VIBRATION MANAGEMENT CORPORATION

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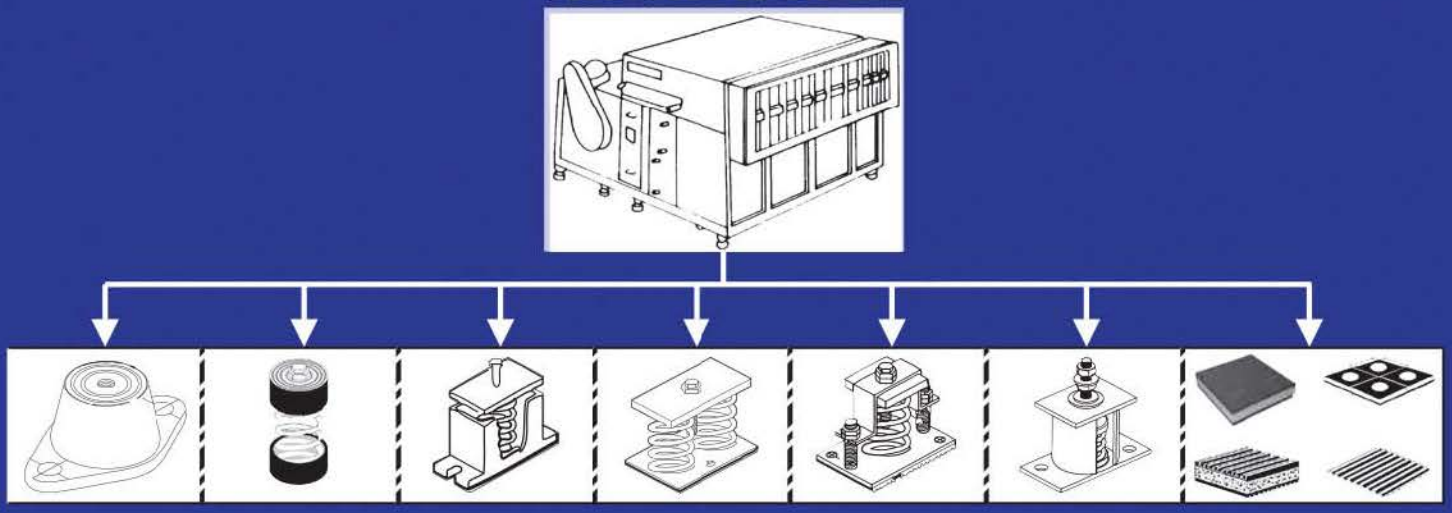
VIMCO

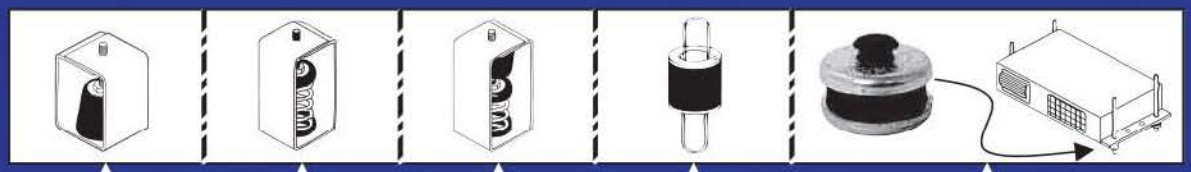
since 1983

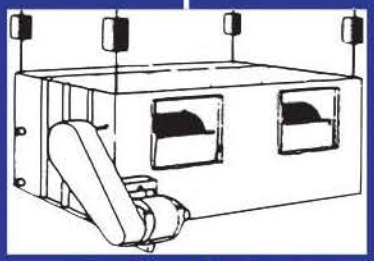
VIMCO ™

VIBRATION AND NOISE CONTROL PRODUCTS

FLOOR MOUNTED SYSTEMS







SUSPENDED SYSTEMS

Local Representative :

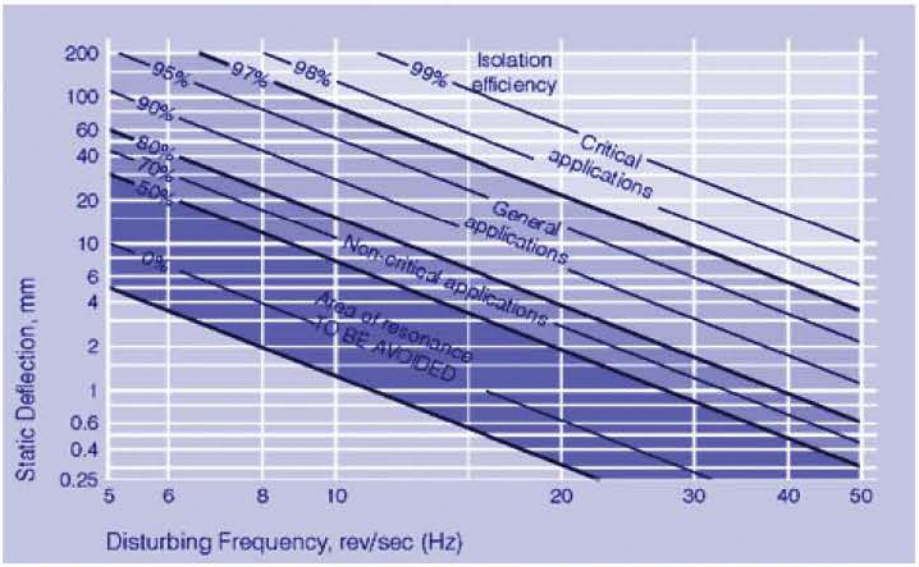
Due to our policy of continual product development and improvement, all specifications are subject to change without prior notice. Please consult your local rep. for updates.

Catalog no.
G - 1010
Rev. **4**

INTRODUCTION

VIMCO is pleased and excited to update our newest marketing literature: the G-1010 booklet. This booklet provides condensed information on our entire range of vibration and noise isolation products. The information includes product features, application information, dimensional data and model selection tables. We expect this booklet to be an invaluable resource for engineers, representatives, distributors and contractors.

One new tool that we are introducing in this latest literature is our *exclusive isolator 5 star rating system*. Vibration isolation efficiency is directly related to the amount of deflection (compression) of the isolating element. The isolation efficiency chart below illustrates the theoretical relationship between isolation efficiency, disturbing frequency and isolator static deflection



Disturbing frequency *is the frequency of vibration produced by an unbalanced, rotating or reciprocating movement in mass.*

Natural frequency *is the number of complete cycles of oscillation a mass will vibrate in a given unit of time if a force displaces it from its equilibrium position and allows it to vibrate freely.*

Static deflection *is the distance an isolator will deflect under the static or dead weight of the equipment.*

Isolation efficiency *is the percentage reduction in the amplitude of the transmitted mechanical vibration.*

We have classified our range of vibration isolators in 5 category's based on their isolation efficiency as detailed below. Each isolator selection table within this catalog indicates the isolator star rating.

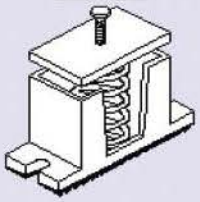
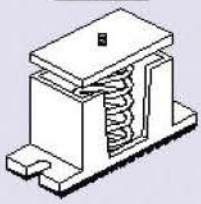
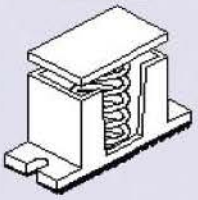
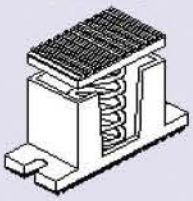
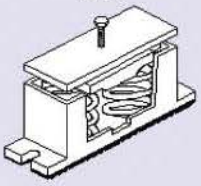
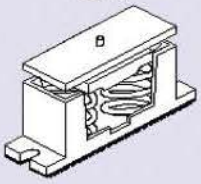
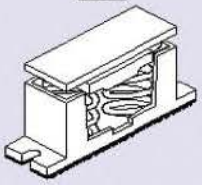
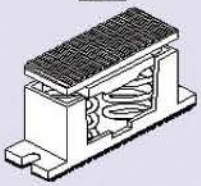
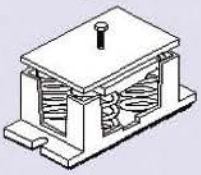
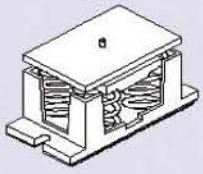
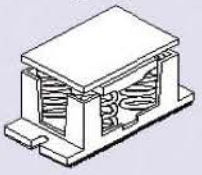
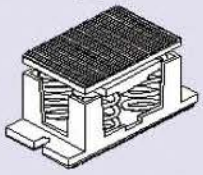
Star rating	Isolator Deflection	Isolator efficiency	Performance classification
★	up to 0.20"	92%	Basic
★★	from 0.21" to 0.50"	96%	Moderate
★★★	from 0.51" to 1.50"	98%	Good
★★★★	from 1.51" to 2.50"	99%	Very Good
★★★★★	more than 2.50"	99.5%	Excellent

** Isolator efficiencies are nominal based on equipment disturbing frequency of 1800rpm*

PICTORIAL INDEX

VIMCO

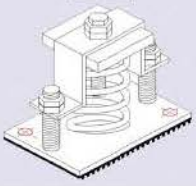
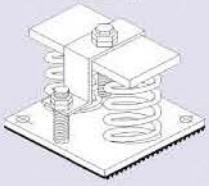
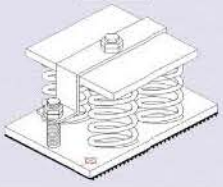
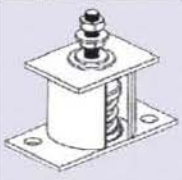
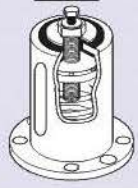
HOUSED SPRING MOUNTS

External Height Adjustment	Internal Height Adjustment			
	Pin top	Flat top	Pad top	
ZA / AA-1	ZB / AB-1	ZC / AC-1	ZD / AD-1	
				
AA-2	AB-2	AC-2	AD-2	Page **5**
				
AA-4	AB-4	AC-4	AD-4	
				

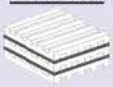
FREE STANDING SPRING MOUNTS

Weld free construction					Welded construction					
BN / BA / BB	BO / BD / BE	BP / BG / BH	BR / BS / BT	BQ / BK / BL	OSM-1A	OSM-1B	OSM-1	OSM-2	OSM-4	Page **6 - 8**
										

RESTRAINED SPRING MOUNTS

Vertical Restraint			All-Directional Restraint Seismic Rated		
RSM-1	RSM-2	RSM-4	SSMA-1 / SSMB-1	SSM-1	Page **9 - 10**
					

VIBRATION ISOLATION PADS

3RFP	RMP	CRMP	ECRMP	SRMP-2R	SRMP-3R	SRMP-2E	SRMP-3E	
								Page **11**

PICTORIAL INDEX (contd.)

VIMCO

RUBBER ISOLATORS

Rubber-in-shear mounts		Light Duty Hangers		Rubber-in-shear hangers		
FMD-A / FMD-B	FMD-E / FMD-F	AVHM	HNW	HND / APH	HNDE / APHE	Page 12 - 13
						

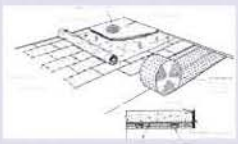
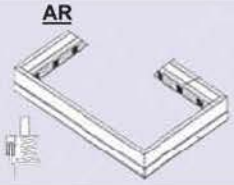
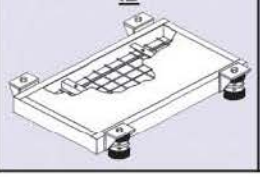
SPRING / NEO-SPRING HANGERS

Spring Hangers	Combination Neo-Spring Hangers	
HSS / HSF / HSA / HSB / HSD / HSE	HNSA / HNSB / HNSD / HNSE / HNSF / HSB-HM	Page 14 - 15
		

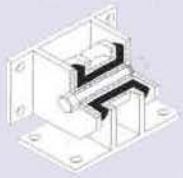
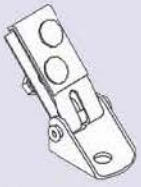
EXPANSION JOINTS

Stainless Steel Bellow Type		Rubber Bellow Type					
Threaded connection	Flanged connection	Union/Screwed connection		Flanged connection		Control units	
JF-500-T	JF-500 / JF-500-H	FCU FCU-SH	FCU-T FCU-TH	FCS	FCT	CRU / CRT	Page 16 - 18
							

FLOATING FLOOR / BASES / RAILS / AIR MOUNTS / SEISMIC SNUBBERS

Floating Floor	Air Mounts	Roof Curb Rails	Bolted Inertia Bases	Welded Inertia Bases	
	AMA	AR	BIB	IB	Page 19 - 21
					

SEISMIC RESTRAINTS

Snubbers	Cable Restraint System				
SNB3-3050	SC	SCRSCB	SCRSC	Tools	Page 22
					

SPRINGS

	Page 23

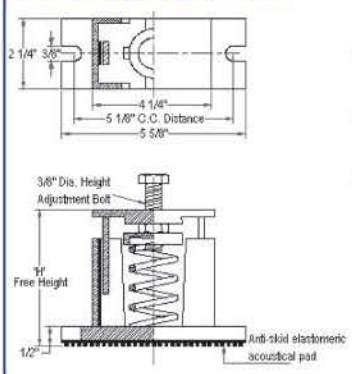
Housed Spring Mounts

Features + Application Information

1. Powder coated cast iron housings (70-110 micron ASTMD4138-07a)
2. Internal elastomeric snubbers prevent metal to metal contact
3. Anti-skid elastomeric acoustical pad
4. Built-in leveling device
5. Adjust mounting so that upper housing clears lower housing by at least 1/4" but not more than 1/2"
6. Spring elements color-coded for easy field verification
7. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

ZA / ZB / ZC / ZD models



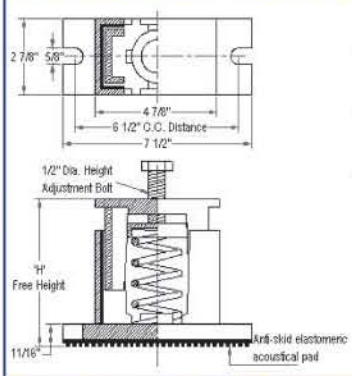

Model ZA:
External adjustment


Model ZB:
Internal adjustment, pin top


Model ZC:
Internal adjustment, flat top


Model ZD:
Internal adjustment, neoprene top

AA-1 / AB-1 / AC-1 / AD-1 models



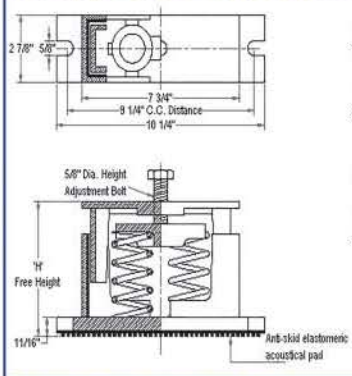

Model AA-1:
External adjustment


Model AB-1:
Internal adjustment, pin top


Model AC-1:
Internal adjustment, flat top


Model AD-1:
Internal adjustment, neoprene top

AA-2 / AB-2 / AC-2 / AD-2 models



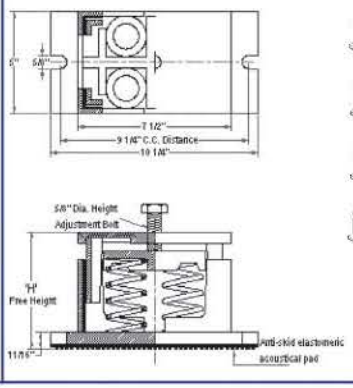

Model AA-2:
External adjustment


Model AB-2:
Internal adjustment, pin top


Model AC-2:
Internal adjustment, flat top


Model AD-2:
Internal adjustment, neoprene top

AA-4 / AB-4 / AC-4 / AD-4 models




Model AA-4:
External adjustment


Model AB-4:
Internal adjustment, pin top


Model AC-4:
Internal adjustment, flat top


Model AD-4:
Internal adjustment, neoprene top

(Refer to page 2 for isolator star rating system)

