

# KINETICS™

## Restrained Spring Isolators Model FLS-1 and FLS-2

### Description

Kinetics Model FLS vibration isolators consist of free-standing, large diameter, laterally stable steel springs assembled into welded steel housing assemblies fabricated to limit vertical movement of the isolated equipment if equipment loads are reduced, or if the equipment is subjected to large external forces. The housings also provide a constant free and operating height to facilitate installation. Spring elements are complete with internal noise isolation pads and have an adjusting and leveling bolt as a part of the top load plate assembly. Springs are epoxy powder coated, with a 1000-hour salt spray rating per ASTM B-117. Holes are provided in all isolators for bolting to the structure and to the supported equipment. The isolator can be welded to the structure as well. To assure stability, the springs have lateral spring stiffness greater than 1.0 times the rated vertical stiffness, and are designed to provide a minimum of 50% overload capacity. FLS Springs are available with deflections to 2.03" (52 mm) and with load capacities to 15,600 lbs. (7076 kg) as standard products. Custom isolators with higher deflection and greater load capabilities are available. Kinetics Model FLS spring isolators are recommended for the isolation of vibration produced by equipment carrying a large fluid load which may be drained, such as boilers, cooling towers and chillers, and for the isolation of cooling towers, air-cooled condensers, etc., where motion due to wind loads must be minimized.

### Application

Kinetics Model FLS vertically restrained spring isolation mounts are recommended as a noise and vibration isolator for mechanical equipment located near critically quiet areas, when the equipment to be isolated has significant changes of weight during maintenance operations, and for equipment subjected to external forces or high wind loads.

Operating static deflections are available up to 4" (102 mm) to compensate for long span flexible floor structures and maintain a high degree of noise and vibration isolation.



### Specifications

Vibration isolators for equipment which is subject to load variations and large external or torquing forces shall consist of large diameter, laterally stable steel springs assembled into welded steel housing assemblies designed to limit vertical movement of the supported equipment.

Housing assembly shall be of fabricated steel members and shall consist of a top load plate complete with adjusting and leveling bolts, vertical restraints, isolation washers and a bottom plate with internal non-skid noise isolation pads and holes provided for anchoring to supporting structure. Housing shall be hot dip galvanized for corrosion resistance. Housing should be designed to provide a constant free and operating height within 1/8" (0.06 mm).

Spring elements shall have a lateral stiffness greater than 1.0 times the rated vertical stiffness and shall be designed to provide a minimum of 50% overload capacity.



# KINETICS™

## Restrained Spring Isolators Model FLS-4

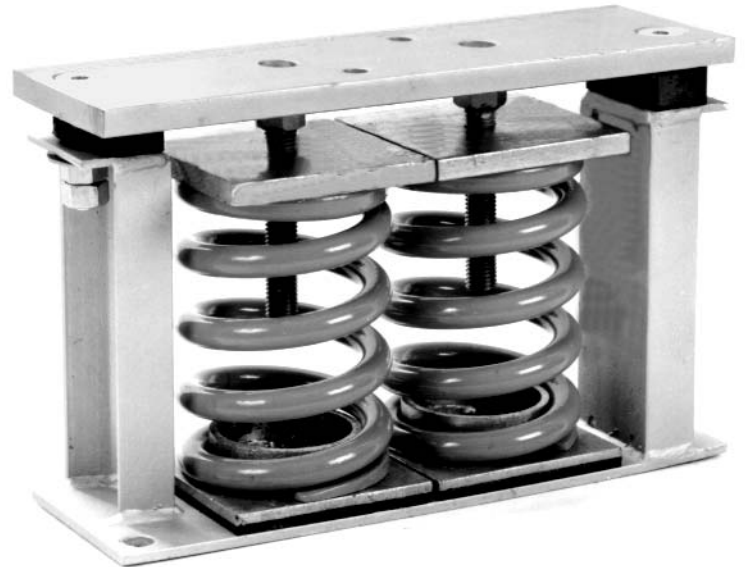
### Description

Kinetics Model FLS Vibration Isolators consist of free-standing large diameter laterally stable steel springs assembled into welded steel housing assemblies fabricated to limit vertical movement of the isolated equipment if equipment loads are reduced, or if the equipment is subjected to large external forces. The housings also provide a constant free and operating height to facilitate installation. Spring elements are complete with internal noise isolation pads and have an adjusting and leveling bolt as a part of the top load plate assembly. Springs are epoxy powder coated, with a 1000 hour salt spray rating per ASTM B-117. Holes are provided in all isolators for bolting to the structure and to the supported equipment. The isolator can be welded to the structure as well. To assure stability, the springs have a lateral spring stiffness greater than 1.2 times the rated vertical stiffness, and are designed to provide a minimum of 50% overload capacity. FLS springs are available with deflections to 4" (102 mm) and with load capacities to 23,200 lbs. (10,524 kg) as standard products. Custom isolators with higher deflection and greater load capabilities are also available.

### Application

Kinetics Model FLS vertically restrained spring isolation mounts are recommended as a noise and vibration isolator for mechanical equipment located near critically quiet areas, when the equipment to be isolated has significant changes of weight during maintenance operations, and for equipment subjected to external forces or high wind loads. Model FLS mounts are typically used to reduce the transmission of noise and vibration into supporting structures from equipment carrying a large fluid load that may be drained, such as boilers, cooling tower and chillers, and cooling towers which also require hold-down for wind loads.

