Technical data for all steel spring isolators UPM

Height H [mm]	
Height without load	281
Working height	238-293
Height at delivery	277
Setting range leveling elements [mm]	-5 / +50

Steel spring isolators UPM (springs single row) Technical data detailed

Type	Load range [kN]	Stiffness vertical [kN/mm]	Stiffness horizontal [kN/mm]	natural frequency vertical [Hz]	A [mm]	B [mm]	Weight approx. [kg]
UPM 4113	17 - 29	11,08	11,08	4,0 - 3,1	120	450	39
UPM 6113	26 - 44	16,62	16,62		120	700	43

Steel spring isolator UPM (model double-row)



Technical data
for all steel spring isolators UPM
see page left

Steel spring isolators UPM (springs double-row) Technical data detailed

Type	Load range [kN]	Stiffness vertical [kN/mm]	Stiffness horizontal [kN/mm]	natural frequency vertical [Hz]	A [mm]	B [mm]	Weight approx. [kg]
UPM 8113	35 - 58	22,16	22,16	4,0 - 3,1	240	600	66
UPM 10113	43 - 73	27,7	27,7		240	600	70
UPM 12113	52 - 87	33,24	33,24		240	700	74

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