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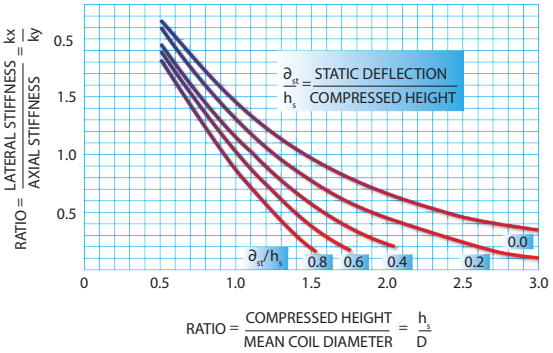
TYPE SLF

2"(51mm) DEFLECTION | FREE STANDING SPRING MOUNTS and | HEIGHT SAVING | BRACKETS

SINGLE SPRING
1" (25mm) Deflection
SLF MOUNT



SINGLE SPRING
1" (25mm) Deflection
SLFH MOUNT

MULTIPLE SPRING
1" (25mm) Deflection
SLF MOUNT

The Type **SLF** spring design evolved after many years of experience using springs within guided housing as the primary isolator. Since the old housing acted telescopically, the internal springs were designed for vertical stiffness and deflection only. Early attempts to use these tall slender springs out of their housing failed as the springs showed immediate instability or they fell over when subjected to minor horizontal forces.

It was important to eliminate the housing as they had a tendency to bind whenever they were cocked and to transmit vibration in the horizontal directions. We knew that if the springs were unhampered they would not only do better vertically, but do an equally fine job in isolating the horizontal disturbances.

Our research showed that springs could be designed with horizontal stiffnesses as high, or even higher than the vertical by carefully adhering to the ratios of the spring's compressed height to the mean coil diameter, and the static deflection to the compressed height as shown in the graph.

Starting with the 1" (25mm) deflection series, we paid great attention to these design factors and our springs became short stable columns. When we had tested and were completely satisfied with the 1" (25mm) designs, we moved on the 2" (51mm), 3"
(76mm), 4" (102mm) and 5" (127mm) deflection series. Every spring table now includes data on the ratio of the spring diameter to the compressed height, and the ratio of the horizontal to the vertical spring constants. Our specifications suggest a minimum ratio of 0.75 between the spring diameter and the compressed height as a good working rule, although some of our designs exceed this number. All of these springs are designed so as not to exceed the elastic limit when the coils are closed up
and the springs are compressed solid. This prevents damage when the springs are overloaded and assures a return to the spring's free height. The rated loads and deflections allow for 50% additional travel to solid to accommodate weight distribution
errors and to keep the springs operating in a low stress range. In our Nominal 1" (25mm) Deflection A, B, and C Spring series the smallest rated deflection is 1" (25mm) although some of the lighter springs can deflect as much as 2" (51mm). The springs are used individually or in clusters to develop greater capacity. Some of our B2 and C2 springs only meet competitive criteria and do not have 50% additional travel. This is clearly noted in our catalog Data Sheet DS-208.

In an effort to develop a foolproof simple isolator using these sophisticated springs, we have merely added a neoprene friction pad on the bottom to help prevent the passage of noise and a spring loading and adjustment bolt at the top with a locking cap screw. You will find that these adjustment bolts are very substantial because they must be made rigid enough to maintain the alignment of the top of the spring with the base plate, and the head of the bolt is actually the equipment supporting surface. The bolts are tapped to receive the locking cap screw as this methods makes it easy to remove the isolator for servicing. The 5" (127mm) deflection springs are sometimes furnished with three adjustment bolts in a tripod arrangement to maintain the top plate stability. Other stabilizing methods use single oversized bolts or pull-down brackets. In some cases SLF mountings with smaller deflections are similarly designed when there are large horizontal forces such as in the isolation of a horizontal compressor. There is no need to bolt this mounting down in most cases because of the friction pad and the spring's reduction of the horizontal forces before they get down to the base plate.

SLF mountings of the proper deflection are recommended for all vibration control applications where it is not necessary to cope with weight removal or seismic and wind load problems. Excessive discharge pressures can be dealt with by adding mass through the use of floating inertia bases or where mass is not a practical solution, by the addition of horizontal thrust restraints.

SINGLE SPRING
2" (51mm),
3" (76mm),
4" (102mm)
and
5" (127mm)
Deflection
SLF MOUNT

Steel Holders (Top & Bottom) are used when spring O.D. exceeds 7¾" (197mm)

The SLFH series of mounts are identical to the style SLF except for having two or four holes in the base to allow for bolting to the structure. Since it is expensive to bolt mountings down, and any bolting procedure tends to bypass the acoustical action of the neoprene pad on the bottom of the mounting, it is strongly recommended that you use the Type SLF unless the SLFH must be used because of elevated installations on steel beams, etc.

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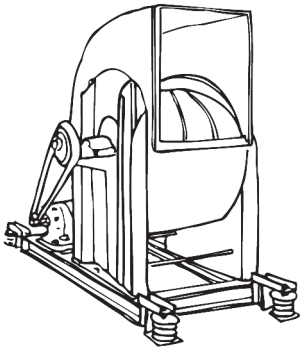
MicroVibrant®
Noise & Vibration Product

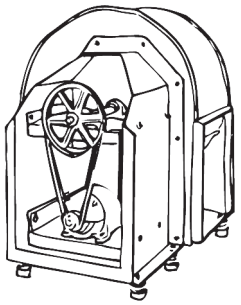
SLF

SPRING MOUNTS



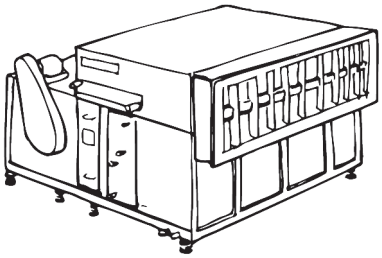
BELT DRIVEN CENTRIFUGAL FAN and MOTOR

SLF springs are used to isolate all kinds of fan equipment. Deflections are determined by fan speed, size, motor horsepower and equipment location as discussed in the VCS-I00 Engineering Specification and Selection Guide. Bases may be made of structural steel or concrete. The sketch shows a centrifugal fan on a type WFSL base with 3" (76mm) deflection springs.



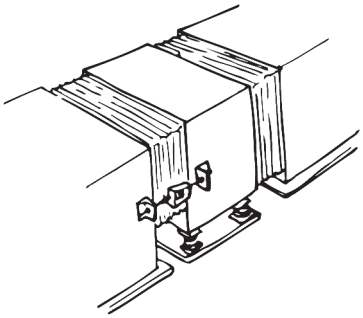
UTILITY SET

Utility sets are normally direct mounted on 1" (25mm) deflection SLF springs as illustrated. ICS rails are used in conjunction with the springs when higher deflections are required or there is an unsupported fan scroll that causes over balancing. KSL concrete filled bases are recommended for outdoor locations because of the need for wind resistance.