Operating static deflections are available up to 4" (102 mm) to compensate for long span flexible floor structures and maintain a high degree of noise and vibration isolation.



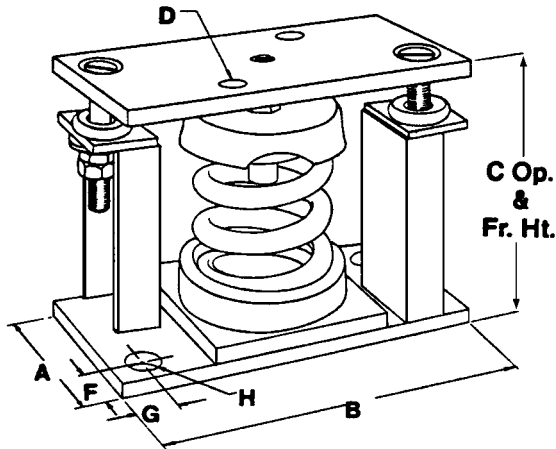
### Specifications

Vibration isolators for equipment which is subject to load variations and large external or torquing forces shall consist of large diameter laterally stable steel springs assembled into welded steel housing assemblies designed to limit vertical movement of the supported equipment.

Housing assemblies shall be fabricated steel members and shall consist of a top-load plate complete with adjusting and leveling bolts, vertical restraints, isolation washers and a bottom plate with internal non-skid noise isolation pads. Housing shall be electrozinc plated or hot dip galvanized for corrosion resistance. Housing should be designed to provide a constant free and operating height within 1/8" (0.06 mm). Spring elements shall have a lateral stiffness greater than 1.2 times the rated vertical stiffness and shall be designed to provide a minimum of 50% overload capacity. Non-welded spring elements shall be epoxy powder coated, and shall have a 1000 hr rating when tested in accordance with ASTM B-117.

Springs shall be selected to provide static deflections shown on the Vibration Isolation Schedule or as indicated on the project documents. Springs shall be color coded or otherwise identified to indicate load capacity. Vibration isolators shall be Model FLS, as manufactured by Kinetics.

Hanger Type	Spring Color	Rated Capacity		Rated Deflection		Spring O.D.		A		B		C		D		F		G		H	
		Lbs	kg	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
FLS-4-100	Gray	100	45	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-250	Blue	250	113	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-500	Green	500	227	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-750	Black	750	340	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-1000	Red	1000	454	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-1250	Brown	1250	567	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-1600	Orange	1600	726	4.00	102	5.63	143	6.00	152	10.75	273	13.00	330	.56	14	.75	19	.75	19	.69	17
FLS-4-2250	Beige	2250	1021	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-2500	Beige/Blue	2500	1134	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-2750	Beige/Green	2750	1247	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-3000	Beige/Black	3000	1361	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-3250	Beige/Red	3250	1474	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-3500	Beige/Brown	3500	1588	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-3850	Beige/Org	3850	1746	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-4200	Chrome	4200	1905	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-4450	Chr/Blue	4450	2018	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-4700	Chr/Grn	4700	2132	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-4950	Chr/Blk	4950	2245	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-5200	Chr/Red	5200	2359	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-5450	Chr/Brn	5450	2472	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-5800	Chr/Org	5800	2631	4.00	102	8.00	203	8.00	203	15.50	394	14.88	378	.69	17	1.75	44	.75	19	.69	17
FLS-4-5500	Beige/Grn	5500	2495	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-6000	Beige/Blk	6000	2722	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-6500	Beige/Red	6500	2948	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-7000	Beige/Brn	7000	3175	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-7700	Beige/Org	7700	3493	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-8400	Chrome	8400	3810	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-8900	Chr/Blue	8900	4037	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-9400	Chr/Green	9400	4264	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-9900	Chr/Black	9900	4491	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-10400	Chr/Red	10400	4717	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-10900	Chr/Brown	10900	4944	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-11600	Chr/Org	11600	5262	4.00	102	8.00	203	8.00	203	25.50	648	14.88	378	.69	17	1.75	44	1.13	29	.81	21
FLS-4-11000	Beige/Grn	11000	4990	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-12000	Beige/Blk	12000	5443	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-13000	Beige/Red	13000	5897	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-14000	Beige/Brn	14000	6350	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-15400	Beige/Org	15400	6985	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-16800	Chrome	16800	7620	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-17800	Chr/Blu	17800	8074	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-18800	Chr/Grn	18800	8528	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-19800	Chr/Blk	19800	8981	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-20800	Chr/Red	20800	9435	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-21800	Chr/Brn	21800	9888	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21
FLS-4-23200	Chr/Org	23200	10523	4.00	102	8.00	203	17.00	432	27.00	686	15.00	381	.69	17	1.00	25	1.00	25	.81	21



**United States**  
6300 Irelan Place  
P.O. Box 655  
Dublin, Ohio 43017  
Phone: 614-889-0480  
Fax: 614-889-0540

**Canada**  
1720 Meyerside Drive  
Mississauga, Ontario  
L5T 1A3  
Phone: 905-670-4922  
Fax: 905-670-1698

[www.kineticsnoise.com](http://www.kineticsnoise.com)  
[sales@kineticsnoise.com](mailto:sales@kineticsnoise.com)

Kinetics Noise Control, Inc. is continually upgrading the quality of our products. We reserve the right to make changes to this and all products without notice.