1" deflection series ★★★

Model	Load Range (lbs)	H
* ZA/ZB/ZC/ZD-121	1 to 50	ZA: 4" ZB: 4-1/4" ZC: 4-1/4" ZD: 4-1/2"
* ZA/ZB/ZC/ZD-122	51 to 80	
* ZA/ZB/ZC/ZD-123	81 to 130	
* ZA/ZB/ZC/ZD-124	131 to 210	
* ZA/ZB/ZC/ZD-125	211 to 300	
* ZA/ZB/ZC/ZD-126	301 to 370	
* ZA/ZB/ZC/ZD-127	371 to 700	
* AA/AB/AC/AD-1-109	701 to 750	AA-1: 5-1/2" AB-1: 5-7/8" AC-1: 5-7/8" AD-1: 6-1/8"
* AA/AB/AC/AD-1-110	751 to 910	
* AA/AB/AC/AD-1-111	911 to 1080	
* AA/AB/AC/AD-1-112	1081 to 1250	
* AA/AB/AC/AD-1-109-113	1251 to 1330	
* AA/AB/AC/AD-1-110-113	1331 to 1380	
* AA/AB/AC/AD-1-111-113	1381 to 1550	
* AA/AB/AC/AD-1-112-113	1551 to 1832	
* AA/AB/AC/AD-2-111	1833 to 2160	AA-2: 5-3/4" AB-2: 6-1/4" AC-2: 6-1/4" AD-2: 6-1/2"
* AA/AB/AC/AD-2-112	2161 to 2500	
* AA/AB/AC/AD-2-109-113	2501 to 2660	
* AA/AB/AC/AD-2-110-113	2661 to 2760	
* AA/AB/AC/AD-2-111-113	2761 to 3100	
* AA/AB/AC/AD-2-112-113	3101 to 3665	
* AA/AB/AC/AD-4-111	3666 to 4330	AA-4: 6" AB-4: 6-1/2" AC-4: 6-1/2" AD-4: 6-3/4"
* AA/AB/AC/AD-4-112	4331 to 5000	
* AA/AB/AC/AD-4-109-113	5001 to 5330	
* AA/AB/AC/AD-4-110-113	5331 to 5530	
* AA/AB/AC/AD-4-111-113	5531 to 6200	
* AA/AB/AC/AD-4-112-113	6201 to 7330	

2" deflection series ★★★★

Model	Load Range (lbs)	H
* AA/AB/AC/AD-1-081	1 to 40	AA-1: 5-1/2" AB-1: 5-7/8" AC-1: 5-7/8" AD-1: 6-1/8"
* AA/AB/AC/AD-1-082	41 to 60	
* AA/AB/AC/AD-1-083	61 to 110	
* AA/AB/AC/AD-1-084	111 to 195	
* AA/AB/AC/AD-1-085	196 to 350	
* AA/AB/AC/AD-1-086	351 to 450	
* AA/AB/AC/AD-1-087	451 to 606	
* AA/AB/AC/AD-1-142-146B	607 to 667	AA-1: 6-1/2" AB-1: 6-7/8" AC-1: 6-7/8" AD-1: 7-1/8"
* AA/AB/AC/AD-1-147	668 to 1190	
* AA/AB/AC/AD-1-148A	1191 to 1576	
* AA/AB/AC/AD-1-147-146B	1577 to 1690	
* AA/AB/AC/AD-1-148A-146B	1691 to 2076	
* AA/AB/AC/AD-2-147	2077 to 2380	AA-2: 6-3/4" AB-2: 7-1/4" AC-2: 7-1/4" AD-2: 7-1/2"
* AA/AB/AC/AD-2-148A	2381 to 3152	
* AA/AB/AC/AD-2-147-146B	3153 to 3380	
* AA/AB/AC/AD-2-148A-146B	3381 to 4152	
* AA/AB/AC/AD-4-147	4153 to 4760	AA-4: 7" AB-4: 7-1/2" AC-4: 7-1/2" AD-4: 7-3/4"
* AA/AB/AC/AD-4-148A	4761 to 6305	
* AA/AB/AC/AD-4-147-146B	6306 to 6760	
* AA/AB/AC/AD-4-148A-146B	6761 to 8305	

** Choose appropriate model based on mounting style diagrams on left*

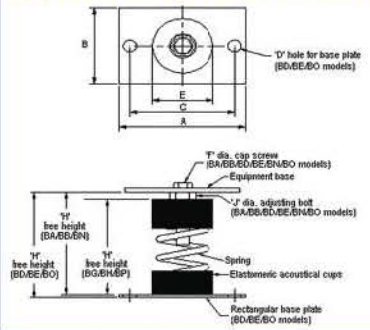
Free Standing Spring Mounts - Weld Free

Features + Application Information

1. Large diameter laterally stable springs
2. Anti-skid elastomeric acoustical cup / pad
3. Built-in leveling device (except BP/BG/BH series)
4. Spring elements color-coded for easy field verification
5. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

BA / BB / BD / BE / BG / BH / BN / BO / BP models

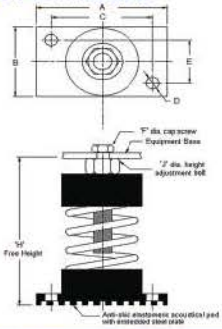


Model BN/BA/BB: w/o base plate

Model BO/BD/BE: with metal base plate

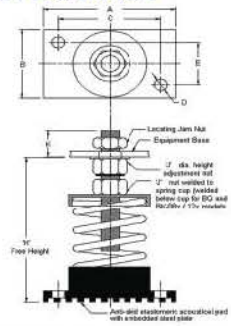
Model BP/BG/BH: w/o height adjustment or anchoring option

BR / BS / BT models



Model BR/BS/BT. with rubber base plate

BK / BL / BQ models



Model BQ/BK: with top metal cup and rubber base plate

Model BL: with top metal cup and rubber base plate

Mount Series	Dimensions						
	A	B	C	D	E	F	J
BA	n/a	n/a	n/a	n/a	2-3/8"	3/8"	5/8"
BB	n/a	n/a	n/a	n/a	2-7/8"	3/8"	5/8"
BD	6"	4"	5"	5/8"	2-3/8"	3/8"	5/8"
BE	6"	4"	5"	5/8"	2-7/8"	3/8"	5/8"
BG	n/a	n/a	n/a	n/a	2-3/8"	n/a	n/a
BH	n/a	n/a	n/a	n/a	2-7/8"	n/a	n/a
BK	4-1/2"	2-1/2"	3-1/2"	3/8"	1-1/2"	n/a	3/8"
BL	5"	3"	3-3/4"	5/8"	1-13/16"	n/a	5/8"
BN	n/a	n/a	n/a	n/a	1-1/2"	1/4"	3/8"
BO	4"	2"	3"	3/8"	1-1/2"	1/4"	3/8"
BP	n/a	n/a	n/a	n/a	1-1/2"	n/a	n/a
BQ	3-1/2"	1-5/8"	2-1/2"	3/8"	5/8"	n/a	3/8"
BR	3-1/2"	1-5/8"	2-1/2"	3/8"	5/8"	1/4"	3/8"
BS	4-1/2"	2-1/2"	3-1/2"	3/8"	1-1/2"	3/8"	5/8"
BT	5"	3"	3-3/4"	5/8"	1-13/16"	3/8"	5/8"

(Refer to page 2 for isolator star rating system)

WELD FREE CONSTRUCTION

0.75" deflection series ★★★

Model	Load Range (lbs)	H
* BN/BO/BP/BQ/BR-021	1 to 25	BN : 2-1/2"
* BN/BO/BP/BQ/BR-022	26 to 55	BO : 2-5/8"
* BN/BO/BP/BQ/BR-023	56 to 85	BP : 2"
* BN/BO/BP/BQ/BR-024	86 to 125	BQ : 2-7/8"
		BR : 2-5/8"

1" deflection series ★★★

Model	Load Range (lbs)	H
* BN/BO/BP/BQ/BR-041	1 to 15	BN : 3-1/4"
* BN/BO/BP/BQ/BR-042	16 to 35	BO : 3-3/8"
* BN/BO/BP/BQ/BR-043	36 to 65	BP : 2-3/4"
* BN/BO/BP/BQ/BR-044	66 to 90	BQ : 3-1/4"
* BN/BO/BP/BQ/BR-045	91 to 185	BR : 3-3/8"
* BA/BD/BG/BK/BS-124	186 to 210	BA : 4-1/2"
* BA/BD/BG/BK/BS-125	211 to 300	BD : 4-5/8
* BA/BD/BG/BK/BS-126	301 to 370	BG : 3-3/4"
* BA/BD/BG/BK/BS-127	371 to 700	BK : 4"
		BS : 4-1/2"
* BB/BE/BH/BL/BT-156	701 to 750	BB : 5-1/2"
* BB/BE/BH/BL/BT-157	751 to 910	BE : 5-5/8"
* BB/BE/BH/BL/BT-158	911 to 1500	BH : 4-3/4"
* BB/BE/BH/BL/BT-159	1501 to 2082	BL : 5-7/8"
* BB/BE/BH/BL/BT-159-161	2083 to 2603	BT : 5-1/2"

2" deflection series ★★★★

Model	Load Range (lbs)	H
* BA/BD/BG/BK/BS-081	1 to 40	
* BA/BD/BG/BK/BS-082	41 to 60	
* BA/BD/BG/BK/BS-083	61 to 110	BA : 5-3/4"
* BA/BD/BG/BK/BS-084	111 to 195	BD : 5-7/8
* BA/BD/BG/BK/BS-085	196 to 350	BG : 5"
* BA/BD/BG/BK/BS-086	351 to 450	BK : 5-1/4"
* BA/BD/BG/BK/BS-087	451 to 606	BS : 5-3/4"
* BB/BE/BH/BL/BT-206	607 to 870	BB : 7-7/8"
* BB/BE/BH/BL/BT-207	871 to 1157	BE : 8"
* BB/BE/BH/BL/BT-206-219	1158 to 1540	BH : 7-1/8"
* BB/BE/BH/BL/BT-207-219	1541 to 1827	BL : 8-1/4"
		BT : 7-7/8"

3" deflection series ★★★★★

Model	Load Range (lbs)	H
* BB/BE/BH/BL/BT-181	1 to 100	
* BB/BE/BH/BL/BT-182	101 to 160	
* BB/BE/BH/BL/BT-183	161 to 220	BB : 7-7/8"
* BB/BE/BH/BL/BT-184	221 to 332	BE : 8"
* BB/BE/BH/BL/BT-185	333 to 600	BH : 7-1/8"
* BB/BE/BH/BL/BT-186	601 to 890	BL : 8-1/4"
* BB/BE/BH/BL/BT-187	891 to 1157	BT : 7-7/8"
* BB/BE/BH/BL/BT-186-199	1158 to 1540	
* BB/BE/BH/BL/BT-187-199	1541 to 1825	

** Choose appropriate model based on mounting style diagrams on left*

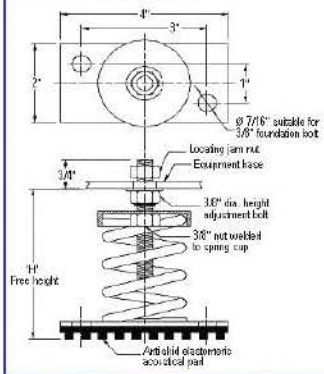
Free Standing Spring Mounts - Welded

Features + Application Information

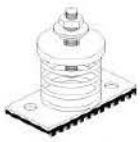
1. Large diameter laterally stable springs
2. Anti-skid elastomeric acoustical pad
3. Built-in leveling device
4. Spring elements color-coded for easy field verification
5. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

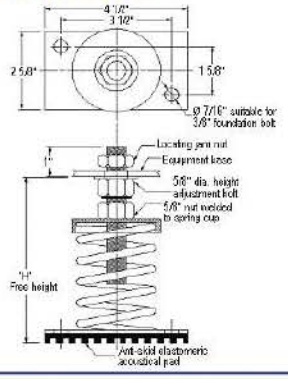
OSM-1A models



**WELDED CONSTRUCTION*
(CUP TYPE)
**Mounting holes furnished standard*
**Galvanized finish*



OSM-1B models



**WELDED CONSTRUCTION*
(CUP TYPE)
**Mounting holes furnished standard*
**Galvanized finish*

(Refer to page 2 for isolator star rating system)

WELDED CONSTRUCTION

1" deflection series ★★★

Model	Load Range (lbs)	H
OSM-1A-121	1 to 50	3-3/4"
OSM-1A-122	51 to 80	
OSM-1A-123	81 to 130	
OSM-1A-124	131 to 210	
OSM-1A-125	211 to 300	
OSM-1A-126	301 to 370	
OSM-1A-127	371 to 700	
OSM-1B-156	701 to 750	5-5/8"
OSM-1B-157	751 to 910	
OSM-1B-158	911 to 1500	
OSM-1B-159	1501 to 2082	
OSM-1B-159-161	2083 to 2603	

2" deflection series ★★★★

Model	Load Range (lbs)	H
OSM-1A-081	1 to 40	5"
OSM-1A-082	41 to 60	
OSM-1A-083	61 to 110	
OSM-1A-084	111 to 195	
OSM-1A-085	196 to 350	
OSM-1A-086	351 to 450	
OSM-1A-087	451 to 606	
OSM-1B-206	607 to 875	7-3/4"
OSM-1B-207	876 to 1157	
OSM-1B-206-219	1158 to 1540	
OSM-1B-207-219	1541 to 1827	

3" deflection series ★★★★★

Model	Load Range (lbs)	H
OSM-1B-181	1 to 100	7-3/4"
OSM-1B-182	101 to 160	
OSM-1B-183	161 to 220	
OSM-1B-184	221 to 332	
OSM-1B-185	333 to 600	
OSM-1B-186	601 to 890	
OSM-1B-187	891 to 1157	
OSM-1B-186-199	1158 to 1540	
OSM-1B-187-199	1541 to 1825	

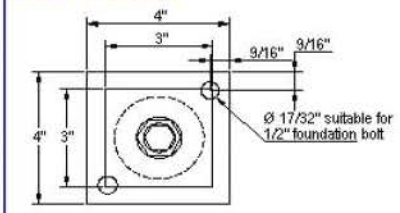
Free Standing Spring Mounts - Welded

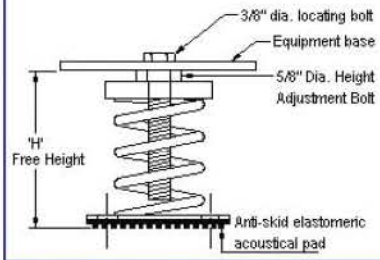
Features + Application Information

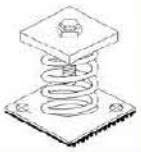
1. Large diameter laterally stable springs
2. Welded steel construction & galvanized finish
3. Anti-skid elastomeric acoustical pad
4. Mounting holes furnished as standard
5. Built-in leveling device
6. Spring elements color-coded for easy field verification
7. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