FACTORY ASSEMBLED AIR HANDLING EQUIPMENT

Factory assembled air handling equipment may be direct mounted as shown or placed on ICS rails when higher deflections are called for. It is important to study the equipment base or legs to determine whether rails are needed for structural reinforcement.



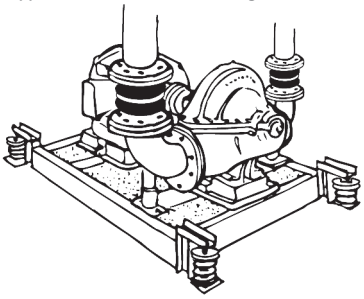
FAN HEAD

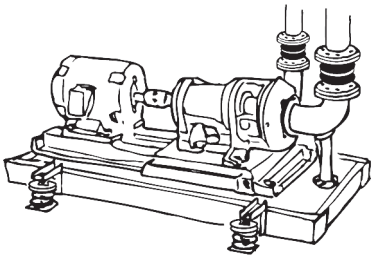
A fan head develops high horizontal thrust because of the negative pressure on the very large inlet area. The SLF springs cannot handle this thrust without Horizontal Thrust Restraints as sketched or massive concrete filled bases to increase the resistive weight and spring constants.

END SUCTION PUMP or DOUBLE SUCTION PUMP

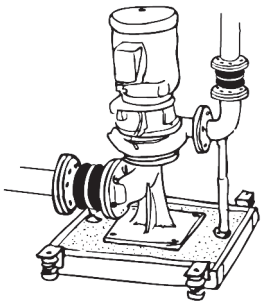
SLF spring mountings of the proper deflection are recommended for all pump isolation problems. While steel bases may be used, concrete is preferred for greater rigidity and the possibility of grouting in the pump base. Bases should be made large enough to support the suction and discharge elbows whenever possible. Thus, Double Suction bases become wide and End Suction bases long.

SLF applications are by no means limited to these sketches. We have merely tried to illustrate the many modes of application and some of the design considerations.





SLF SPRING MOUNTS

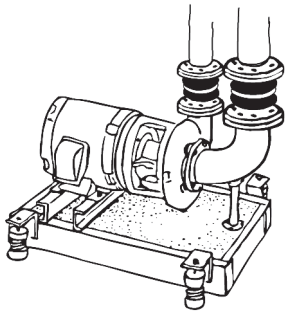


VERTICAL PUMPS

Vertical pump bases using SLF mountings should be made large enough for stability and extended as required to support the piping before attachment to the pump flanges. This piping support reduces the strain on the pump casing.

CLOSE COUPLED PUMP

Close coupled pumps are generally unstable when mounted directly on SLF mountings because they are small in configuration and have a severe overhang on the pump end. A concrete base makes them less sensitive to external forces so the installation becomes much more workmanlike and practical. SLF deflections depend on location and pump size.

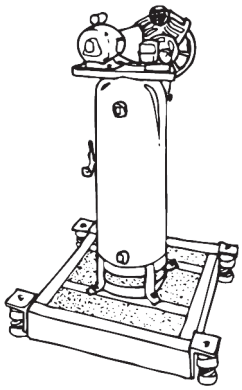


DIRECTLY DRIVEN REFRIGERATION COMPRESSOR UNIT

1" (25mm) deflection SLF mountings can be directly attached to the isolated equipment. Mountings of different capacities would be used at the two ends to compensate for the uneven weight distribution and provide reasonably uniform deflection. This use of springs of different capacity but the same potential deflection applies to all isolator selections.

BELT DRIVEN AIR COMPRESSOR

When 2" (51mm) or higher deflection SLF mountings are used we normally recommend ICS rails to minimize elevations. In this particular case the rails project beyond the flywheel to compensate for the overhang. The higher deflections are used to increase efficiency at the low operating speed.

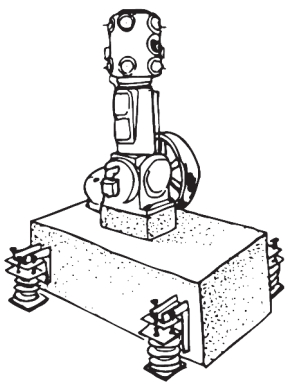


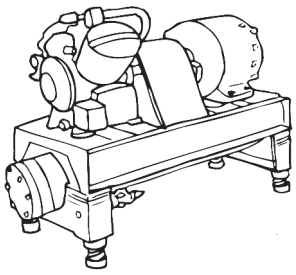
VERTICAL TANK TYPE AIR COMPRESSOR

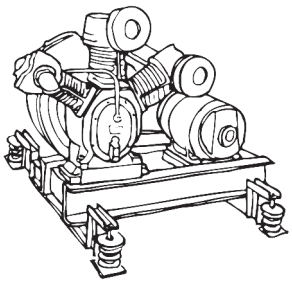
It is important to exercise caution when applying spring mountings to tall machines with small base dimensions. The use of a concrete filled type K base with SLF mountings lowers the center of gravity in addition to enlarging the base dimensions. Thus, the installation becomes much more stable.

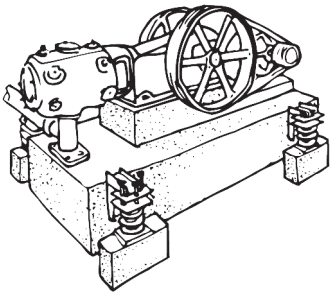
SLOW SPEED VERTICAL or HORIZONTAL COMPRESSOR or VACUUM PUMP

Slow speed, large bore and stroke reciprocating compressors or vacuum pumps have large residual unbalanced forces that make direct mounting impossible because of excessive motion. The concrete inertia block mass is calculated from unbalanced force data supplied by the manufacturer. It is often as much as seven times the equipment weight. Vertical compressors are located over the combined vertical center of gravity. The springs under horizontal compressors are elevated to the horizontal CG. Three adjustment bolts are most important to maintain horizontal SLF
stiffness.





