

## Description

Easyflex Model EFRSI Seismic Control Restrained Spring 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 such as a seismic events. 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. Holes are provided in all isolators for bolting to the structure and to the supported equipment. To assure stability, the springs have a lateral spring stiffness than 1.2 times the rated vertical stiffness and are designed to provide a minimum of 50% overload capacity. EFRSI isolators are available with deflections upto 2" (50 mm) and with load capacities to 15750 kg. as standard products. Custom isolators with higher deflection and greater load capabilities are also available. Easyflex Model EFRSI Spring Isolators are recommended for the isolation of vibration produced by equipment carrying a large fluid load which may be drained, such as boilers and chillers, and specially for the isolation for cooling towers, air-cooled condensers, etc. where motion due to wind loads must be minimized.



## Application

Easyflex Model EFRSI Seismic Control Restrained Spring Isolators 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 seismic events, external forces, or high wind loads.

Model EFRSI Isolators are typically used to reduce the transmission of noise and vibration into supporting structure from equipment carrying a large fluid load that may be drained, such as boilers and chillers, and cooling towers which also require hold-down for seismic and wind loads. Operating static deflections are available to 2" (50mm) to and maintain a high degree of noise and vibration isolation.

## Specifications

Vibration isolators shall be seismically rated, restrained spring isolators for equipment which is subject to load variations and large external forces. Isolators shall consist of large diameter, laterally stable, steel springs assembled into welded steel housing assemblies designed to limit movement of the supported equipment in all directions.

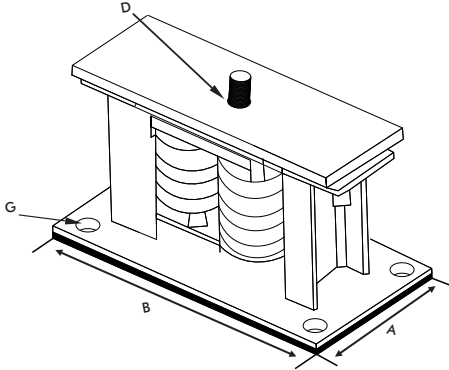
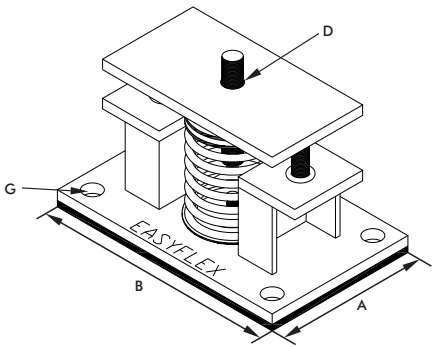
Housing assembly shall be of fabricated steel members and shall consist of a top load plate complete with adjusting and leveling bolts, adjustable vertical restraints, isolation, isolation washers, and a bottom plate with internal non-skid noise isolation pads and holes for anchoring of housing to supporting structure. Housing shall be hot-dip galvanized or powder coated for corrosion resistance. Housing shall be designed to provide a constant free and operating free and operating height within 1/8" (3mm).

The isolator housing shall provide a minimum of 1g restraint in all directions.

Spring elements shall be selected to provide static deflections as shown on the vibration isolation schedule or as indicated or required in the project documents. Springs shall be color coded or otherwise identified.

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 powder coated, and shall have a 1000 hr rating when tested in accordance with ASTM B-117.

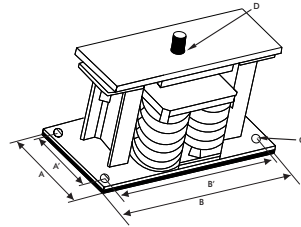
Vibration isolators shall be Model EFRSI as manufactured by Kanwal Industrial Corporation.