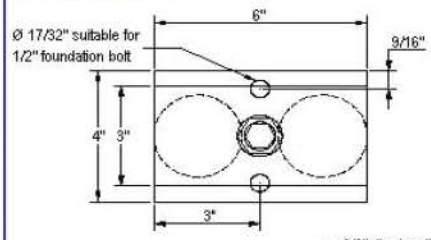
OSM-1 models

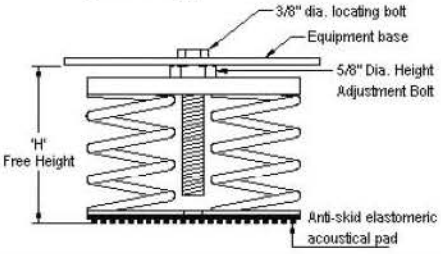


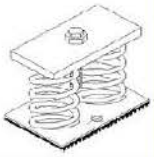




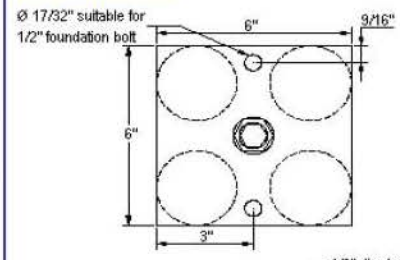
OSM-2 models

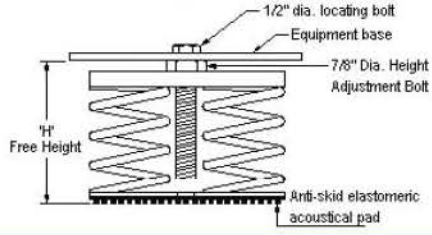


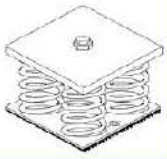




OSM-4 models







	Model	Load Range (lbs)	H
1" deflection series ★★★★	OSM-1-150	1 to 100	4-7/8"
	OSM-1-151	101 to 180	
	OSM-1-152	181 to 270	
	OSM-1-153	271 to 370	
	OSM-1-154	371 to 500	
	OSM-1-155	501 to 620	
	OSM-1-156	621 to 750	
	OSM-1-157	751 to 910	
	OSM-1-158	911 to 1500	
	OSM-1-159	1501 to 2082	
	OSM-1-159-161	2083 to 2603	
	OSM-2-158	2604 to 3000	4-7/8"
	OSM-2-159	3001 to 4166	
	OSM-2-159-161	4167 to 5207	
	OSM-4-158	5208 to 6000	5-1/8"
	OSM-4-159	6001 to 8332	
	OSM-4-159-161	8333 to 10416	
	Model	Load Range (lbs)	H
2" deflection series ★★★★★	OSM-1-081	1 to 40	5-1/4"
	OSM-1-082	41 to 60	
	OSM-1-083	61 to 110	
	OSM-1-084	111 to 195	
	OSM-1-085	196 to 350	
	OSM-1-086	351 to 450	
	OSM-1-087	451 to 606	
	OSM-2-085	607 to 700	5-1/4"
	OSM-2-086	701 to 900	
	OSM-2-087	901 to 1212	
	OSM-2-142-146B	1213 to 1334	6-1/4"
	OSM-2-147	1335 to 2380	
	OSM-2-148A	2381 to 3152	
	OSM-2-147-146B	3153 to 3380	
	OSM-2-148A-146B	3381 to 4152	
	OSM-4-147	4153 to 4760	6-1/2"
	OSM-4-148A	4761 to 6306	
	OSM-4-147-146B	6307 to 6760	
	OSM-4-148A-146B	6761 to 8306	
	Model	Load Range (lbs)	H
3" deflection series ★★★★★	OSM-1-181	1 to 100	7-1/4"
	OSM-1-182	101 to 160	
	OSM-1-183	161 to 220	
	OSM-1-184	221 to 332	
	OSM-1-185	333 to 600	
	OSM-1-186	601 to 890	
	OSM-1-187	891 to 1157	
	OSM-1-186-199	1158 to 1540	
	OSM-1-187-199	1541 to 1825	
	OSM-2-187	1826 to 2315	7-1/4"
	OSM-2-186-199	2316 to 3080	
	OSM-2-187-199	3081 to 3650	
	OSM-4-187	3651 to 4630	7-1/2"
	OSM-4-186-199	4631 to 6160	
	OSM-4-187-199	6161 to 7310	

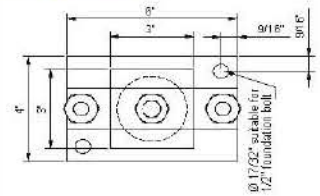
Vertically Restrained Spring Mounts

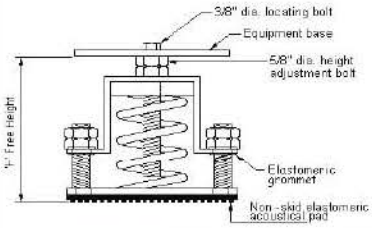
Features + Application Information

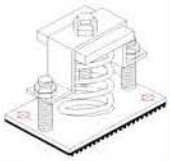
1. Applications requiring vertical restraint due to reduced equipment loads or large external forces e.g. wind
2. Welded steel construction & galvanized finish
3. Mounting holes furnished as standard
4. Elastomeric 'non-short circuiting' grommets
5. Built-in leveling device
6. Spring elements color-coded for easy field verification
7. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

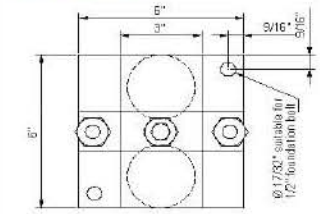
RSM-1 models

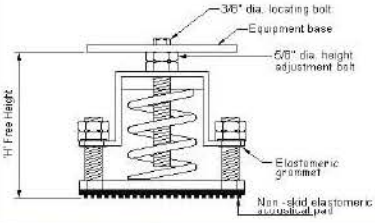


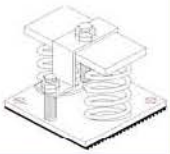




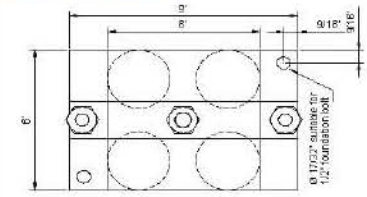
RSM-2 models

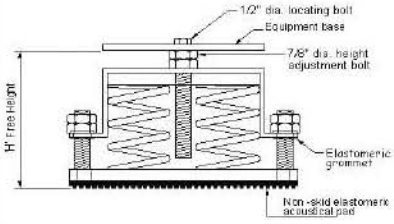


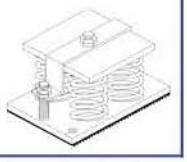




RSM-4 models







** RESTRICTO™ assembly limits vertical movement due to reduced loads or external forces (wind loads)*

** Adjust RESTRICTO™ assembly vertical limiting nuts as per clearance levels specified by project engineer (standard: 1/4", maximum: 1/2")*

	Model	Load Range (lbs)	H
1" deflection series ★★★★	RSM-1-150	1 to 100	5-7/8"
	RSM-1-151	101 to 180	
	RSM-1-152	181 to 270	
	RSM-1-153	271 to 370	
	RSM-1-154	371 to 500	
	RSM-1-155	501 to 620	
	RSM-1-156	621 to 750	
	RSM-1-157	751 to 910	
	RSM-1-158	911 to 1500	
	RSM-1-159	1501 to 2082	
	RSM-1-159-161	2083 to 2603	
	RSM-2-158	2604 to 3000	6"
	RSM-2-159	3001 to 4166	
	RSM-2-159-161	4167 to 5207	
	RSM-4-158	5208 to 6000	6-1/2"
	RSM-4-159	6001 to 8332	
	RSM-4-159-161	8333 to 10416	
	Model	Load Range (lbs)	H
2" deflection series ★★★★	RSM-1-081	1 to 40	7-1/4"
	RSM-1-082	41 to 60	
	RSM-1-083	61 to 110	
	RSM-1-084	111 to 195	
	RSM-1-085	196 to 350	
	RSM-1-086	351 to 450	
	RSM-1-087	451 to 606	
	RSM-2-085	607 to 700	7-3/8"
	RSM-2-086	701 to 900	
	RSM-2-087	901 to 1212	
	RSM-2-142-146B	1213 to 1334	7-3/8"
	RSM-2-147	1335 to 2380	
	RSM-2-148A	2381 to 3152	
	RSM-2-147-146B	3153 to 3380	
	RSM-2-148A-146B	3381 to 4152	
	RSM-4-147	4153 to 4760	7-7/8"
	RSM-4-148A	4761 to 6306	
	RSM-4-147-146B	6307 to 6760	
	RSM-4-148A-146B	6761 to 8306	
	Model	Load Range (lbs)	H
3" deflection series ★★★★	RSM-1-181	1 to 100	8-1/4"
	RSM-1-182	101 to 160	
	RSM-1-183	161 to 220	
	RSM-1-184	221 to 332	
	RSM-1-185	333 to 600	
	RSM-1-186	601 to 890	
	RSM-1-187	891 to 1157	
	RSM-1-186-199	1158 to 1540	
	RSM-1-187-199	1541 to 1825	
	RSM-2-187	1826 to 2315	8-3/8"
	RSM-2-186-199	2316 to 3080	
	RSM-2-187-199	3081 to 3650	
	RSM-4-187	3651 to 4630	8-7/8"
	RSM-4-186-199	4631 to 6160	
	RSM-4-187-199	6161 to 7310	

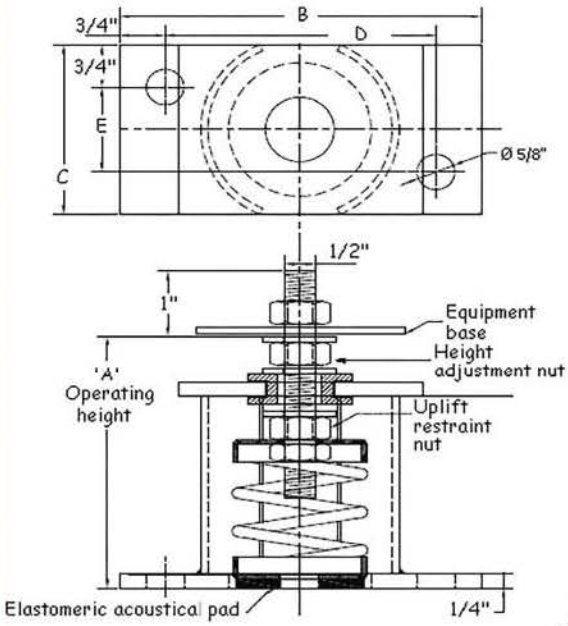
Seismic Restrained Spring Mounts (All-Directional)

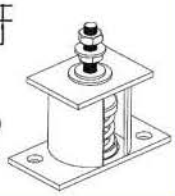
Features + Application Information

1. Large diameter laterally stable springs
2. Welded steel construction
3. Built-in leveling device
4. Mounting holes furnished as standard
5. All isolators certified to withstand minimum 1.39 G force
6. Suitable for most seismic zone IV applications
7. Spring elements color-coded for easy field verification
8. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

SSMA-1 / SSMB-1 models



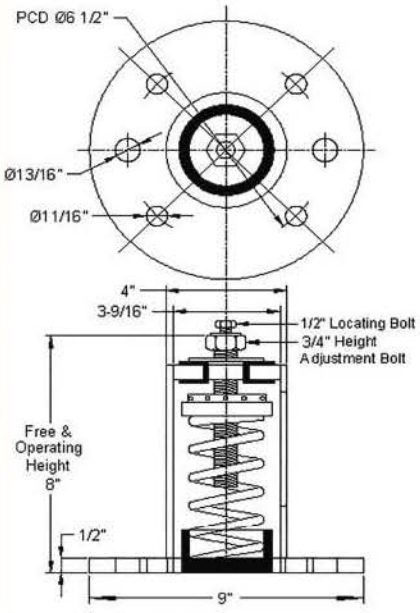


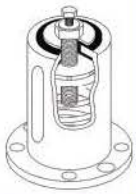
*Powder coated housing (50-70 micron ASTMD4138-07a)

*Housing will be elevated from ground when installed. Pull down to floor with anchor bolts.

Mount Series	Dimensions				
	A	B	C	D	E
SSMA-1	4-5/8"	6"	3"	4-1/2"	1-1/2"
SSMB-1	7-3/8"	7"	4"	5-1/2"	2-1/2"

SSM-1 models





*Zinc metallized housing

(Refer to page 2 for isolator star rating system)

1" deflection series ★★★

Model	Load Range (lbs)	'G' Rating
SSMA-1-121	1 to 50	32.50
SSMA-1-122	51 to 80	19.69
SSMA-1-123	81 to 130	11.81
SSMA-1-124	131 to 210	7.51
SSMA-1-125	211 to 300	5.28
SSMA-1-126	301 to 370	4.33
SSMA-1-127	371 to 700	2.32
* SSMB/SSM-1-156	701 to 750	4.82 / 6.74
* SSMB/SSM-1-157	751 to 910	3.95 / 5.52
* SSMB/SSM-1-158	911 to 1500	2.41 / 3.37
* SSMB/SSM-1-159	1501 to 2082	1.73 / 2.42
* SSMB/SSM-1-159-161	2083 to 2603	1.39 / 1.94

2" deflection series ★★★★

Model	Load Range (lbs)	'G' Rating
* SSMB/SSM-1-081	1 to 40	90.50 / 126.46
* SSMB/SSM-1-082	41 to 60	57.92 / 80.94
* SSMB/SSM-1-083	61 to 110	32.53 / 45.47
* SSMB/SSM-1-084	111 to 195	18.32 / 25.61
* SSMB/SSM-1-085	196 to 350	10.34 / 14.45
* SSMB/SSM-1-086	351 to 450	8.04 / 11.24
* SSMB/SSM-1-087	451 to 606	5.97 / 8.34
* SSMB/SSM-1-142-146B	607 to 667	4.45 / 6.22
* SSMB/SSM-1-147	668 to 1190	3.03 / 4.24
* SSMB/SSM-1-148A	1191 to 1576	2.29 / 3.20
* SSMB/SSM-1-147-146B	1577 to 1690	2.14 / 2.99
* SSMB/SSM-1-148A-146B	1691 to 2076	1.74 / 2.43

3" deflection series ★★★★★

Model	Load Range (lbs)	'G' Rating
SSM-1-181	1 to 100	47.05
SSM-1-182	101 to 160	30.42
SSM-1-183	161 to 220	22.48
SSM-1-184	221 to 332	15.21
SSM-1-185	333 to 600	8.32
SSM-1-186	601 to 890	5.67
SSM-1-187	891 to 1157	4.37
SSM-1-186-199	1158 to 1540	3.28
SSM-1-187-199	1541 to 1825	2.77

* *Select SSM-1 models instead of SSMB-1 where higher 'G' ratings are required.*

'G' ratings for SSMA-1 based on shake table testing at ISO 17025 accredited laboratory in accordance with ASCE 7-05 design parameters under OSHPD Special Seismic Certification Preapproval (OSP) program.

'G' ratings for SSM-1, SSMB-1 based on attachment to steel. For concrete ratings will be controlled by attachment methods + concrete strength.

Vibration Isolation Pads

Features + Application Information

1. Simple field installation
2. Wherever bolting is to be avoided and minor, non-critical vibration conditions exist (pumps, motors, a/c units, generators etc.)