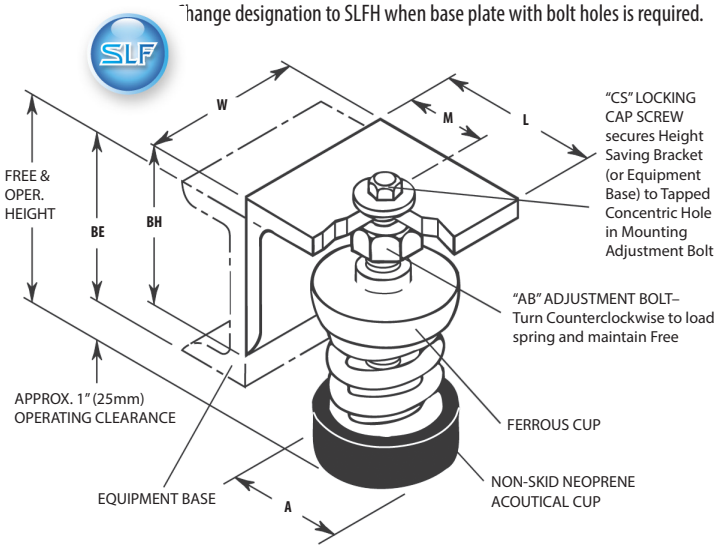


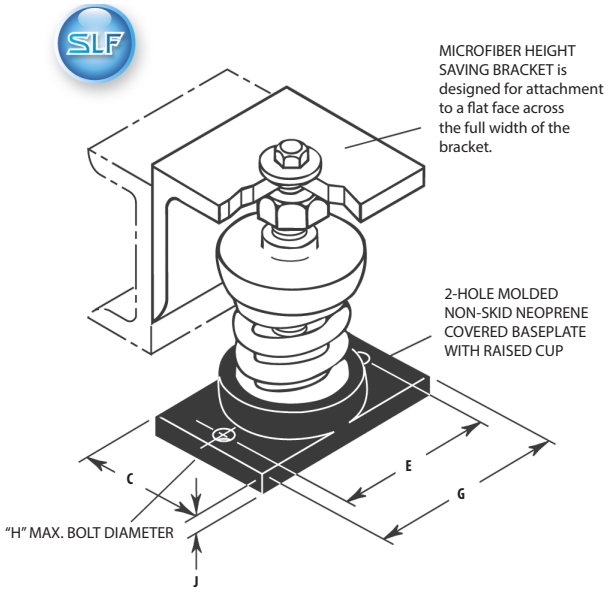


SPRING MOUNTS

1"(25mm) Deflection SLF SINGLE SPRING MOUNTS

Change designation to SLFH when base plate with bolt holes is required.





All springs have additional travel to solid equal to 50% of the rated deflection.
Solid Spring Height = Free Height minus 1.5 times Rated Deflection.

Matching Height Saving Bracket

BH- Bracket Height
BE- Bracket Elevation

Type	Size	L (in)	L (mm)	M (in)	M (mm)	W (in)	W (mm)	BE (in)	BE (mm)	BH (in)	BH (mm)
	X	2 1/2	64	2	51	3	76	2 3/4	70	2 1/2	64
SLF-	A-45 – A-400	2 1/2	64	2	51	3	76	3 1/4	83	2 1/2	64
SLFH-	A-510 – A-625	2 1/2	64	2	51	3	76	3 5/8	92	2 1/2	64
	B & C	4	102	2 3/4	70	3	76	5	127	4	102

Ratings & Dimensions for 1"(25mm) Deflection Single Spring Mounts (inches millimeters)

Type	Size	Rated Capacity (lbs)	Rated Capacity (kg)	Rated Defl. (in)	Rated Defl. (mm)	Spring Constant (lbs/in)	Spring Constant (kg/mm)	Spring Color	Spring Only Spring OD	Spring Only Free Height	Free & Oper Ht	A	C	Max. Bolt Dia. E	G	H	J	Adjustment Bolt AB	Locking Cap Screw CS
	X-23†	23	10	1.50	38	18	0.26	Brown											
	X-33†	33	15	1.30	33	30	0.45	Red											
	X-54†	54	24	1.40	36	45	0.67	White											
	X-76†	76	34	1.22	31	73	1.10	Black	1 1/2	2 1/2	3 3/4	2	–	–	–	–	–	1/2 x 2 1/2	1/4 x 1
	X-113†	113	51	1.20	30	113	1.70	Yellow	38	64	95	51	–	–	–	–	–	x 64	x 25
	X-130†	130	59	1.20	30	130	1.97	Purple											
	X-175†	175	79	1.20	30	175	2.63	Silver											
	X-210†	210	95	1.20	30	210	3.17	Blue											
	A-45	45	20	1.60	41	28	0.49	Blue											
	A-75	75	34	1.50	38	50	0.89	Orange											
	A-125	125	57	1.33	34	94	1.68	Brown	1 3/4	3	4 1/4	2 1/8	2 1/4	3	3 3/4	1/4	3/8	5/8 x 2 1/2	3/8 x 1
	A-200	200	91	1.15	29	174	3.14	Black	44	76	108	54	57	76	95	6	10	x 64	x 25
	A-310	310	141	1.00	25	310	5.64	Yellow											
SLF-	A-400	400	181	1.00	25	400	7.24	Green											
	A-510	510	231	1.00	25	510	9.24	Red	1 3/4	3 1/8									
SLFH-	A-625	625	283	1.00	25	625	11.32	White	44 1 3/4 44	79 3 3/8 86	4 5/8 117	2 1/8 54	2 1/4 57	3 76	3 3/4 95	1/4 6	3/8 10	5/8 x 2 1/2 x 64	3/8 x 1 x 25
	B-65	65	29	2.10	53	31	0.55	Brown											
	B-85	85	39	2.10	53	40	0.74	White††											
	B-115	115	52	2.00	51	57	1.02	Silver											
	B-150	150	68	2.00	51	75	1.33	Orange	2 3/8	4	6	2 3/4	2 7/8	4 1/8	5 3/8	1/2	3/8	7/8 x 4 1/4	1/2 x 1 1/4
	B-280	280	127	1.60	41	174	3.10	Green	60	102	152	70	73	105	137	13	10	x 108	x 32
	B-450	450	204	1.31	33	344	6.18	Red											
	B-750	750	340	1.12	28	670	12.14	White											
	B-1000	1000	454	1.00	25	1000	18.16	Blue											
	C-1000	1000	454	1.00	25	1000	18.16	Black											
	C-1350	1350	612	1.00	25	1350	24.48	Yellow											
	C-1750	1750	794	1.00	25	1750	31.76	Black*											
	C-2100	2100	953	1.00	25	2100	38.12	Yellow*	2 7/8	4 1/8	6	3 1/4	3 3/8	4 3/4	6 1/8	1/2	3/8	7/8 x 4 1/4	1/2 x 1 1/4
	C-2385	2385	1082	1.00	25	2385	43.28	Yellow**	73	105	152	83	86	121	156	13	10	x 108	x 32
	C-2650	2650	1202	1.00	25	2650	48.08	Red*											
	C-2935	2935	1331	1.00	25	2935	53.24	Red**											