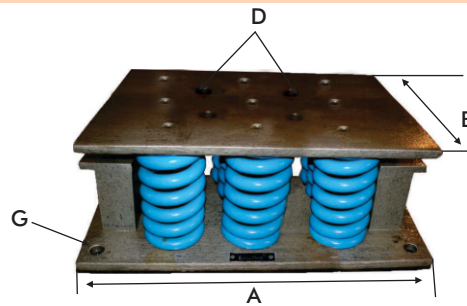
Model Type	Hanger Type	Spring Color	Rated Capacity (kg)	Rated Deflection (mm)	A (mm)	B (mm)	D (mm)	G (mm)
Model-1 (Single Spring)	EFRSI-1-30	Yellow	30	25	150	240	10	13
	EFRSI-1-60	Green	60	25	150	240	10	13
	EFRSI-1-100	Blue	100	25	150	240	10	13
	EFRSI-1-160	White	160	25	150	240	10	13
Model-1A (Single Spring)	EFRSI-1-200	Red	200	25	150	240	16	18
	EFRSI-1-300	Purple	300	25	150	240	16	18
	EFRSI-1-400	Grey	400	25	150	240	16	18
	EFRSI-1-500	Orange	500	25	150	240	16	18
	EFRSI-1-600	Brown	600	25	150	240	16	18
	EFRSI-1-700	Orange	700	25	150	240	16	18
	EFRSI-1-800	Black	800	25	150	240	16	18
	EFRSI-1-850	Green	850	25	150	240	16	18
	EFRSI-1-1050	Blue	1050	25	150	240	16	18
	EFRSI-1-1250	White	1250	25	150	240	16	18
Model-2 (Double Springs)	EFRSI-2-400	Red	400	25	150	350	18	18
	EFRSI-2-600	Purple	600	25	150	350	18	18
	EFRSI-2-800	Grey	800	25	150	350	18	18
	EFRSI-2-1000	Orange	1000	25	150	350	18	18
	EFRSI-2-1200	Brown	1200	25	150	350	18	18
	EFRSI-2-1400	Orange	1400	25	150	350	18	18
	EFRSI-2-1600	Black	1600	25	150	350	18	18
	EFRSI-2-1700	Green	1700	25	150	350	18	18
	EFRSI-2-2100	Blue	2100	25	150	350	18	18
	EFRSI-2-2500	White	2500	25	150	350	18	18

**Compliance - Springs designed according to BS 1726 (Part 1) and recommendations made by SAE (US) and ASHRAE**

## Restrained Spring Isolators



Model Type	Hanger Type	Spring Color	Rated Capacity (kg)	Rated Deflection (mm)	A' (mm)	A (mm)	B' (mm)	B (mm)	D (mm)	G (mm)
Model-3 (Four Springs)	EFRSI-4-800	Red	800	25	175	225	300	350	25	18
	EFRSI-4-1200	Purple	1200	25	175	225	300	350	25	18
	EFRSI-4-1600	Grey	1600	25	175	225	300	350	25	18
	EFRSI-4-2000	Orange	2000	25	175	225	300	350	25	18
	EFRSI-4-2400	Brown	2400	25	175	225	300	350	25	18
	EFRSI-4-2800	Orange	2800	25	175	225	300	350	25	18
	EFRSI-4-3200	Black	3200	25	175	225	300	350	25	18
	EFRSI-4-2600	Yellow	2600	25	175	225	300	350	25	18
	EFRSI-4-3400	Green	3400	25	175	225	300	350	25	18
	EFRSI-4-4200	Blue	4200	25	175	225	300	350	25	18
EFRSI-4-5000	White	5000	25	175	225	300	350	25	18	



Model Type	Hanger Type	Spring Color	Rated Capacity (kg)	Rated Deflection (mm)	A (mm)	B (mm)	D (mm)	G (mm)
Model-4 (Six Springs)	EFRSI-6-5100	Green	5100	25	500	350	25	18
	EFRSI-6-6300	Blue	6300	25	500	350	25	18
	EFRSI-6-7500	White	7500	25	500	350	25	18
	EFRSI-6-7800	Red	7800	25	500	350	25	18
	EFRSI-6-9600	Black	9600	25	500	350	25	18
	EFRSI-6-10500	Orange	10500	25	500	350	25	18
Model-5 (Nine Springs)	EFRSI-9-7650	Green	7650	25	600	400	25	18
	EFRSI-9-9450	Blue	9450	25	600	400	25	18
	EFRSI-9-11250	White	11250	25	600	400	25	18
	EFRSI-9-11700	Red	11700	25	600	400	25	18
	EFRSI-9-14400	Black	14400	25	600	400	25	18
EFRSI-9-15750	Orange	15750	25	600	400	25	18	

**Compliance - Springs designed according to BS 1726 (Part 1) and recommendations made by SAE (US) and ASHRAE**