Dimensional + Model Selection Data

3RFP series

* *Higher deflection than conventional pads*
* *Excellent resistance to oil, water, ozone (suitable / recommended for outdoor use)*
* *Closed cell construction with excellent sound attenuation capability*
* *Free from sulfur, halogens, formaldehydes, phthalates and other toxins*
* *Lifetime warranty against core separation*

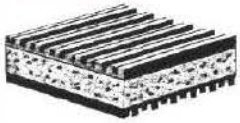
Maximum loading: 70 psi
Material: closed cell, chemically cross-linked HD rubber foam (with LD core)

RMP series

* *Anti-skid surface rib construction*
* *High quality ozone + water resistant elastomer*

Maximum loading: 60 psi
Material: 55 duro elastomer blend

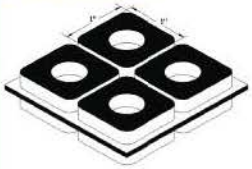
CRMP series



* *Alternate high-low rib construction*
* *Environment friendly 100% natural cork core*
* *Excellent sound attenuation capability*
* *High quality ozone + water resistant elastomer*

Maximum loading: 60 psi
Material: low density cork, elastomer blend

ECRMP series



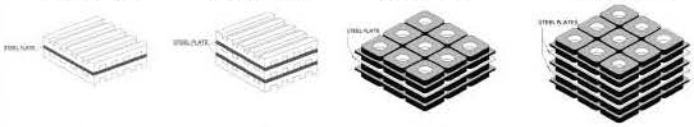
* *New 1" modules offer greater versatility at jobsite to cut to exact size requirements.*
* *Easy cut construction (by hand or utility knife)*
* *Waffle pad design with inbuilt suction cups*
* *High quality ozone + water resistant elastomer*

Maximum loading: 60 psi
Material: 55 duro elastomer blend

SRMP series

Alternate high-low rib construction | *Waffle pad design with inbuilt suction cups*

SRMP-2R *SRMP-3R* *SRMP-2E* *SRMP-3E*



* *High quality ozone + water resistant elastomer*

Maximum loading: 60 psi
Material: 55 duro elastomer blend, Galvanized steel plate

(Refer to page 2 for isolator star rating system)

	Model	Size	Max load (lbs)	Defl.
★★ 3RFP series	3RFP 181801	18" x 18" x 1"	22680	.25"
	3RFP 121201	12" x 12" x 1"	10080	
	3RFP 060601	6" x 6" x 1"	2520	
	3RFP 040401	4" x 4" x 1"	1120	
	3RFP 030301	3" x 3" x 1"	630	
	3RFP 020201	2" x 2" x 1"	280	
	3RFP 181802	18" x 18" x 2"	22680	.50"
	3RFP 121202	12" x 12" x 2"	10080	
	3RFP 080802	8" x 8" x 2"	4480	
	3RFP 060602	6" x 6" x 2"	2520	
	3RFP 040402	4" x 4" x 2"	1120	
	3RFP 030302	3" x 3" x 2"	630	
	3RFP 020202	2" x 2" x 2"	280	
★ RMP series	RMP 181838	18" x 18" x 3/8"	19440	.11"
	RMP 121238	12" x 12" x 3/8"	8640	
	RMP 060638	6" x 6" x 3/8"	2160	
	RMP 040438	4" x 4" x 3/8"	960	
	RMP 030338	3" x 3" x 3/8"	540	
	RMP 020238	2" x 2" x 3/8"	240	
★ CRMP series	CRMP 181801	18" x 18" x 1"	19440	.18"
	CRMP 121201	12" x 12" x 1"	8640	
	CRMP 060601	6" x 6" x 1"	2160	
	CRMP 040401	4" x 4" x 1"	960	
	CRMP 030301	3" x 3" x 1"	540	
	CRMP 020201	2" x 2" x 1"	240	
	CRMP 181802	18" x 18" x 2"	19440	.20"
	CRMP 121202	12" x 12" x 2"	8640	
	CRMP 060602	6" x 6" x 2"	2160	
	CRMP 040402	4" x 4" x 2"	960	
	CRMP 030302	3" x 3" x 2"	540	
	CRMP 020202	2" x 2" x 2"	240	
★ ECRMP series	ECRMP 181834	18" x 18" x 3/4"	19440	.18"
	ECRMP 060634	6" x 6" x 3/4"	2160	
	ECRMP 040434	4" x 4" x 3/4"	960	
	ECRMP 030334	3" x 3" x 3/4"	540	
	ECRMP 020234	2" x 2" x 3/4"	240	
	ECRMP 010134	1" x 1" x 3/4"	60	
★★ SRMP series	SRMP-2R 0606	6" x 6" x 13/16"	2160	.22"
	SRMP-2R 0404	4" x 4" x 13/16"	960	
	SRMP-2R 0303	3" x 3" x 13/16"	540	
	SRMP-3R 0606	6" x 6" x 1 1/4"	2160	.33"
	SRMP-3R 0404	4" x 4" x 1 1/4"	960	
	SRMP-3R 0303	3" x 3" x 1 1/4"	540	
	SRMP-2E 0606	6" x 6" x 1 9/16"	2160	.36"
	SRMP-2E 0404	4" x 4" x 1 9/16"	960	
	SRMP-2E 0303	3" x 3" x 1 9/16"	540	
	SRMP-3E 0606	6" x 6" x 2 3/8"	2160	.54"
	SRMP-3E 0404	4" x 4" x 2 3/8"	960	
	SRMP-3E 0303	3" x 3" x 2 3/8"	540	

Contact factory for non-standard sizes

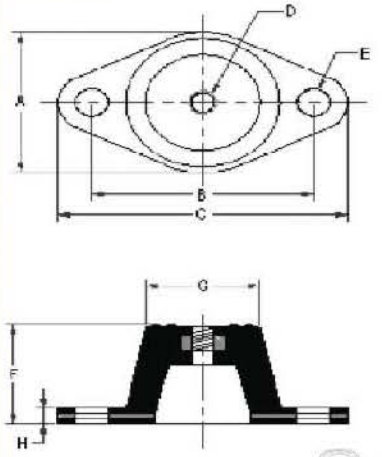
Double Deflection, Rubber-in-shear Mounts

Features + Application Information

1. Anti-skid top and bottom surfaces
2. Mounting holes furnished as standard
3. Embedded steel plates for uniform loading
4. Ozone + water resistant elastomer
5. High deflection, low natural frequency
6. Elements color-coded for easy field verification (Color coding can be by 'dot' or 'complete element')
7. Optional lock-down bolt and washer available

Dimensional + Model Selection Data

FMD models



**Models FMD-E and FMD-F have rectangular bases.*

(Refer to page 2 for isolator star rating system)

0.5" deflection series ★★

Model	Load Range (lbs)	Isolator Dimensions (inches)								Color
		A	B	C	D	E	F	G	H	
FMD-A-1	1 to 30	1-3/4	2-3/8	3-1/8	5/16	11/32	1-1/4	1-3/8	3/16	BLUE
FMD-A-2	31 to 40									RED
FMD-A-3	41 to 70									GREEN
FMD-A-4	71 to 115									BLACK
FMD-B-1	116 to 130	2-3/8	3	3-7/8	3/8	11/32	1-3/4	1-3/4	7/32	BLUE
FMD-B-2	131 to 165									RED
FMD-B-3	166 to 235									GREEN
FMD-B-4	236 to 375									BLACK
FMD-E-3	376 to 400	2-3/8	3-1/8	4	3/8	1/2	2	1-3/4	1/4	GREEN
FMD-E-4	401 to 500									BLACK
FMD-F-1	501 to 750	3-5/8	4-3/4	5-7/8	1/2	9/16	3-1/2	2-3/4	3/8	BLUE
FMD-F-2	751 to 1000									RED
FMD-F-3	1001 to 1500									GREEN
FMD-F-4	1501 to 2200									BLACK

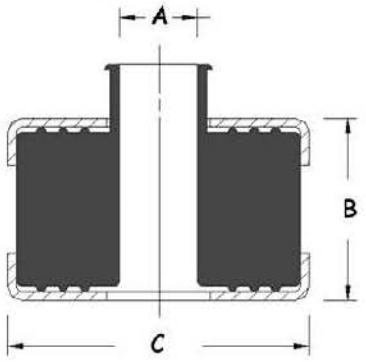
Light Duty Hangers

Features + Application Information

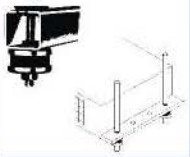
1. Elements incorporate projected collar to prevent metal to metal contact between rod and cup
2. Includes steel cups / plates for uniform loading
3. Ozone + water resistant elastomer
4. AVHM provides up to 17dB(A) noise reduction
5. AVHM series designed for use with all thread rod
6. HNW series designed for use with wire, strap e.g. false ceiling, suspended attic equipment

Dimensional + Model Selection Data

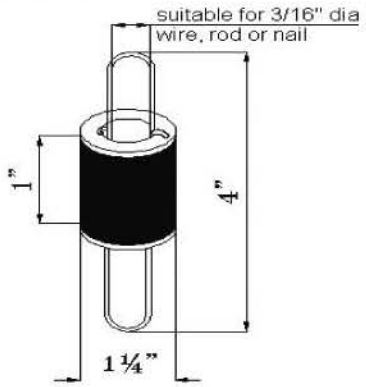
AVHM models



Typical installation



HNW models



Typical installation

(Refer to page 2 for isolator star rating system)

AVHM series ★

Model	Load Range	Defl. (inch)	Dimensions (in.)		
			A	B	C
AVHM-50	1 to 110	1/5	0.43	0.73	1.28
AVHM-100	111 to 220	1/5	0.43	1.02	1.67

(Refer to page 2 for isolator star rating system)

HNW series ★

Model	Load range (lbs)	Defl. (inch)	Color
HNW-1	1 to 65	1/5	RED
HNW-2	66 to 120	1/5	BLACK
HNW-3	121 to 200	1/5	BLUE

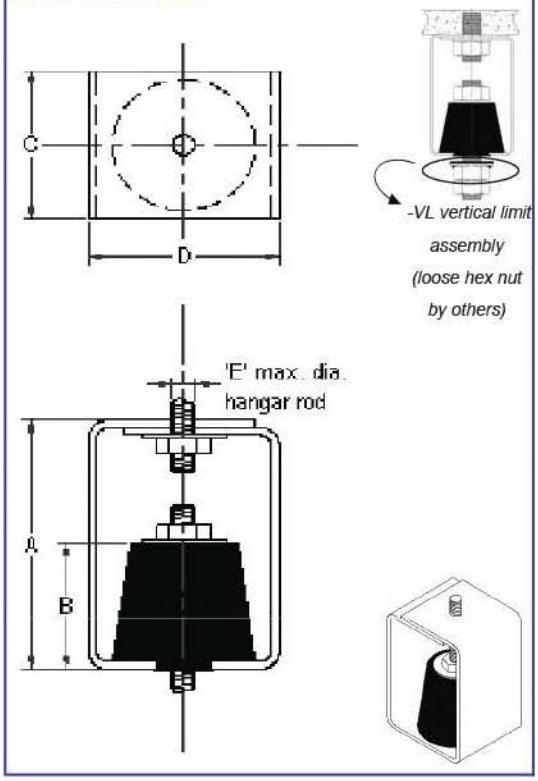
Double Deflection, Rubber-in-shear Hangers

Features + Application Information

1. Powder coated steel bracket (50-70 micron ASTM D4138-07a)
2. Element incorporates projected collar to prevent metal to metal contact between rod and bracket
3. Embedded steel plate(s) for uniform loading
4. Ozone + water resistant elastomer
5. High deflection, low natural frequency
6. Elements color-coded for easy field verification (Color coding can be by 'dot/stripe' or 'complete element')

Dimensional + Model Selection Data

APH / HND models



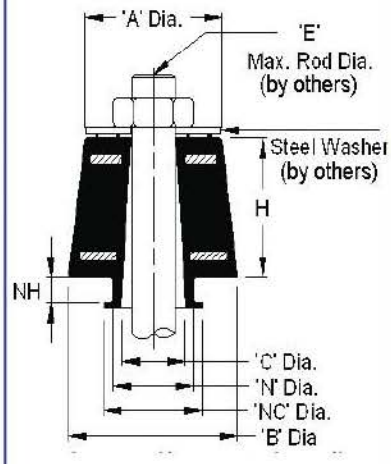
(Refer to page 2 for isolator star rating system)

0.5" deflection series ★★ *APH-A, HND-A, APH-B series have nominal 0.4" deflection*

Model	Load Range (lbs)	Isolator dimensions (inches)					Color
		A	B	C	D	E	
APH-A-1	1 to 95	2.41	1.29	1.65	1.77	3/8	GREEN
APH-A-2	96 to 120						BLACK
HND-A-1	1 to 30	3	1-3/8	2	2-1/4	1/2	BLUE
HND-A-2	31 to 40						RED
HND-A-3	41 to 70						GREEN
HND-A-4	71 to 120						BLACK
APH-B-1	121 to 175	2.82	1.57	1.77	1.77	1/2	GREEN
APH-B-2	176 to 320						BLACK
HND-B-1	121 to 165	4 1/2	1-7/8	2 1/4	3	5/8	BLUE
HND-B-2	166 to 235						RED
HND-B-3	236 to 375						GREEN
HND-B-4	376 to 572						BLACK
HND-C-3	573 to 745	6	3-1/4	3 1/2	4	5/8	GREEN
HND-C-4	746 to 1307						BLACK
HND-D-2	1308 to 2240	6	3-1/4	4	4-1/2	3/4	RED
HND-D-3	2241 to 3000						GREEN
HND-D-4	3001 to 4200						BLACK

For seismic applications add -VL suffix for vertical limit assembly e.g. HND-A-3-VL3/8"

APHE / HNDE models



** Bottom washer only provided on HNDE series elements*

0.5" deflection series ★★ *APHE-A, HNDE-A, APHE-B series have nominal 0.4" deflection*

Model	Load Range (lbs)	Isolator dimensions (inches)								Color
		A	B	C	E	H	NH	N	NC	
APHE-A-1	1 to 95	0.81	1.18	0.59	3/8	1.10	0.11	0.71	.84	GREEN
APHE-A-2	96 to 120									BLACK
HNDE-A-1	1 to 30	1-1/4	1-3/4	7/8	1/2	1-1/4	1/4	1-1/8	1.31	BLUE
HNDE-A-2	31 to 40									RED
HNDE-A-3	41 to 70									GREEN
HNDE-A-4	71 to 120									BLACK
APHE-B-1	121 to 175	1.48	1.57	0.76	3/8	1.34	0.11	1.00	1.16	GREEN
APHE-B-2	176 to 320									BLACK
HNDE-B-1	121 to 165	1-7/8	2-1/4	7/8	5/8	1.69	1/4	1-1/8	1.31	BLUE
HNDE-B-2	166 to 235									RED
HNDE-B-3	236 to 375									GREEN
HNDE-B-4	376 to 572									BLACK
HNDE-C-3	573 to 745	2-1/2	3-1/2	7/8	1/2	3-1/8	1-1/8	1-3/8	1.31	GREEN
HNDE-C-4	746 to 1307									BLACK
HNDE-D-2	1308 to 2240	3	4	7/8	3/4	3-1/8	1/4	1-1/8	1.31	RED
HNDE-D-3	2241 to 3000									GREEN
HNDE-D-4	3001 to 4200									BLACK

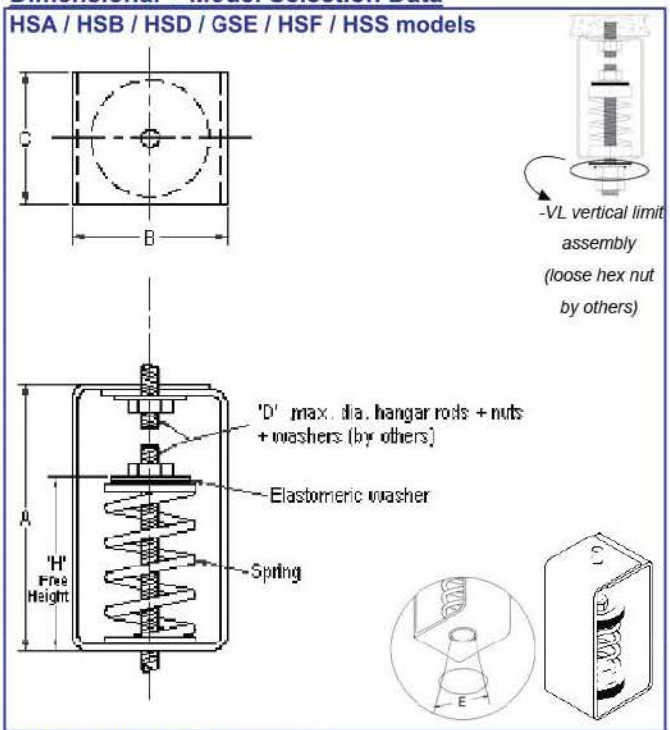
Spring Hangers

Features + Application Information

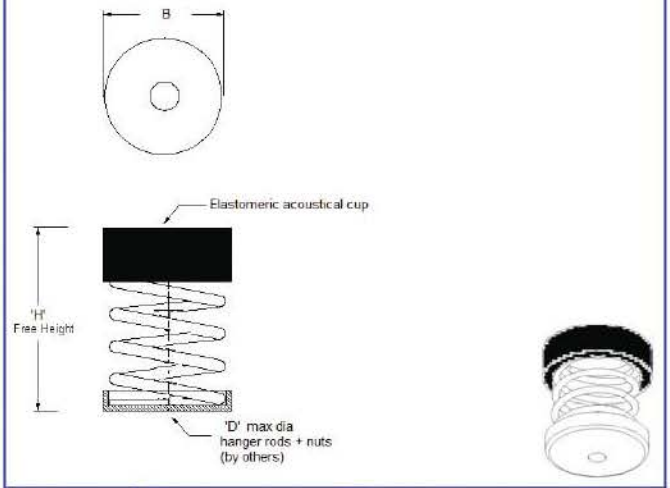
1. Powder coated steel bracket (50-70 micron ASTM D4138-07a)
2. Load distribution steel washer
3. Nuts, washers & rods by others
4. Spring elements color-coded for easy field verification
5. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data