†SLFH not available ††with BLACK stripe *with RED inner spring **with GREEN inner spring

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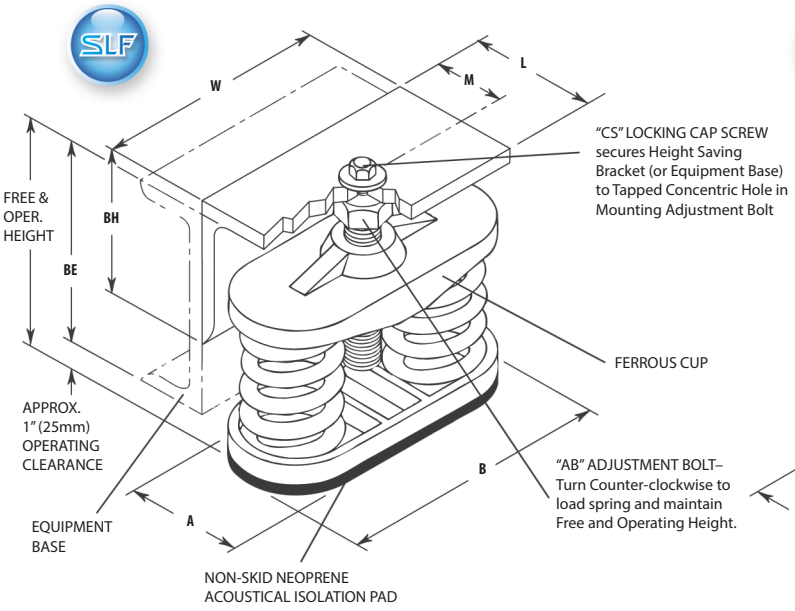
Noise & Vibration Product

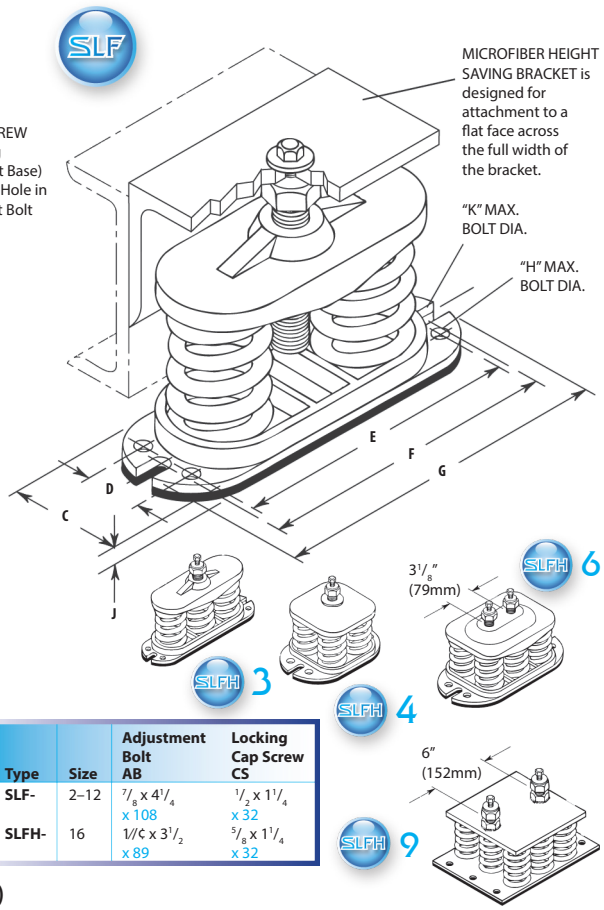
SLF SPRING MOUNTS

1"(25mm) Deflection SLF MULTIPLE SPRING MOUNTS

Change designation to SLFH when base plate with bolt holes is required.

All springs have additional travel to solid equal to 50% of the rated deflection. Solid Spring Height = Free Height minus 1.5 times Rated Deflection. Multiple spring mounts have C size springs. SLF-2, SLF-3, SLF-4, SLF-6, SLF-9, SLF-12 & SLF-16 have 2, 3, 4, 6, 9, 12 & 16 springs respectively.





Matching Height Saving Bracket

BH- Bracket Height
BE- Bracket Elevation

Type	Size	L (in)	L (mm)	M (in)	M (mm)	W (in)	W (mm)	BE (in)	BE (mm)	BH (in)	BH (mm)
	2	4	102	2 1/2	64	6	152	5	127	4	102
	3	4	102	2 1/2	64	7	178	5	127	4	102
	4	6	152	4	102	8 1/2	216	5	127	6	152
SLF-	6	7	178	5	127	11 3/4	298	5	127	7	178
SLFH-	9	8	203	5 1/2	140	11 3/4	298	5 1/4	133	7	178
	12										
	16										

Mounts have 2 adjustment bolts and special brackets are required.

Type	Size	Adjustment Bolt AB	Locking Cap Screw CS
SLF-	2–12	7/8 x 4 1/4 x 108	1/2 x 1 1/4 x 32
SLFH-	16	1//¢ x 3 1/2 x 89	5/8 x 1 1/4 x 32

Ratings & Dimensions for 1"(25mm) Deflection Single Spring Mounts (inches millimeters)