HSA / HSB / HSD / GSE / HSF / HSS models



OHSA / OHSD / OHSF models



Hanger Series	Dimensions			
	A	B	C	D
HSS	2.72"	2.15"	1.5"	1/2"
HSF	3.47"	2.15"	1.5"	1/2"
HSA	4-1/2"	3"	2-1/4"	5/8"
HSB	7-1/2"	3"	2-3/4"	5/8"
HSD	6-3/8"	3-1/2"	2-3/4"	3/4"
HSE	8-3/4"	3-1/2"	2-3/4"	3/4"
OHSF	n/a	1-1/2"	n/a	3/8"
OHSA	n/a	2-3/8"	n/a	5/8"
OHSD	n/a	2-7/8"	n/a	5/8"

(Refer to page 2 for isolator star rating system)

3/4" deflection series ★★★

Model	Load Range (lbs)	H	E
HSS/OHSF-021	1 to 25	HSS: 1.8" OHSF: 1-13/16"	30°
HSS/OHSF-022	26 to 55		
HSS/OHSF-023	56 to 85		
HSS/OHSF-024	86 to 125		

1" deflection series ★★★

Model	Load Range (lbs)	H	E
HSF/OHSF-041	1 to 15	HSF: 2.3" OHSF: 2-9/16"	23°
HSF/OHSF-042	16 to 35		
HSF/OHSF-043	36 to 65		
HSF/OHSF-044	66 to 90		
HSF/OHSF-045	91 to 185		
HSA/OHSA-124	186 to 210	HSA: 3-1/8" OHSA" 3-3/8"	46°
HSA/OHSA-125	211 to 300		
HSA/OHSA-126	301 to 370		
HSA/OHSA-127	371 to 700		
HSB/OHSA-109	701 to 750	HSB: 4-5/8" OHSA: 4-1/8"	28°
HSB/OHSA-110	751 to 910		
HSB/OHSA-111	911 to 1080		
HSB/OHSA-112	1081 to 1250		
HSD/OHSD-158	1251 to 1500	HSD: 4-1/8" OHSD: 4-1/8"	34°
HSD/OHSD-159	1501 to 2082		
HSD/OHSD-159-161	2083 to 2603		n/a

2" deflection series ★★★★

Model	Load Range (lbs)	H	E
HSB/OHSA-081	1 to 40	HSB: 4-5/8" OHSA: 4-1/8"	41°
HSB/OHSA-082	41 to 60		
HSB/OHSA-083	61 to 110		
HSB/OHSA-084	111 to 195		
HSB/OHSA-085	196 to 350		
HSB/OHSA-086	351 to 450		
HSB/OHSA-087	451 to 606		
HSB/OHSA-142-146B	607 to 667	HSB: 5-5/8" OHSA: 5-1/8"	n/a
HSB/OHSA-147	668 to 1190		28°
HSB/OHSA-148A	1191 to 1576		
HSB/OHSA-147-146B	1577 to 1690		n/a
HSB/OHSA-148A-146B	1691 to 2076		

3" deflection series ★★★★★

Model	Load Range (lbs)	H	E
HSE/OHSD-181	1 to 100	HSA: 6-1/2" OHSD: 6-1/2"	30°
HSE/OHSD-182	101 to 160		
HSE/OHSD-183	161 to 220		
HSE/OHSD-184	221 to 332		
HSE/OHSD-185	333 to 600		
HSE/OHSD-186	601 to 890		
HSE/OHSD-187	891 to 1157		
HSE/OHSD-186-199	1158 to 1540		n/a
HSE/OHSD-187-199	1541 to 1825		

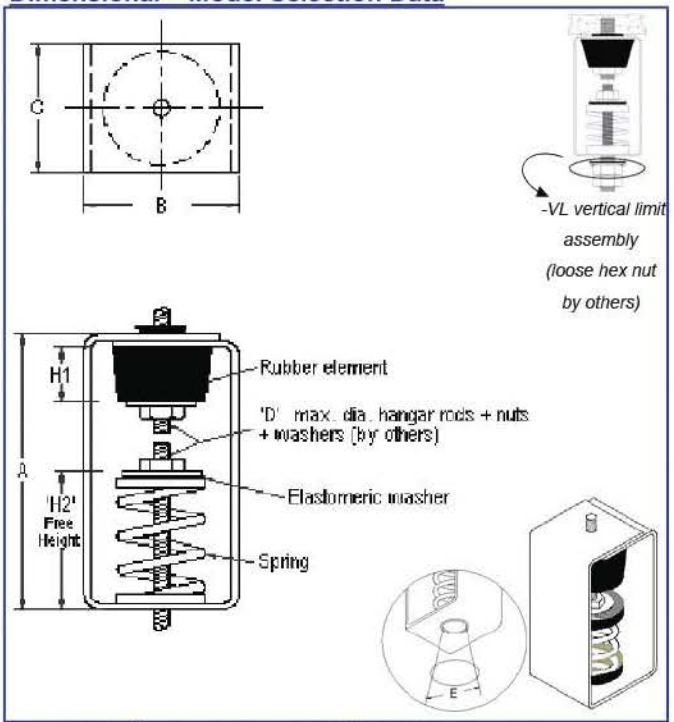
For seismic applications add -VL suffix for vertical limit assembly e.g. HSA-124-VL1/2"

Neo-Spring™ Hangers

Features + Application Information

1. Powder coated steel bracket (50-70 micron ASTM D4138-07a)
2. Load distribution steel washer + embedded steel plates
3. High deflection, low natural frequency
4. Spring / rubber elements color-coded for easy field verification
5. Ozone & water resistant elastomer elements with embedded steel plates and incorporating projected collar to prevent metal to metal contact between rod and bracket
6. Consult spring chart on page 23 for isolator performance data

Dimensional + Model Selection Data



Hanger Series	Dimensions			
	A	B	C	D
HNSF-HM	4.85"	2.15"	1.5"	3/8"
HSB-HM	7-1/2"	3"	2-3/4"	3/8"
HNSA-Ax	8"	3"	2-3/4"	1/2"
HNSA-Bx	8"	3"	2-3/4"	5/8"
HNSB-Ax	10-3/16"	4-1/2"	4"	1/2"
HNSB-B/C/Dx	10-3/16"	4-1/2"	4"	5/8"
HNSE-Ax	11-13/16"	4-1/8"	4"	1/2"
HNSE-B/Cx	11-13/16"	4-1/8"	4"	5/8"
HNSE-Dx	11-13/16"	4-1/8"	4"	3/4"

(Refer to page 2 for isolator star rating system)

1" deflection series ★★★

Model	Load Range (lbs)	H 1	H 2	E
HNSF-HM-041	1 to 15	1"	2.3"	23°
HNSF-HM-042	16 to 35			
HNSF-HM-043	36 to 65			
HNSF-HM-044	66 to 90			
HNSF-HM-045	91 to 185			
HSB-HM-124	186 to 210		3-3/8"	46°
HSB-HM-125	211 to 300			
HSB-HM-126	301 to 370			
HSB-HM-127	371 to 700			
HSB-HM-109	701 to 750		4-5/8"	28°
HSB-HM-110	751 to 910			

1.5" deflection series ★★★

Model	Load Range (lbs)	H 1	H 2	E
HNSA-A3-121	1 to 50	1-1/4"	3-3/8"	46°
HNSA-A4-122	51 to 80			
HNSA-B1-123	81 to 130	1-3/4"		
HNSA-B2-124	131 to 210			
HNSA-B3-125	211 to 300			
HNSA-B3-126	301 to 370			
HNSA-B4-127	371 to 582			
HNSB-C3-108	583 to 620	3-1/8"	4-5/8"	28°
HNSB-C3-109	621 to 750			
HNSB-C4-110	751 to 910			
HNSB-C4-111	911 to 1080			
HNSB-C4-112	1081 to 1250			
HNSE-D2-158	1251 to 1500		4-1/8"	34°
HNSE-D2-159	1501 to 2082			
HNSE-D3-159-161	2083 to 2603			n/a

2" deflection series ★★★★

Model	Load Range (lbs)	H 1	H 2	E
HSB-HM-081	1 to 40	1"	4-5/8"	41°
HSB-HM-082	41 to 60			
HSB-HM-083	61 to 110			
HSB-HM-084	111 to 195			
HSB-HM-085	196 to 350			
HSB-HM-086	351 to 450			
HSB-HM-087	451 to 606			

2.5" deflection series ★★★★

Model	Load Range (lbs)	H 1	H 2	E
HNSA-A2-081	1 to 40	1-1/4"	4-5/8"	41°
HNSA-A3-082	41 to 60			
HNSA-A4-083	61 to 110			
HNSA-B2-084	111 to 195	1-3/4"		
HNSA-B3-085	196 to 350			
HNSA-B4-086	351 to 450			
HNSA-B4-087	451 to 572			
HNSB-C4-142-146B	573 to 667	3-1//8"	5-5/8"	n/a
HNSB-C4-147	668 to 1190			28°
HNSB-D2-148A	1191 to 1576			
HNSB-D2-147-146B	1577 to 1690			n/a
HNSB-D2-148A-146B	1691 to 2076			

3.5" deflection series ★★★★★

Model	Load Range (lbs)	H 1	H 2	E
HNSE-A4-181	1 to 100	1-1/4"	6-1/2"	30°
HNSE-B1-182	101 to 160	1-3/4"		
HNSE-B2-183	161 to 220			
HNSE-B3-184	221 to 332			
HNSE-C3-185	333 to 600	3-1/8"		
HNSE-C4-186	601 to 890			
HNSE-C4-187	891 to 1157			
HNSE-D2-186-199	1158 to 1540			n/a
HNSE-D2-187-199	1541 to 1825			

For seismic applications add -VL suffix for vertical limit assembly
e.g. HNSA-A4-122-VL3/8"

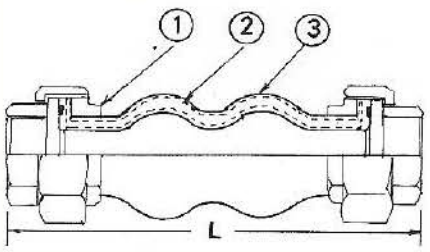
Union/Screwed Connection, Rubber Expansion Joints

Features + Application Information

1. Reduces noise and vibration transmission
2. Eliminates stress due to thermal expansion and piping misalignment
3. Precision molded of synthetic rubber
4. Threading standard as per customer specifications (NPT, BSPT)
5. Applicable fluids for standard construction: water (cold, hot or sea), weak acids, alkalis, compressed air etc.
6. Different elastomers are available for other fluids (e.g. oil). Contact factory for technical assistance
7. Synthetic fiber reinforcement
8. Corrosion resistant materials
9. Easy field installation

Dimensional + Model Selection Data

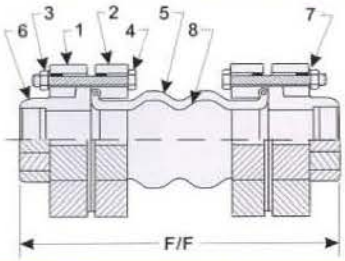
FCU models (twin bellow)



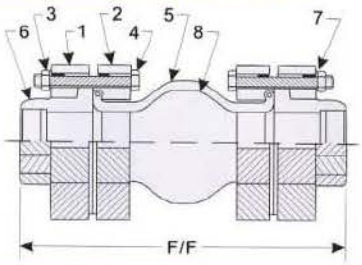
Materials (see figure)

No.	Part	Material
1	Union	Malleable iron
2	Reinforcing fabric	Polyester
3	Tube	EPDM

FCU-T / FCU-TH models (twin bellow)



FCU-SH models (single bellow)



Materials (see figures)

No.	Part	Material
1,2	Flanges	Malleable iron / Cast SUS 201
3,4	Nuts	Zinc plated carbon steel
5	Tube	EPDM
6	Threaded union	Malleable iron / Cast SUS 201
7	Bolts	Zinc plated carbon steel
8	Reinforcing fabric	Polyester

FCU series (twin bellow)

Model	Size (inches)	Length L (inches)	Axial compression (inches)	Axial elongation (inches)	Transverse deflection (inches)	Angular deflection (deg)	Operating pressure (psig)	Burst pressure (psig)	Temp. range (°F)
FCU-5	1/2	8	7/8	1/4	7/8	30°	150	700	14 to 158
FCU-7	3/4	8	7/8	1/4	7/8	30°	150	700	14 to 158
FCU-10	1	8	7/8	1/4	7/8	25°	150	700	14 to 158
FCU-12	1-1/4	8	7/8	1/4	7/8	25°	150	700	14 to 158
FCU-15	1-1/2	8	7/8	1/4	7/8	20°	150	700	14 to 158
FCU-20	2	8	7/8	1/4	7/8	15°	150	700	14 to 158

Ratings indicated above are for constant pressures at 100°F. For pulsating pressures use 1/2 of rating; for surge pressures use 1/6 of rating. For elevated temperature ratings, consult factory. Expansion joints must be installed per FSA technical handbook guidelines.

FCU-T series (twin bellow)

Model	Size (inches)	Length (F/F) (inches)	Axial compression (inches)	Axial elongation (inches)	Transverse deflection (inches)	Angular deflection (deg)	Operating pressure (psig)	Burst pressure (psig)	Temp. range (°F)
FCU-T-5	1/2	8	7/8	1/4	7/8	30°	232	725	14 to 158
FCU-T-7	3/4	8	7/8	1/4	7/8	30°	232	725	14 to 158
FCU-T-10	1	8	7/8	1/4	7/8	25°	232	725	14 to 158
FCU-T-12	1 1/4	8	7/8	1/4	7/8	25°	232	725	14 to 158
FCU-T-15	1 1/2	8	7/8	1/4	7/8	20°	232	725	14 to 158
FCU-T-20	2	8	7/8	1/4	7/8	15°	232	725	14 to 158

FCU-TH series (twin bellow)

Model	Size (inches)	Length (F/F) (inches)	Axial compression (inches)	Axial elongation (inches)	Transverse deflection (inches)	Angular deflection (deg)	Operating pressure (psig)	Burst pressure (psig)	Temp. range (°F)
FCU-TH-5	1/2	6.30	3/5	2/5	3/5	20°	355	1066	14 to 158
FCU-TH-7	3/4	6.30	3/5	2/5	3/5	20°	355	1066	14 to 158
FCU-TH-10	1	6.30	3/5	2/5	3/5	20°	355	1066	14 to 158
FCU-TH-12	1-1/4	8.35	3/5	2/5	4/5	30°	355	1066	14 to 158
FCU-TH-15	1-1/2	8.35	3/5	2/5	4/5	30°	355	1066	14 to 158
FCU-TH-20	2	8.78	3/5	2/5	4/5	30°	355	1066	14 to 158

FCU-SH series (single bellow)

Model	Size (inches)	Length (F/F) (inches)	Axial compression (inches)	Axial elongation (inches)	Transverse deflection (inches)	Angular deflection (deg)	Operating pressure (psig)	Burst pressure (psig)	Temp. range (°F)
FCU-SH-5	1/2	5.12	5/16	5/32	5/16	15°	355	1066	14 to 158
FCU-SH-7	3/4	5.12	5/16	5/32	5/16	15°	355	1066	14 to 158
FCU-SH-10	1	5.12	5/16	5/32	5/16	15°	355	1066	14 to 158
FCU-SH-12	1-1/4	5.35	5/16	5/32	5/16	15°	355	1066	14 to 158
FCU-SH-15	1-1/2	5.35	5/16	5/32	5/16	15°	355	1066	14 to 158
FCU-SH-20	2	5.98	5/16	5/32	5/16	15°	355	1066	14 to 158

Ratings indicated above are for constant pressures at 100°F. For pulsating pressures use 1/2 of rating; for surge pressures use 1/6 of rating. For elevated temperature ratings, consult factory. Expansion joints must be installed per FSA technical handbook guidelines.

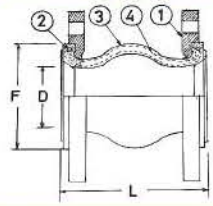
Flanged Connection, Rubber Expansion Joints

Features + Application Information

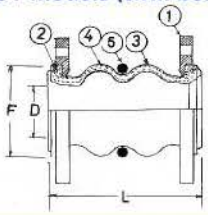
1. Reduces noise and vibration transmission
2. Eliminates stress due to thermal expansion and piping misalignment
3. Precision molded of synthetic rubber
4. Floating flanges drilling standards as per customer specifications (ANSI, BS, DIN, JIS)
5. Applicable fluids for standard construction: water (cold, hot or sea), weak acids, alkalis, compressed air etc.
6. Different elastomers are available for other fluids (e.g. oil). Contact factory for technical assistance
7. Synthetic fiber reinforcement
8. Corrosion resistant materials
9. Easy field installation

Dimensional + Model Selection Data

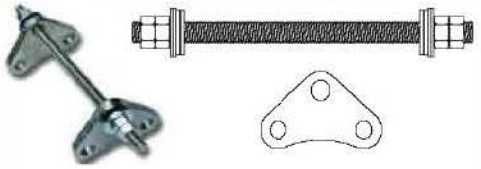
FCS models (single bellow)



FCT models (twin bellow)



CRU models (control units)



Materials (see figures)

No.	Part	Material
1	Flange	Galvanized steel (drilling available as per ANSI/BS/DIN/JIS)
2	Reinforcing ring	Carbon steel wire strand
3	Tube	EPDM
4	Reinforcing fabric	Polyester
5	Root ring	Galvanized steel

Control unit composition:

Item	Quantity
Tie Rod	1
Gusset	2
Nuts	4
Steel / Rubber washer	2

Pipe Size	Dimensions			Model	Axial compression	Axial elongation	Transverse deflection	Angular deflection	Model	Axial compression	Axial elongation	Transverse deflection	Angular deflection
(inches)	L (inches)	D (inches)	F (inches)		(inches)	(inches)	(inches)	(deg)		(inches)	(inches)	(inches)	(deg)
Single Bellow:				**FCS series**					**FCS-H series**				
1-1/4	6	1.58	2.72	FCS-12	1/2	3/8	1/2	15°	FCS-12-H	0.31	0.15	0.31	15°
1-1/2	6	1.58	2.72	FCS-15	1/2	3/8	1/2	15°	FCS-15-H	0.31	0.15	0.31	15°
2	6	2.05	3.39	FCS-20	1/2	3/8	1/2	15°	FCS-20-H	0.31	0.19	0.31	15°
2-1/2	6	2.68	4.18	FCS-25	1/2	3/8	1/2	15°	FCS-25-H	0.47	0.23	0.39	15°
3	6	3.00	4.57	FCS-30	1/2	3/8	1/2	15°	FCS-30-H	0.47	0.23	0.39	15°
4	6	4.06	5.91	FCS-40	5/8	3/8	1/2	15°	FCS-40-H	0.70	0.39	0.47	15°
5	6	5.04	7.09	FCS-50	5/8	3/8	1/2	15°	FCS-50-H	0.70	0.39	0.47	15°
6	6	5.99	8.23	FCS-60	5/8	3/8	1/2	15°	FCS-60-H	0.70	0.39	0.47	15°
8	6	7.64	10.24	FCS-80	5/8	3/8	1/2	15°	FCS-80-H	0.98	0.55	0.86	15°
10	8	9.85	12.60	FCS-100	3/4	1/2	3/4	15°	FCS-100-H	0.98	0.55	0.86	15°
12	8	11.82	14.45	FCS-120	3/4	1/2	3/4	15°	FCS-120-H	0.98	0.55	0.86	15°
14	8	12.60	16.07	FCS-140	3/4	1/2	3/4	15°	FCS-140-H	0.98	0.62	0.86	15°
16	8	14.65	18.59	FCS-160	3/4	1/2	3/4	15°	FCS-160-H	0.98	0.62	0.86	15°
18	8	16.34	20.56	FCS-180	3/4	1/2	3/4	15°	FCS-180-H	0.98	0.62	0.86	15°
20	8	17.88	22.45	FCS-200	3/4	1/2	3/4	15°	FCS-200-H	0.98	0.62	0.86	15°
24	10	22.45	27.40	FCS-240	3/4	1/2	3/4	15°	FCS-240-H	0.98	0.62	0.86	15°
28	10	26.77	31.49	FCS-280	3/4	1/2	3/4	15°	FCS-280-H	0.98	0.62	0.86	15°
Twin Bellow:				**FCT series**					**FCT-H series**				
1-1/2	7	1.58	2.72	FCT-15	2	3/4	1-3/4	35°	FCT-15-H	1	3/5	1	30°
2	7	2.05	3.39	FCT-20	2	3/4	1-3/4	35°	FCT-20-H	1	3/5	1	30°
2-1/2	7	2.68	4.18	FCT-25	2	3/4	1-3/4	35°	FCT-25-H	1	3/5	1	30°
3	7	3.00	4.57	FCT-30	2	3/4	1-3/4	35°	FCT-30-H	1	3/5	1	30°
4	9	4.06	5.91	FCT-40	2	1	1-1/2	35°	FCT-40-H	1	3/4	3/4	30°
5	9	5.04	7.09	FCT-50	2	1	1-1/2	35°	FCT-50-H	1	3/4	3/4	30°
6	9	5.99	8.23	FCT-60	2	1	1-1/2	35°	FCT-60-H	1	3/4	3/4	30°
8	13	7.64	10.24	FCT-80	2-1/4	1	1-1/4	30°	FCT-80-H	1	3/4	3/4	30°
10	13	9.85	12.60	FCT-100	2-1/4	1	1-1/4	30°	FCT-100-H	1	3/4	3/4	30°
12	13	11.82	14.45	FCT-120	2-1/4	1	1-1/4	30°	FCT-120-H	1	3/4	3/4	30°
14	14	12.60	16.07	FCT-140	1-1/2	3/4	1-1/4	20°	FCT-140-H	3/4	3/4	3/4	20°
16	14	14.65	18.59	FCT-160	1-1/2	3/4	1-1/4	20°	FCT-160-H	3/4	3/4	3/4	20°
18	14	16.34	20.56	FCT-180	1-1/2	3/4	1-1/4	20°	FCT-180-H	3/4	3/4	3/4	20°
20	14	17.88	22.45	FCT-200	1-1/2	3/4	1-1/4	20°	FCT-200-H	3/4	3/4	3/4	20°
24	14	22.84	27.17	FCT-240	1-1/2	3/4	1-1/4	20°	FCT-240-H	3/4	3/4	3/4	20°

Operating pressure

Series	Size	PSIG
FCS	up to 12"	215
	14" to 28"	115
FCS-H	up to 12"	362
	14" to 28"	232
FCT	up to 12"	227
	14" to 24"	113
FCT-H	up to 12"	355
	14" to 24"	227

Ratings indicated above are for constan pressures at 100°F. For pulsating pressures use 1/2 of rating; for surge pressures use 1/6 of rating. For elevated temperature ratings, consult factory.

Operating temp. range

Series	°F
All	14 to 158

Control Units (qty of rods/joint)

Series	Size	Qty
FCS+FCT	up to 6"	2
	8" to 28"	4
FCS-H+FCT-H	up to 2"	2
	2-1/2" to 28"	4

Expansion joints must be installed per FSA technical handbook guidelines. Control units are always recommended as a safety precaution (even when system is properly anchored and guided) and must be installed to prevent voiding warranty.

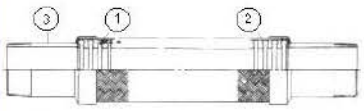
Stainless Steel Expansion Joints

Features + Application Information

1. Reduces noise and vibration transmission
2. Vibration absorption and piping misalignment correction
3. Eliminates stress due to thermal expansion and piping misalignment
4. Engineered bellow design ensures equal stress distribution through entire length
5. Corrosion resistant materials
6. Easy field installation
7. Bellows manufactured per EJMA standard

Dimensional + Model Selection Data

JF-500-T models



Materials (see figure)

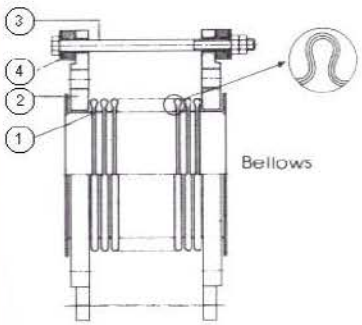
No.	Part	Description
1	Bellows	SUS304 (SUS316 option)
2	Braids	SUS304
3	Tube end	SUS304

JF-500-T series (threaded connection)

Model	Nominal bore (inches)	Total length (inches)	Bellows O.D. (inches)	Axial movement (inches)	Max. lateral offset (inches)	Operating pressure (psi)	Temp. range (°F)
JF-500-T-5	1/2	10	0.75	± 0.60	.78	300	-122 to +780
JF-500-T-7	3/4	10	1.06	± 0.60	.78	300	-122 to +780
JF-500-T-10	1	10	1.28	± 0.60	.78	300	-122 to +780
JF-500-T-12	1-1/4	10	1.81	± 0.60	.70	300	-122 to +780
JF-500-T-15	1-1/2	12	2.20	± 0.60	.62	300	-122 to +780
JF-500-T-20	2	12	2.76	± 0.60	.59	300	-122 to +780

Pressure ratings indicated above are based on 68°F ambient temperature. For elevated temperature ratings, consult factory.

JF-500 / JF-500-H models



Materials (see figure)

No.	Part	Description
1	Bellows	SUS304 (SUS316 option)
2	Flange	AISI 1015 (SUS304 option)
3	Tie Rods	S25C
4	Gasket	Rubber

JF-500 / JF-500-H series (flanged connection)

Model	Nominal bore (inches)	Total length (inches)	Bellows O.D. (inches)	Axial movement (inches)	Max. lateral offset (inches)	Operating pressure (psi)	Temp. range (°F)
JF-500-20	2	6	2.75	± 0.60	.59	150	-122 to +780
JF-500-25	2-1/2	6	3.40	± 0.60	.55	150	-122 to +780
JF-500-30	3	6	3.99	± 0.60	.47	150	-122 to +780
JF-500-40	4	6	5.03	± 0.60	.39	150	-122 to +780
JF-500-50	5	6	6.16	± 0.60	.31	150	-122 to +780
JF-500-60	6	6	7.22	± 0.60	.23	150	-122 to +780
JF-500-80	8	8	9.21	± 0.60	.31	150	-122 to +780
JF-500-100	10	8	11.37	± 0.60	.23	150	-122 to +780
JF-500-120	12	8	13.42	± 0.60	.19	150	-122 to +780
JF-500-140	14	9	15.43	± 0.60	.19	150	-122 to +780
JF-500-160	16	9	17.83	± 0.60	.19	150	-122 to +780
JF-500-180	18	9	19.84	± 0.60	.19	150	-122 to +780
JF-500-200	20	9	21.81	± 0.60	.19	150	-122 to +780
JF-500-240	24	10	25.79	± 0.60	.19	150	-122 to +780
JF-500-300	30	11	31.89	± 0.60	.19	150	-122 to +780
JF-500-H-20	2	6	2.75	± 0.60	.59	370	-122 to +780
JF-500-H-25	2-1/2	6	3.40	± 0.60	.55	370	-122 to +780
JF-500-H-30	3	6	3.99	± 0.60	.47	370	-122 to +780
JF-500-H-40	4	6	5.03	± 0.60	.39	370	-122 to +780
JF-500-H-50	5	6	6.16	± 0.60	.31	370	-122 to +780
JF-500-H-60	6	6	7.22	± 0.60	.23	370	-122 to +780
JF-500-H-80	8	8	9.21	± 0.60	.31	370	-122 to +780
JF-500-H-100	10	8	11.37	± 0.60	.23	370	-122 to +780
JF-500-H-120	12	8	13.42	± 0.60	.19	370	-122 to +780
JF-500-H-140	14	9	15.58	± 0.60	.19	370	-122 to +780
JF-500-H-160	16	9	17.95	± 0.60	.19	370	-122 to +780
JF-500-H-180	18	9	19.96	± 0.60	.19	370	-122 to +780
JF-500-H-200	20	10	21.93	± 0.60	.19	370	-122 to +780
JF-500-H-240	24	11	25.79	± 0.60	.19	370	-122 to +780
JF-500-H-300	30	11	31.89	± 0.60	.19	370	-122 to +780

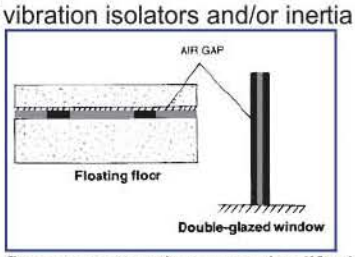
Pressure ratings indicated above are based on 68°F ambient temperature. For elevated temperature ratings, consult factory.

Floating Floors

Features + Application Information

VIMCO floating floors provide a solution to the problem where the transmission loss of the standard structural floor is not sufficient to prevent noise from passing from mechanical rooms to noise-sensitive areas above or below it. Floating floors primarily control airborne sound transmissions; they are not intended to be used in place of vibration isolators and/or inertia bases.

VIMCO floating floors perform acoustically on the same principle as a double-glazed window : The separation of the masses, with an air gap, gives a much greater transmission loss than if the two masses are combined into a continuous floor. The "enclosed air cavity" is the primary isolator.



Vibration Management Corporation prefers and recommends a form-work floating floor construction over the lift slab / jack-up system offered by other manufacturers.

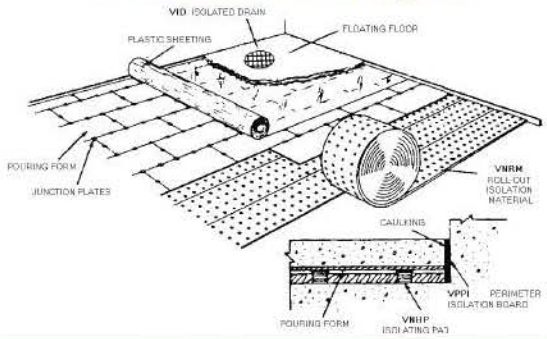
All types of floating floor construction perform the same acoustically as long as the dynamic natural frequency of the isolation mount, the air gap, and masses are the same. The choice of construction method therefore depends on economy, reliability, and ease of installation. Jack-up system manufacturers generally claim lower installed costs. This cost differential tends to disappear though, for larger areas where many equipment are supported on the floor, or where many plinths project through the floating floor for equipment, piping support. In both cases the number of canisters has to be increased to provide proper edge and weight support. Most jack-up systems are designed for a 4" floating floor, with thicker slabs resulting in higher costs, not only due to extensions required on the canisters, but again in causing canister spacing to decrease. The VIMCO form-work system easily accommodates thicker floating floors with correct isolator selection. The form-work construction also offers the provision of a fiberglass infill which in addition to preventing a sound tunneling effect, provides extra transmission loss. Independent lab tests by a competitor show that a 2" air gap with fiberglass infill gives a STC rating increase equivalent to doubling the air gap to 4" !!!