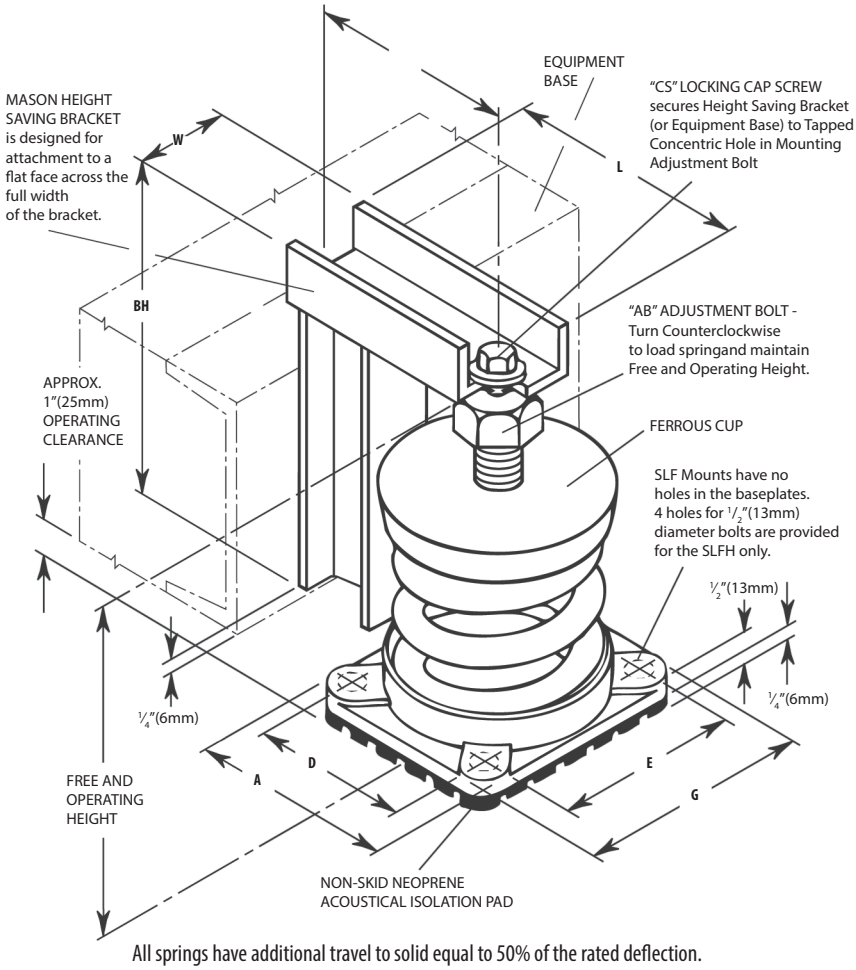
Type	Size	Rated Capacity (lbs)	Rated Capacity (kg)	Rated Defl. (in)	Rated Defl. (mm)	Spring Constant (lbs/in)	Spring Constant (kg/mm)	Spring Color/ Stripe	Spring Only Spring OD	Spring Only Free Height	Free & Oper Ht	A	B	C	D	E	F	G	Hole Max. Bolt Dia. H	J	Slot Max. Bolt Dia. K
	2-2700	2700	1225	1.00	25	2700	49.00	Yellow													
	2-3500	3500	1588	1.00	25	3500	63.52	Black*	2 7/8	4 1/8	6	3 1/4	7 3/4	3 1/4	1 3/4	8 1/4	8 1/2	10	5/16	1/2	3/8
	2-4200	4200	1905	1.00	25	4200	76.20	Yellow*	73	105	152	83	197	83	44	210	216	254	8	13	10
	3-5250	5250	2381	1.00	25	5250	95.24	Black*													
	3-6300	6300	2858	1.00	25	6300	114.32	Yellow*	2 7/8	4 1/8	6	3 3/8	9 1/2	3 3/8	1 3/4	10	10 1/4	11 3/4	5/16	1/2	3/8
SLF-	3-7155	7155	3245	1.00	25	7155	129.80	Yellow**	73	105	152	86	241	86	44	254	260	298	8	13	10
	3-7950	7950	3606	1.00	25	7950	144.24	Red*													
	4-5400	5400	2449	1.00	25	5400	97.96	Yellow													
	4-7000	7000	3175	1.00	25	7000	127.00	Black*	2 7/8	4 1/8	6	6 1/4	6 1/4	6 1/4	2 1/4	7 1/2	7 1/2	9 3/8	1/2	1/2	1/2
	4-8400	8400	3810	1.00	25	8400	152.40	Yellow*	73	105	152	159	159	159	57	191	191	238	13	13	13
SLFH-	6-12600	12600	5715	1.00	25	12600	228.60	Yellow*													
	6-14310	14310	6491	1.00	25	14310	259.64	Yellow**	2 7/8	4 1/8	6	6 3/8	9 1/2	6 3/8	2 1/4	10 3/4	10 3/4	12 5/8	1/2	1/2	1/2
	6-15900	15900	7212	1.00	25	15900	288.48	Red*	73	105	152	161	241	161	57	273	273	321	13	13	13
	6-17610	17610	7988	1.00	25	17610	319.52	Red**													
	9-18900	18900	8573	1.00	25	18900	342.92	Yellow*													
	9-21465	21465	9736	1.00	25	21465	389.44	Yellow**	2 7/8	4 1/8	7	9	9	9	6	11	—	12 1/2	1/2	1/2	—
	9-23850	23850	10818	1.00	25	23850	432.72	Red*	73	105	178	229	229	229	152	279	—	318	13	13	—
	12-25200	25200	11431	1.00	25	25200	457.24	Yellow*													
	12-28620	28620	12982	1.00	25	28620	519.28	Yellow**	2 7/8	4 1/8	7	9	12	9	6 14	—	15 1/2	1/2	1/2	1/2	—
	12-31800	31800	14424	1.00	25	31800	576.96	Red*	73	105	178	229	305	229	152	356	—	394	13	13	—
	16-33600	33600	15241	1.00	25	33600	609.64	Yellow*	2 7/8	4 1/8	8	12	13	12	6	15	—	16 1/2	1/2	1/2	—
	16-38160	38160	17309	1.00	25	38160	692.36	Yellow**	73	105	203	305	330	305	152	381		419	13	13	—

*with RED inner spring **with GREEN inner spring Mounts in gray area have steel holders top and bottom.

SPRING MOUNTS

2"(51mm), 3"(78mm), 4"(102mm) & 5"(127mm) Deflection 100 Series SLF SPRING MOUNTS

Change designation to SLFH when base plate with bolt holes is required.



All springs have additional travel to solid equal to 50% of the rated deflection.
Solid Spring Height = Free Height minus 1.5 times Rated Deflection.