Materials

VIMCO's form-work floating floor system consists of the following materials :

1. Roll-out isolation material provided with neoprene pads
2. Closed cell perimeter isolating boards
3. Plywood / cement board form-work
4. Polyethylene bond-breaker sheeting
5. Polyurethane perimeter sealant
6. Neoprene contact adhesive
7. Floating floor isolated drains
8. Neoprene high load pads

VIMCO form-work floating floor



VNRM-xx (xx denotes pad spacing in inches): Roll-out isolation material
VIMCO roll-out isolation material consists of low-density fiberglass with 2" high, resilient, neoprene isolation pads, embedded at 24" centers as standard. Closer spacing between pads can be factory installed, or achieved at site using additional high load pads.

VPPI-xx (xx denotes height in inches): Perimeter isolating boards
VIMCO incorporates closed cell expanded polyethylene sheets for perimeter isolation. These sheets have excellent weather-resistant characteristics and aid in preventing flanking noise along the edges of the floating floor area, by completing the isolation of the floating floor from the building structure.

VNHP : High load pads
VIMCO provides individual neoprene isolation pads for areas with additional, uneven loading. These pads can be factory installed with the roll-out isolation material or can be furnished separately for installation at site, by a VIMCO authorized representative.

VID-xx (xx denotes drain inlet size in inches): Isolated drains
VIMCO floating floor isolated drains consist of a two member housing, to drain water from the floating floor down to existing drainage piping system, without compromising the structural isolation.

Ancillary materials :
Depending on economic considerations, local availability, the following materials may either be supplied by VIMCO or sourced by your local VIMCO representative. Materials must however comply to VIMCO specifications to ensure proper installation.

Plywood / Cement board	Neoprene spray adhesive
Polyethylene sheeting	Polyurethane sealant

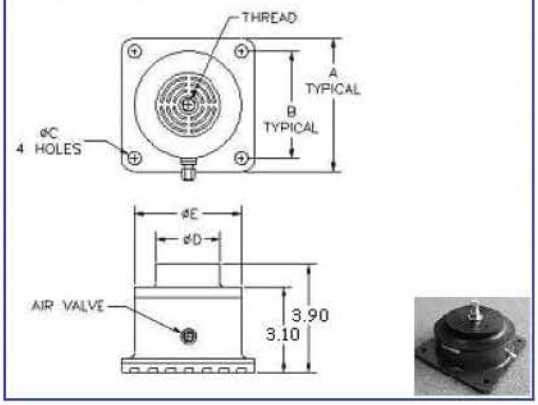
Air Mounts

Features + Application Information

1. Air-cushioned isolation
2. Low natural frequency (3~5 Hz at operating load)
3. High deflection
4. Neoprene padded top and bottom base
5. Heavy wall construction
6. High lateral stability
7. Low maintenance
8. Combined resiliency and air prevents drift or permanent set

Dimensional + Model Selection Data

AMA models



(Refer to page 2 for isolator star rating system)

AMA series ★★★★★

Model	Load Range (lbs)	Part Dimensions (inches)					Bolt Size
		A	B	C	D	E	
AMA-2	100 to 200	0.47	1.97	3.94	3.90	3.10	M10 x 40
AMA-4	200 to 400	0.47	2.36	3.94	3.90	3.10	M12 x 50
AMA-8	400 to 800	0.47	3.54	5.43	3.90	3.10	M12 x 50
AMA-15	800 to 1500	0.47	4.33	6.46	3.90	3.10	M12 x 50
AMA-25	1400 to 2500	0.55	5.91	8.35	3.90	3.10	M16 x 60
AMA-45	2400 to 4500	0.55	9.45	12.36	3.90	3.10	M16 x 60
AMA-75	4000 to 7500	0.55	12.99	16.22	3.90	3.10	M16 x 60

Materials:

Resilient Element	Neoprene
Metal Structure	Structural Steel
Environmental Data	-20 °F to + 180 °F

Roof Curb Isolation Rails

Features + Application Information

VIMCO model **AR** aluminum spring rails are specifically designed and engineered as a vibration control system for curb mounted equipment installed on the roof. The rails are custom designed to fit between standard roof curb and equipment, providing continuous support and an air and watertight seal. The system is adaptable to all curb systems and equipment without any modifications to either curb or equipment. The assembly provides a cost effective method of providing vibration control for rooftop equipment in a lightweight and weatherproof unit.

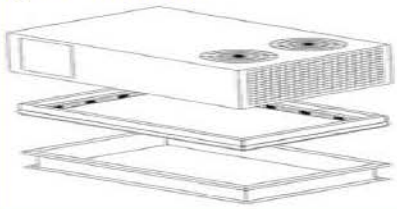
1. Construction - "Heavy wall" aluminum extrusion
2. Units upto 180" long shipped in one piece. Longer units shipped with splice kits for field assembly
3. Springs - spaced and selected to provide uniform deflection after equipment is installed
4. Corners - mitered and continuously welded exterior surface for complete weatherability
5. Seal - weatherproof gasket is not exposed to elements. This eliminates deterioration of material
6. Curb cap - flat bottom design adapts to all curb configurations
7. Available in 1" and 2" deflections

Options

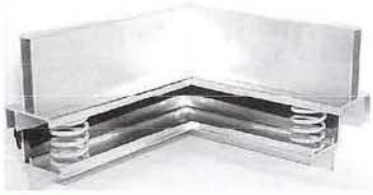
Cable restraints

Pictorial Description

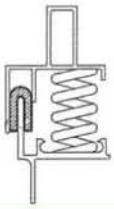
Typical installation



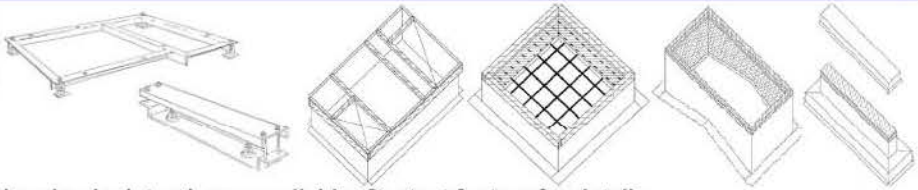
Cutaway view



Section



Other Bases / Curbs / Rails



Cooling tower rails.

Structural steel fan bases.

**** NEW ** Isolation curbs (roof curbs with integral spring isolators) now available. Contact factory for details.**

**** NEW ** Equipment curbs / rails (non-isolated) now available. Contact factory for details.**

Bolted Inertia Bases

Features + Application Information

VIMCO model **BIB** bolted inertia bases are constructed of factory formed steel members. The modular construction design allows 6" interval lengths/widths and all standard thickness (6", 8", 10", 12"). Inertia base components are supplied loose as standard for easy shipping and transportation at jobsite. Bases can also be supplied fully assembled as an option. VIMCO offers free of cost engineering services to size base and reinforcement per VIMCO / industry guidelines or project specifications. Job specific submittals are provided for each base, detailing load calculations and itemized component bill of materials. Standard design guidelines are:

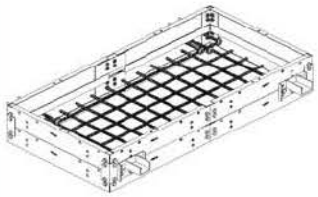
1. Minimum 1:1 ratio between inertia base weight and equipment weight
2. Base thickness shall be minimum 8% of the longest span between isolators
3. Concrete reinforcement by 1/2" rebar at 8" center to center spacing
4. (4) Adjustable height saving isolator mounting brackets supplied as standard
5. Inertia bases are designed for post-drill concrete anchor bolts

Options

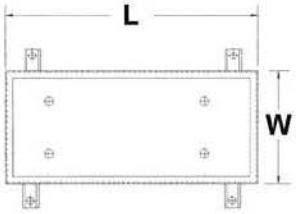
(8) isolator mounting brackets instead of (4)
T shaped bases
Preassembled shipment

Pictorial Description

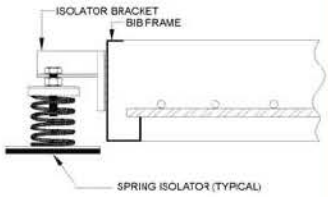
Iso view



Plan view



Section



Welded Inertia Bases

Features + Application Information

VIMCO model **IB** inertia bases are specifically designed and engineered to receive poured concrete, for use in supporting mechanical equipment requiring a reinforced concrete inertia base. Bases are available in 6", 8", 10" 12" thicknesses. VIMCO offers free of cost engineering services to size base and reinforcement per VIMCO / industry guidelines or project specifications. Standard design guidelines are:

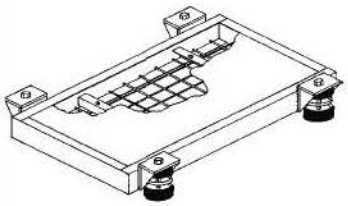
1. Minimum 1:1 ratio between inertia base weight and equipment weight
2. Base thickness shall be minimum 8% of the longest span between isolators
3. Concrete reinforcement by 3/8" rebar at 8" center to center spacing
4. Height saving isolator mounting brackets supplied as standard
5. Inertia bases are designed for post-drill concrete anchor bolts

Options

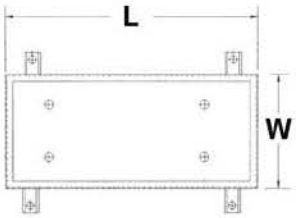
Anchor bolts or anchor bolt templates
(6), (8) isolator mounting brackets instead of (4)
T shaped bases

Pictorial Description

Iso view



Plan view



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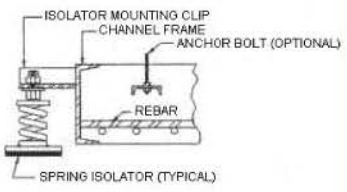
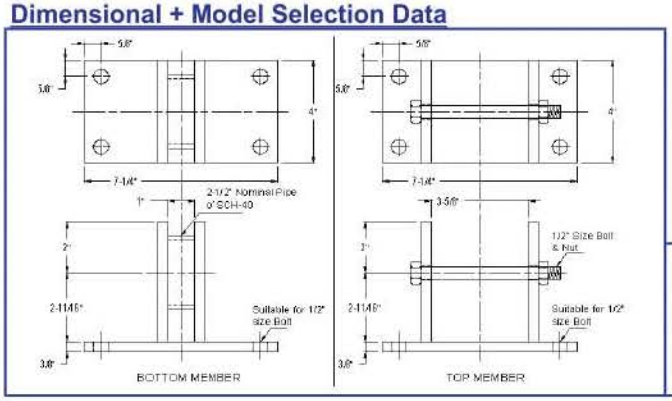


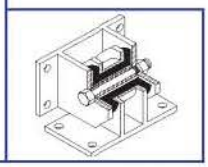
Seismic Snubber

Features + Application Information

VIMCO model **SNB3-3050** is an all-directional (3-axis) device designed to restrain and decelerate motion of resiliently mounted equipment resulting from external loads or seismic activity, to acceptable limits. The device consists of interlocking welded steel members, separated by a molded neoprene insert. Neoprene element is designed to prevent direct metal to metal contact between 2 steel members, and provide a minimum of 3/4" snubbing material in all directions. Device is manufactured to allow free unrestricted movement of equipment of not less than 1/8", limited to a maximum of 1/4" before coming in to contact with energy absorbing neoprene insert. Design also allows for removal of neoprene element for visual inspection and/or replacement.

Dimensional + Model Selection Data





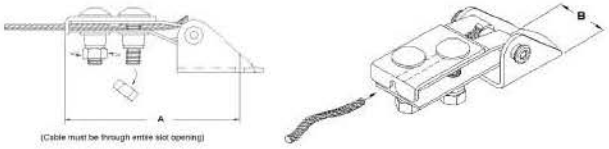
MAXIMUM APPROVED LOADS:	
HORIZONTAL:	3050 lbs
VERTICAL:	3050 lbs

Seismic Cable Restraint System

Application Information

1. For permanent attachment of cable brace to structure / equipment / hanger
2. Designed for use with 7x19 strand core galvanized aircraft cable

SCRSB models

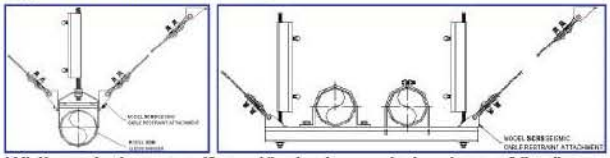


SCRSB series

Model	Part Dimensions (inches)			Cable		Max Design Load (lbs)
	Rod / Bolt size	A	B	Model	DIA. (")	
SCRSB-01-xx	3/8" to 3/4"	4-5/16	2	SC-01	1/8	975
SCRSB-02-xx	3/8" to 3/4"	5	2-1/4	SC-02	3/16	2050
SCRSB-03-xx	3/8" to 3/4"	5	2-5/8	SC-03	1/4	3150

Rod/Bolt	
Code	Size
04	3/8"
05	1/2"
06	5/8"
07	3/4"

Typical installation details

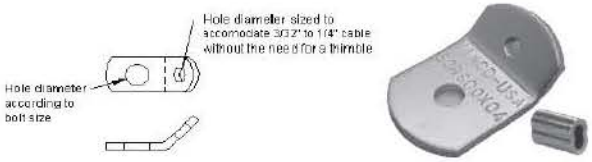


Features:

1. Quick installation (no shackles, thimbles, u-bolts, clevis angles...)
2. Cable easily slides into oversized front arch opening
3. Breakaway hex nuts assure verification of proper installation
4. Will swivel to final installation angle
5. Low carbon steel, electro-galvanized finish
6. Maximum load rating based on cable breaking strength

While ordering specify rod/bolt size code in place of "xx" e.g. for 1/8" cable with 3/8" bolt order SCRSB-01-04

SCRSC models

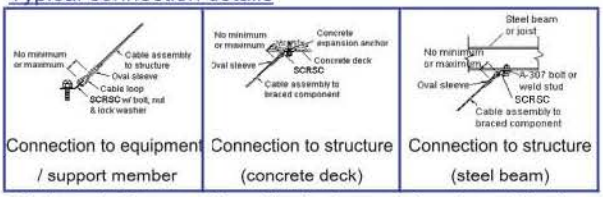


SCRSC series

Model	Rod / Bolt size	Cable		Max Design Load
		Model	DIA.	
SCRSC-00-xx	1/4" to 1-1/4"	SC-00	3/32"	600
SCRSC-01-xx	1/4" to 1-1/4"	SC-01	1/8"	1100
SCRSC-02-xx	1/4" to 1-1/4"	SC-02	3/16"	2667
SCRSC-03-xx	1/4" to 1-1/4"	SC-03	1/4"	4400

Rod/Bolt codes			
Code	Size	Code	Size
02	1/4"	07	3/4"
04	3/8"	08	7/8"
05	1/2"	10	1"
06	5/8"	12	1-1/4"

Typical connection details



Features:

1. Complies with ASCE 19 and SMACNA Restraint Manual as required by FEMA, NEHRP, IBC, OSHPD, UNC, BOCA, SBCCI, other Building Codes
2. Permanent end fitting
3. Maintains break strength of cable and does not require thimbles
4. (2) SCRSC's can be stacked on single rod to make a 2-way brace
5. Simple installation
6. Maximum load rating based on cable breaking strength

While ordering specify rod/bolt size code in place of "xx" e.g. for 3/32" cable with 3/8" bolt order SCRSC-00-04

Springs

Features + Application Information

1. High deflection, low natural frequency
2. Springs should be selected in the range of minus 30% to plus 25% of rated load (RL)
3. Springs electrogalvanized in accordance with ASTM B633-13 Type II, Class 2

Dimensional + Model Selection Data

(Refer to page 2 for isolator star rating system)