Matching Height Saving Bracket

BE- Bracket Elevation

Type	Size	L (in)	L (mm)	M (in)	M (mm)	W (in)	W (mm)	BH (in)	BH (mm)
2" 51mm Defl. SLF- SLFH-	101-107	6	152	5	127	3	76	9	229
	108	7 1/2	191	6 1/2	165	3	76	10 1/4	260
	109	7 1/2	191	6 1/2	165	3	76	10 3/4	273
	110	8 1/4	210	7 1/4	184	4	102	11 3/4	298
	111	8 1/4	210	7 1/4	184	4	102	11 3/4	298
	112	8 1/4	210	7 1/4	184	4	102	12 1/4	311
	113	12	305	10 1/2	267	6	152	14 3/4	375
	114	12	305	10 1/2	267	6	152	16 3/8	416
	115	12	305	10 1/2	267	6	152	16 3/8	416
	116	12 1/2	318	11	279	6	152	17 1/2	445
	117-118	Mounts have special adjustment bolts and brackets as required.							
3" 76mm Defl. SLF- SLFH-	126-130	7 1/2	191	6 1/2	165	3	76	10 1/4	260
	131	7 1/2	191	6 1/2	165	3	76	10 3/4	273
	132	8 1/4	210	7 1/4	184	4	102	11 3/4	298
	133-137	8 3/4	222	7 3/4	197	4	102	14	356
	138-139	12 1/2	318	11	279	6	152	17 1/2	445
	140	13	330	11 1/2	292	6 1/2	152	21 1/2	546
	141-143	Mounts have special adjustment bolts and brackets as required.							
4" 102mm Defl. SLF- SLFH-	150-153	7	178	6	152	4	102	11 3/8	289
	154-155	8 1/4	210	7 1/4	184	3	76	12 1/2	318
	156-158	8 1/4	210	7 1/4	184	3	76	13 1/8	333
	159	8 1/4	210	7 1/4	184	3	76	14 1/8	359
	160-162	11	279	9 1/2	241	4	102	17 3/8	441
	163-165	14	356	12 1/2	318	6	152	21 1/8	543
	166-167	14 1/2	368	13	330	6 1/2	165	24 1/4	616
	168-169	Alternate brackets as required. (See page 8)							
5" 127mm Defl. SLF- SLFH-	174-198	Matching Height Saving Bracket as shown in illustration on page 6. Pulldown Brackets or three Adjustment Bolts are designed for each special application as required. (See page 8)							

Ratings & Dimensions for 2"(51mm) Deflection 100 Series Spring Mounts (inches mm)

Type	Size	Rated Capacity (lbs)	Rated Capacity (kg)	Rated Defl. (in)	Rated Defl. (mm)	Mount Constant (lbs/in)	Mount Constant (kg/mm)	Spring Color/ Stripe	Spring Only Spring OD	Spring Only Free Height	Free & Oper Ht	A	D	E	G	Adjustmen Bolt AB	Locking Cap Screw CS
2" 51mm Defl.	101	125	57	2.50	64	50	0.89	Purple	3 3/4 95	5 3/4 146							
	102	200	91	2.50	64	80	1.42	Brown	3 3/4 95	5 3/4 146							
	103	310	141	2.50	64	125	2.20	Pink	3 3/4 95	5 3/4 146							
	104	500	227	2.50	64	200	3.55	Green	3 3/4 95	5 3/4 146	7 1/4 184	4 1/4 108	3 1/4 83	4 102	4 3/4 120	7/8 x5 3/4 x 146	1/2 x1 1/4 x 34
	105	740	336	2.40	61	310	5.51	Red	3 3/4 95	5 3/4 146							
	106	1050	476	2.10	53	500	8.98	White	3 3/4 95	5 7/8 149							
	107	1400	635	2.00	51	700	12.45	Blue	3 3/4 95	5 7/8 149							
SLF-	108	1660	753	2.05	52	810	14.48	Silver	4 1/2 114	6 3/4 171	8 203	5 127	4 102	4 1/4 108	5 1/4 133		
	109	2250	1021	2.00	51	1125	20.02	Orange	4 1/2 114	7 1/2 191	9 229	5 127	4 102	4 1/4 108	5 1/4 133	7/8 x5 3/4 x 146	1/2 x1 1/4 x 34
	110	3000	1361	2.00	51	1500	26.69	Gray	5 127	7 1/2 191	9 229	5 1/2 140	4 1/4 108	5 1/4 133	6 1/2 165		
	111	4000	1814	2.00	51	2000	35.57	Tan	5 127	7 1/2 191	9 229	5 1/2 140	4 1/4 108	5 1/4 133	6 1/2 165		
SLFH-	112	5300	2404	2.00	51	2665	47.14	Black	5 1/2 140	8 1/2 216	10 254	6 152	4 3/4 121	5 3/4 146	7 178		
	113	7100	3221	2.00	51	3550	63.16	Yellow	6 152	8 3/4 222	10 1/2 267	6 5/8 168	5 1/4 133	6 152	7 1/2 191	1 x 6 x 152	1/2 x1 1/4 x 34
	114	9300	4218	2.00	51	4650	82.71	Blue/Orng	6 3/4 171	10 254	12 305	7 1/2 191	6 1/4 159	6 1/4 159	7 1/2 191		
	115	12600	5715	2.00	51	6300	112.06	Blue/Red	6 3/4 171	10 254	12 305	7 1/2 191	6 1/4 159	6 1/4 159	7 1/2 191		
	116	16800	7620	2.00	51	8400	149.41	Blue/White	7 3/4 197	10 1/8 257	13 330	8 1/2 216	7 1/4 184	7 1/4 184	8 1/2 216	1 1/4 x8	5/8 x1 1/2
	117	28500	12927	2.55	65	11175	198.88	Blue/Silver	8 3/4 222	13 1/8 333	16 406	9 1/2 241	8 1/2 216	8 1/2 216	9 1/2 241	1 1/2 x8	x 38
	118	40000	18144	2.10	53	19000	342.34	Blue/Gray	9 3/8 238	13 1/8 333	16 406	1 1/2 267	9 1/2 241	9 1/2 241	10 1/2 267	1 3/4 x8	x 203

*with RED inner spring **with GREEN inner spring Mounts in gray area have steel holders top and bottom.

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SLF

SPRING MOUNTS

Ratings & Dimensions for 3"(76mm), 4"(102mm) & 5"(127mm) Deflection 100 Series Spring Mounts (inches mm)

Type	Size	Rated Capacity (lbs)	(kg)	Rated Defl. (in)	(mm)	Mount Constant (lbs/in)	(kg/mm)	Spring Color/ Stripe	Spring Only Spring OD		Free Height		Free & Oper Ht		A		D		E		G		Adjust-men Bolt AB	Locking Cap Screw CS
	126	195	88	3.25	83	60	1.06	Purple	3 3/4	95	6 3/8	162	8	203	4 1/4	108	3 1/4	83	4	102	4 3/4	121		
	127	280	127	3.25	83	85	1.53	Brown	3 3/4	95	6 1/2	165	8	203	4 1/4	108	3 1/4	83	4	102	4 3/4	121		
	128	390	177	3.25	83	120	2.13	Orange	4	102	6 1/2	165	8	203	4 1/2	114	3 5/8	92	4 1/4	108	5	127	7/8x5 3/4	1/2x1 1/4
	129	520	236	3.25	83	160	2.84	Green	4	102	7	178	8 1/2	216	4 1/2	114	3 5/8	92	4 1/4	108	5	127	x 146	x 32
3"	130	710	322	3.25	83	220	3.88	Red	4 1/2	114	7 1/4	184	8 1/2	216	5	127	4	102	4 1/4	108	5 1/4	133		
76mm	131	940	426	3.25	83	290	5.13	White	4 1/2	114	7 1/2	191	9	229	5	127	4	102	4 1/4	108	5 1/4	133		
Defl.	132	1280	581	3.25	83	395	7.00	Blue	5	127	7 7/8	200	9 1/2	241	5 1/2	140	4	108	5 1/4	133	6 1/2	165		
	133	1770	803	3.25	83	545	9.67	Black	5 1/2	140	9 1/4	235	11	279	6	152	4	121	5 3/4	146	7	178		
SLF-	134	2490	1129	3.25	83	765	13.60	Yellow	5 1/2	140	9 1/4	235	11	279	6	152	4 1/4	121	5 3/4	146	7	178	1 x 6	1/2x1 1/4
	135	3300	1497	3.25	83	1000	18.04	Gray	6 3/4	152	9 1/2	241	11	279	6 5/8	168	5 1/4	133	6	152	7 1/2	191	x 152	x 32
SLFH-	136	4500	2041	3.25	83	1370	24.59	Blue/Brown	6 3/4	171	9 3/4	235	11 3/4	298	7 1/2	191	6 1/4	159	6 1/4	159	7 1/2	191		
	137	6200	2818	3.25	83	1900	33.88	Blue/Orng	7 3/4	197	10 7/8	276	13 1/4	337	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216		
	138	8300	3765	3.25	83	2560	45.36	Blue/Red	7 3/4	197	11	279	13 1/4	337	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216	1 1/4x8	5/8x1 1/2
	139	11400	5171	3.25	83	3500	62.30	Blue/White	7 3/4	197	12 1/4	311	13 1/4	337	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216	x 203	x 38
	140	15200	6895	3.25	83	4685	83.07	Blue/Silver	8 3/4	222	12 3/4	324	16 1/2	419	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241		
	141	20300	9208	3.25	83	6245	110.94	Blue/Gray	9 1/2	241	13 1/2	343	16 1/2	419	10 1/2	267	9 1/2	241	9 1/2	241	10 1/2	267	1 1/4 x 8	x 203
	142	28400	12882	3.25	83	8750	155.20	Blue/Green	10 1/4	260	15	381	18	457	11	279	10	254	10	254	11	279	1 1/2 x 8	x 203
	143	39000	17690	3.25	83	12000	213.13	Blue/Yellow	11	279	16 1/8	410	19	483	12	305	11	279	11	279	12	305	1 3/4 x 8	x 203
	150	240	109	4.38	121	55	0.98	Purple	5	127	8 3/8	213												
	151	330	150	4.38	121	75	1.35	Brown	5	127	8 1/2	213											7/8 x 8	1/2x1 1/4
	152	420	191	4.38	121	95	1.72	Orange	5	127	8 3/8	213	10	254	5 1/2	140	4 1/4	108	5 1/4	133	6 1/2	165	x 203	x 32
	153	530	240	4.38	121	120	2.16	Green	5	127	8 3/8	213												
4"	154	680	308	4.38	121	155	2.77	Red	6	152	8 7/8	225	10 3/4	273	6 5/8	168	5 1/4	133	6	152	7 1/2	191		
102mm	155	880	399	4.38	121	200	3.59	White	6	152	9 7/8	232	10 3/4	273	6 5/8	168	5 1/4	133	6	152	7 1/2	191	1 x 8	1/2x1 1/4
Defl.	156	1120	508	4.38	121	255	4.58	Blue	6	152	9 7/8	251	12	305	6 5/8	168	5 1/4	133	6	152	7 1/2	191	x 203	x 32
	157	1420	644	4.38	121	325	5.80	Black	6	152	10	254	12	305	6 5/8	168	5 1/4	133	6	152	7 1/2	191		
SLF-	158	1840	835	4.38	121	420	7.52	Yellow	6 3/4	171	10 3/8	264	12	305	7 1/2	191	6 1/4	159	6 1/4	159	7 1/2	191	1 x 8	5/8x1 1/2
	159	2370	1075	4.38	121	540	9.68	Gray	6 3/4	171	11 1/8	283	13	330	7 1/2	191	6 1/4	159	6 1/4	159	7 1/2	191	x 203	x 38
SLFH-	160	3000	1361	4.38	121	695	12.26	Blue/Brwn	7 3/4	197	10 7/8	276	14	356	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216	1 1/4 x 8	5/8x1 1/2
	161	3900	1769	4.38	121	895	15.94	Blue/Red	7 3/4	197	11 3/8	289	14	356	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216	x 203	x 38
	162	5100	2313	4.38	121	1155	20.84	Blue/Orng	8 3/4	222	11 1/2	292	14	356	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241		
	163	6500	2948	4.38	121	1485	26.56	Blue/White	8 3/4	222	13 1/4	337	17	432	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241	1 1/2 x 8	3/4 x 2
	164	8400	3810	4.38	121	1910	34.32	Blue/Silver	8 3/4	222	13 3/8	340	17	432	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241	x 203	x 51
	165	10800	4899	4.38	121	2455	44.14	Blue/Gray	9 3/8	238	14 1/8	359	17	432	10 1/2	267	9 1/2	241	9 1/2	241	10 1/2	267	1 3/4 x 8	3/4 x 2
	166	13800	6260	4.38	121	3160	56.40	Blue/Green	10	254	15 3/8	391	19	483	11	279	10	254	10	254	11	279	x 203	x 51
	167	17800	8074	4.38	121	4065	72.74	Blue/Yellow	11	279	15 7/8	403	19	483	12	305	11	279	11	279	12	305		
	168	22900	10387	4.38	121	5235	93.58	Blue/Pink	11	279	17	432	20	508	12	305	11	279	11	279	12	305	2 1/2 x 8	1 1/4 x 3
	169	30000	13608	4.38	121	6730	122.59	Blue/Tan	11 5/8	295	18	457	21	533	13	330	12	305	12	305	13	330	x 203	x 76
	174	70	122	5.31	135	50	0.90	Purple	6	152	9 7/8	251												
	175	320	145	5.31	135	60	1.07	Brown	6	152	10 1/16	256	12	305	6 5/8	168	6 1/4	159	6 1/4	159	7 1/2	191	1 x 9	1/2x1 1/4
	176	370	168	5.31	135	70	1.24	Orange	6	152	10	254											x 229	x 32
	177	460	209	5.38	137	85	1.53	Green	6	152	10 1/2	267												
	178	560	254	5.38	137	105	1.85	Red	6	152	10 3/4	273	13 1/2	343	6fi/•	168	6 1/4	159	6 1/4	159	7 1/2	191		
	179	670	304	5.38	137	125	2.22	White	6 3/4	171	11 1/16	281												
5"	180	830	376	5.38	137	155	2.74	Blue	6 3/4	171	11 3/8	289	13 1/2	343	7 1/2	191	7 1/4	184	7 1/4	184	7 1/2	191	1 x 10	1/2x1 1/4
127mm	181	1000	454	5.38	137	185	3.31	Black	6 3/4	171	11 1/8	283											x 254	x 32
Defl.	182	1240	562	5.37	136	230	4.13	Yellow	6 3/4	171	11 3/8	289												
	183	1500	680	5.37	136	280	5.00	Gray	7 3/4	197	12 7/16	316												
SLF-	184	1830	830	5.37	136	340	6.10	Pink	7 3/4	197	11 7/8	302	15	381	8 1/2	216	7 1/4	184	7 1/4	184	8 1/2	216	1 1/4x 10	5/8x1 1/2
	185	2230	1012	5.37	136	415	7.44	Silver	7 3/4	197	12	305											x 254	x 38
SLFH-	186	2710	1229	5.37	136	505	9.04	Tan	7 3/4	197	12 3/4	324												
	187	3300	1497	5.37	136	615	11.01	Blue/Orng	8 3/4	222	12 3/4	324	15	381	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241		
	188	4100	1860	5.37	136	755	13.68	Blue/Red	8 3/4	222	13 3/8	340	16	406	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241	1 1/2x 10	3/4 x 2
	189	4900	2223	5.37	136	915	16.35	Blue/White	9 1/16	230	13 7/16	341	16	406	9 1/2	241	8 1/2	216	8 1/2	216	9 1/2	241	x 254	x 51
	190	6000	1852	5.37	136	1120	20.01	Blue/Yelw	9 1/2	241	14 5/8	371	17	432	10 1/2	267	9 1/2	241	9 1/2	241	10 1/2	267		
	191	7300	2252	5.37	136	1365	24.35	Blue/Silvr	9 1/2	241	15 3/16	386	17 1/2	445	10 1/2	267	9 1/2	241	9 1/2	241	10 1/2	267		
	192	9000	2777	5.37	136	1670	30.01	Blue/Gray	10 1/4	260	15 5/8	397	18	457	11	279	10	254	10	254	11	279	1 1/4x 10	3/4x 2
	193	11000	3395	5.37	136	2040	36.69	Blue/Tan	10 1/4	260	16	406											x 254	x 51
	194	13300	6033	5.37	136	2482	44.36	Blue/Brown	11	279	16 1/4	413	19	483	12	305	11	279	11	279	12	305		
	195	16300	7394	5.37	136	3028	54.37	Blue/Pink	11 3/8	289	17 1/8	435	20	508	12	305	11	279	11	279	12	305	2 x 10	1 x 2 1/2
	196	19800	8981	5.37	136	3694	66.04	Blue/Black	11 5/8	295	18	457	21	533	13	330	12	305	12	305	13	330	x 254	x 64
	197	24200	10977	5.37	136	4506	80.71	Blue/Green	13	330	19 1/2	495	23	584	14	356	13	330	13	330	14	356		
	198	29000	13154	5.27	134	5500	98.16	Blue/Purple	13	330	19 1/8	486	23	584	14	356	13	330	13	330	14	356	2 x 10 x 254	1 1/4 x 3 x 76