GALVANIZED STEEL SPRINGS

Spring no.	Color		RL	SL	Deflection at SL	Spring constant	O.D.	FSH	Rating
	Main	Stripe	(lbs)	(lbs)	(inches)	(lb/inch)			
021	SILVER	BLUE	20	30	0.75	40	1-1/4	1.5	★
022	SILVER	RED	44	66	0.75	88			★
023	SILVER	YELLOW	70	105	0.75	140			★
024	SILVER	WHITE	100	150	0.75	200			★
041	SILVER	BLUE	15	23	1.54	15	1-1/4	2.25	★
042	SILVER	RED	33	50	1.48	34			★
043	SILVER	YELLOW	57	86	1.39	62			★
044	SILVER	WHITE	76	115	1.33	87			★
045	SILVER	PINK	148	222	1.33	168			★
081	SILVER	BLUE	32	48	3.20	15	2	4	★
082	SILVER	ORANGE	50	76	2.90	26			★
083	SILVER	BROWN	89	134	2.80	48			★
084	SILVER	BLACK	158	237	2.40	99			★
085	SILVER	YELLOW	280	420	2.05	204			★
086	SILVER	RED	360	540	2.05	264			★
087	SILVER	GREEN	485	728	2.01	361			★
101	SILVER	PINK	56	85	1.40	61	2	4	★
102	SILVER	BLACK	76	115	1.30	89			★
103	SILVER	BLUE	113	170	1.30	131			★
104	SILVER	YELLOW	150	225	1.30	174			★
105	SILVER	BROWN	216	325	1.20	271			★
106	SILVER	RED	300	450	1.20	375			★
107	SILVER	PURPLE	400	600	1.20	500			★
108	SILVER	ORANGE	500	750	1.10	682			★
109	SILVER	GREEN	600	900	1.00	900			★
110	SILVER	GRAY	733	1100	0.80	1375			★
111	SILVER	WHITE	866	1300	0.80	1625			★
112	SILVER	GOLD	1000	1500	1.00	1500			★
113	SILVER	NIL	466	700	1.00	700	1-5/32		★
121	SILVER	BLUE	40	60	1.30	47	2	2.75	★
122	SILVER	ORANGE	66	100	1.30	77			★
123	SILVER	BROWN	110	165	1.20	138			★
124	SILVER	BLACK	173	260	1.00	260			★
125	SILVER	YELLOW	246	370	1.00	372			★
126	SILVER	RED	300	450	1.00	450			★
127	SILVER	GREEN	560	840	1.15	731			★
140	SILVER	BLUE	66	100	2.25	45	2	5	★
141	SILVER	BLACK	133	200	2.25	89			★
142	SILVER	RED	250	375	2.00	188			★
143	SILVER	GREEN	333	500	2.00	250			★
144	SILVER	GRAY	476	714	2.00	357			★
147	SILVER	WHITE	953	1430	2.00	715			★
148A	SILVER	YELLOW	1261	1892	2.00	946			★
146B	SILVER	WHITE	400	600	2.00	300	1-1/4		★
150	SILVER	BROWN	83	125	1.30	97	2-1/2	3.625	★
151	SILVER	ORANGE	150	225	1.30	174			★
152	SILVER	GREEN	216	325	1.20	271			★
153	SILVER	RED	300	450	1.20	375			★
154	SILVER	BLACK	400	600	1.20	500			★
155	SILVER	WHITE	500	750	1.10	682			★
156	SILVER	GRAY	600	900	1.00	900			★
157	SILVER	BLUE	733	1100	0.90	1223			★
158	SILVER	GOLD	1200	1800	1.00	1800			★
159	SILVER	NIL	1666	2500	1.00	2500			★
161	SILVER	RED	416	625	1.00	625	1-5/16		★
181	SILVER	PINK	86	130	4.30	30	2-1/2	6	★
182	SILVER	GREEN	133	200	4.00	50			★
183	SILVER	BLUE	180	270	3.60	75			★
184	SILVER	YELLOW	266	400	3.20	125			★
185	SILVER	BROWN	486	730	3.60	200			★
186	SILVER	RED	713	1070	3.00	350			★
187	SILVER	WHITE	926	1390	3.00	464			★
199	SILVER	BLACK	533	800	3.00	267	1-11/16		★
201	SILVER	PINK	60	90	3.00	30	2-1/2	6	★
202	SILVER	GREEN	100	150	3.00	50			★
203	SILVER	BLUE	150	225	3.00	75			★
204	SILVER	YELLOW	250	375	3.00	125			★
205	SILVER	BROWN	400	600	3.00	200			★
206	SILVER	RED	700	1050	3.00	350			★
207	SILVER	WHITE	926	1390	3.00	464			★
219	SILVER	BLACK	533	800	3.00	267	1-11/16		★

SL: Load at which spring will become solid or theoretical maximum load
RL: Rated load based on ASHRAE defined 50% additional travel to solid
FSH: Free spring height

Products & Engineering Services Compliance Certificate

This certifies that VIMCO cataloged range of vibration isolation products and seismic restraints meets or exceeds industry standards set for their design and manufacture, and that engineering services are performed to the most conservative standard specified by engineer of record.

1. Applicable standards and certifications for individual products and services are indicated in relevant submittal catalogs and consist of the following:

ANSI/MSS SP-58-2009:	Pipe Hangers and Support – Materials, Design, Manufacture, Selection, Application, and Installation
OSHPD:	Special Seismic Certification Preapproval (OSP) Program
MIL-W-1511-A:	Military Specification Wire Rope, Steel (Carbon) Flexible, Preformed
ASTM A1023:	Standard specification for Stranded Carbon Steel Wire Ropes
ASCE 7-16:	Minimum Design Loads for Buildings and Other Structures
IBC 2015:	Structural Seismic Design Manual

2. Seismic 'G' ratings for all seismic restraint products are 3rd party PE certified as indicated in relevant submittal catalogs.

3. All carbon steel used in the manufacture of VIMCO vibration isolation and seismic restraint products is mill certified and engineered for cold forming, which enhances structural integrity of the fabricated component. Steel raw material complies with the following standards:

ASTM A1008:	Cold Rolled Steel
ASTM A1011:	Hot Rolled Steel
ASTM A653:	Hot-Dip Zinc Coated Steel Sheet

4. Where a galvanic corrosion proof coating is factory applied, the followings standards are adhered to:

ASTM A123:	Standard specification for Zinc (Hot-Dip Galvanized) Coatings on Iron or Steel Products
ASTM B633:	Standard specification for Electrodeposited Coatings of Zinc on Iron and Steel.

5. Where an electrostatic powder based corrosion proof coating is factory applied, the following standards are adhered to:

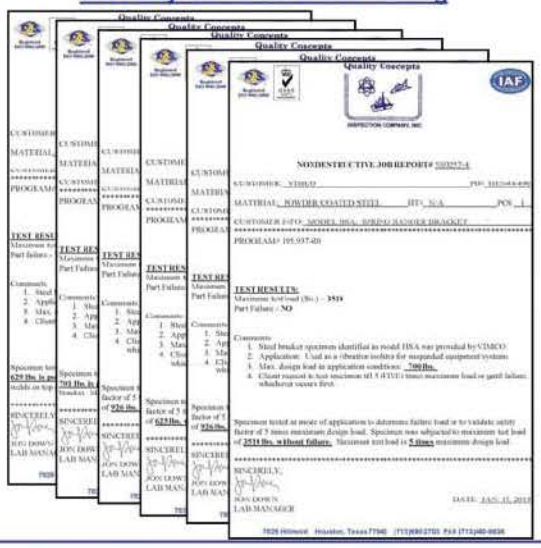
ASTM D4138:	Standard practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means

Quality Control & Certifications

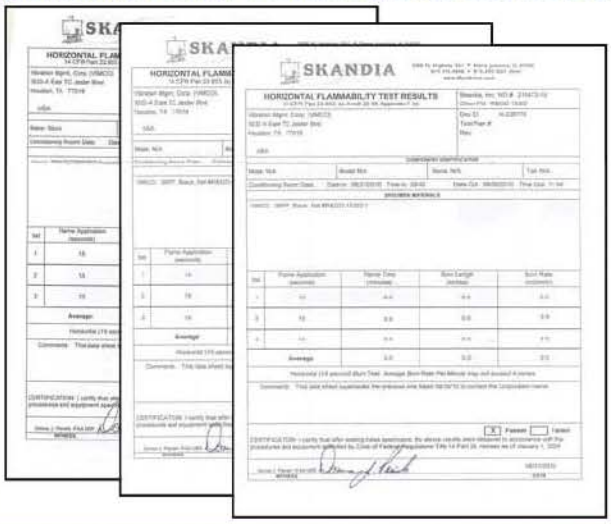
OSHPD Seismic Shake Table Testing (OSP program)


EASE
EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
DIMPLEX THERMAL SOLUTIONS
SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS
ATTACHMENT 1: KOOLANT KOOLER CHILLERS
Dimplex Thermal Solutions

3rd Party Non-Destructive Testing


Quality Concepts
NONDESTRUCTIVE JOB REPORT
TEST RESULTS:
Part Failure - NO
SINCERELY,
LAB MANAGER

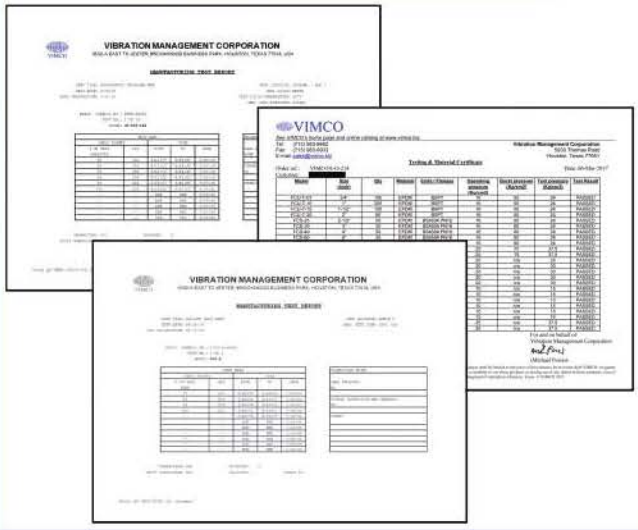
Flammability Testing - Federal Regulation 14CFR23.853


SKANDIA
HORIZONTAL FLAMMABILITY TEST RESULTS

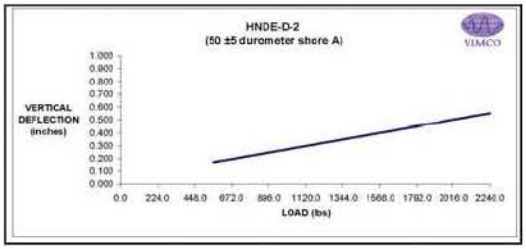
United States Patent and Trademark Office Registration

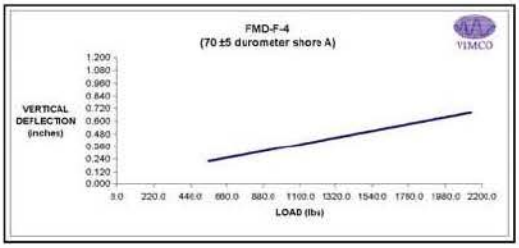

The United States of America
CERTIFICATE OF REGISTRATION
PRINCIPAL REGISTER

Factory Testing and Material Certification


VIBRATION MANAGEMENT CORPORATION
VIMCO

Computerized Load Deflection Curves





LIMITED WARRANTY

Subject to terms and conditions herein, Vibration Management Corporation ("VIMCO") warrants to the original owner at the original installation site that products manufactured by VIMCO ("Products") comply, at the time of manufacture, with VIMCO literature, and will be free from defects in materials and workmanship for a period of 12 months after the date of start-up or 18 months after the date of shipment from factory, whichever shall be less (the "Warranty Period")

REMEDY

A. The sole remedy for breach of this warranty is expressly limited to either the repair / ex-factory replacement, or refund of VIMCO ex-factory sale price (at VIMCO's sole option), of any Product found to have manufacturing defects under conditions of normal use within the Warranty Period. Installation is not included.

B. The owner must notify the original installer of the Product and VIMCO (Attn: Warranty Claims, 5930 Thomas Road Houston, TX 77041), in writing, within the Warranty Period, providing a detailed description of all claimed defects. Transportation to factory or other designated facility for repairs of any Products or components of Products alleged defective shall, in all events, be the responsibility and at the cost of the owner.

EXCLUSIONS

VIMCO shall have no liability for:

A. Incidental, special or consequential damages such as loss of the use of products, facilities or production, inconvenience, loss of time or labor expense involved in repairing or replacing the alleged defective Product.

B. The performance of any Product under conditions varying materially from those under which such Product is usually tested under industry standards as of the time of shipment.

C. Any damage to the Product due to abrasion, erosion, corrosion, deterioration, abnormal temperatures or the influence of foreign matter or energy.

D. The design or operation of owner's plant or equipment or of any facility or system of which any Product may be made a part.

E. The suitability of any Product for any particular application.

F. Any failure resulting from misuse, modification not authorized by VIMCO in writing, improper installation or lack of proper maintenance.

G. Equipment furnished by owner, either mounted or unmounted, or when contracted for by the owner to be installed or handled.

VIMCO's liability under this warranty shall not in any case exceed the VIMCO ex-factory sale price for the Product found to be defective.

THIRD-PARTY WARRANTIES

For goods or components not manufactured by VIMCO, above mentioned warranty obligations of VIMCO shall be limited by the warranty actually extended to VIMCO by its vendors.

SEVERABILITY

To the extent that any provision of this warranty would be void or prohibited under applicable law, such provisions shall be limited in effect to the minimum extent necessary to render the remaining provisions hereof enforceable.

NO OTHER WARRANTIES

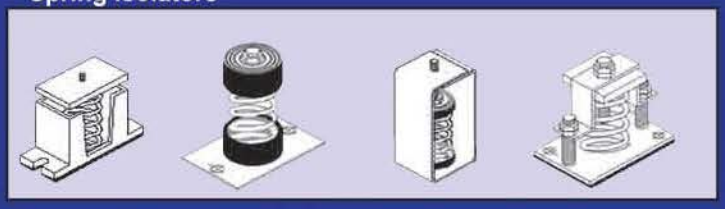
VIMCO makes no implied warranty of merchantability or fitness for particular purpose, or other warranties with respect to any products or services except as expressly set forth in this limited warranty.

Notes

VIMCO™ PRODUCT RANGE

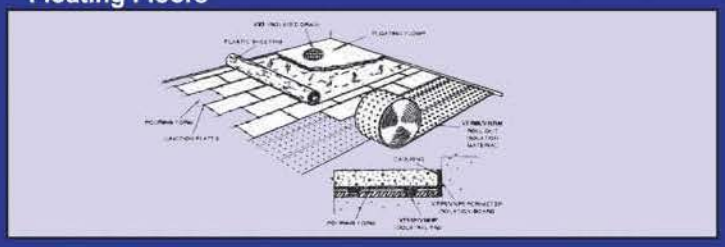
since 1983

* Spring Isolators

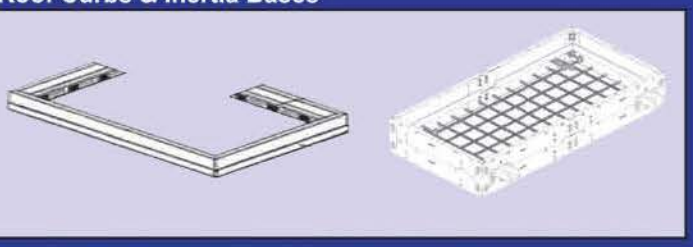


* Elastomer Isolators

* Floating Floors



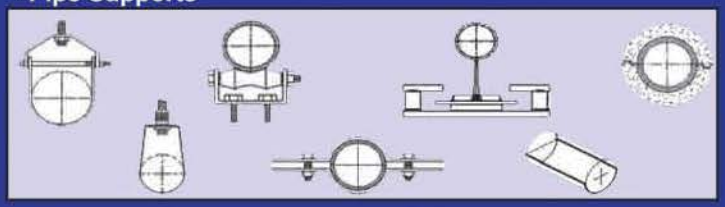
* Roof Curbs & Inertia Bases



* Vibration Isolation Pads

* Seismic Restraints

* Pipe Supports



* Expansion Joints

* Piping Accessories

* Ducting Accessories

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G-1010 Rev. 4