Mounts in gray area have steel holders top and bottom.

MICROFIBER®

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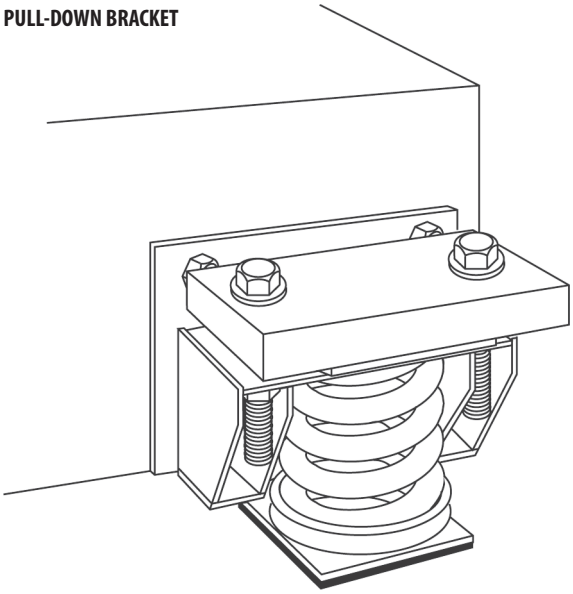
Noise & Vibration Product

SLF

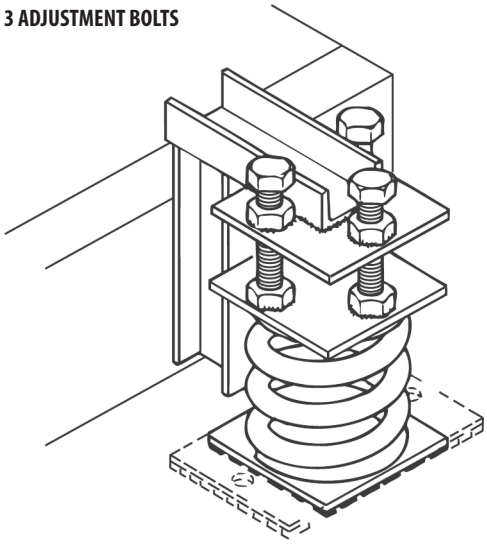
SPRING MOUNTS

Alternate bracket and spring adjustment methods to improve stability and appearance when using 4″ (102mm), 5″ (127mm) and greater deflection springs.

PULL-DOWN BRACKET



3 ADJUSTMENT BOLTS



3 ADJUSTMENT BOLTS

Spring Size	Rated Deflection	Ratio Kx/Ky	Ratio OD/OH	Spring Size	Rated Deflection	Ratio Kx/Ky	Ratio OD/OH
X	1.00-1.30	0.75-1.00	0.92-1.40	101-118	2.00-2.55	0.71-1.10	0.82-1.15
A	1.00-1.60	0.50-0.90	0.74-1.25	126-143	3.25	0.72-1.00	0.85-1.36
B	1.00-2.10	0.70-0.90	0.80-1.25	150-169	4.38	0.80-1.10	0.85-1.33
C & Multiples	1.00	0.90-1.10	0.92	174-198	5.27-5.38	0.70-1.00	0.92-1.31

PRODUCT FINISHES

All standard products have a painted finish unless otherwise indicated.
Special finishes include:

- Zinc Chromate
- Neoprene Dipping
- Cold Galvanized Paint
- Epoxy Finish
- Hot Dipped Galvanized Holders with Electro-Galvanized or Cadmium Plated Hardware, depending on size and method of attachment. Springs in these holders will be made rust resistant.

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