

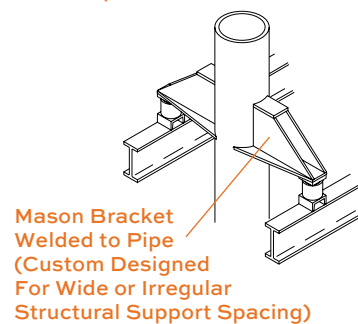
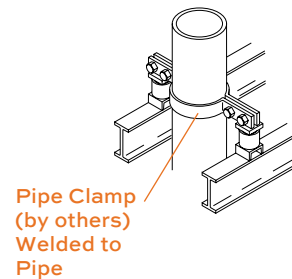
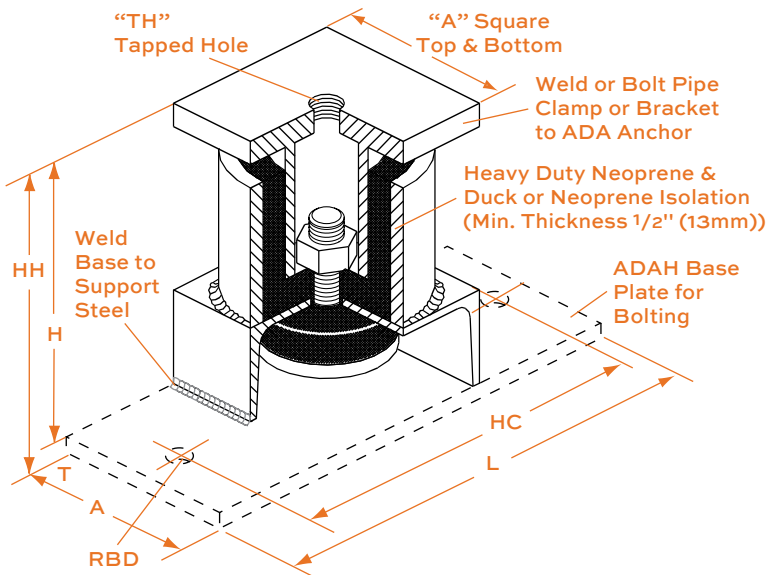
# ALL-DIRECTIONAL ANCHORS & VERTICAL SLIDING GUIDES

for RISERS with STRAIGHT PIPE, OFFSETS or EXPANSION JOINTS

# ADA & VSG

## ADA All Directional Anchors

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



### TYPE ADA & ADAH DIMENSIONS

Type	Size	A		H		L		T		HC		HH		RBD		RBD Required Bolt Dia. for Max. TH
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)			
ADA-	75	3	76	4 1/2	114	6	152	1/4	6	5	127	4 3/4	121	3/8	10	1/2 - 13UNC
	200	4	102	7	178	11	279	3/8	10	8 1/2	216	7 3/8	187	5/8	16	5/8 - 11UNC
	350	*	*	7 1/4	184	12	305	1/2	13	9 1/2	241	7 3/4	197	3/4	19	None
ADAH-	600	9	229	11	279	14 1/2	368	3/4	19	12	305	11 3/4	298	1 1/4	32	None
	800	11	279	13 1/2	343	17 1/2	445	1	25	14 1/2	368	14 1/2	368	1 1/2	38	None

Size 350 - Top is 5" (127mm) x 5" (127mm), Bottom is 6" (152mm) x 6" (152mm).

### TYPE ADA & ADAH RATINGS

Type	Size	Anchoring Capacity per Pair		Rated Defl.	
		(lb)	(kg)	(in)	(mm)
ADA-	75	1,000	453	0.1	2.5
	200	6,000	2722	0.1	2.5
	350	24,000	10886	0.1	2.5
ADAH-	600	60,000	27216	0.1	2.5
	800	100,000	45359	0.1	2.5

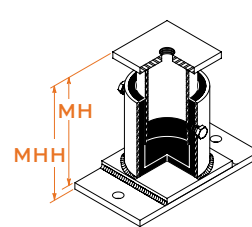
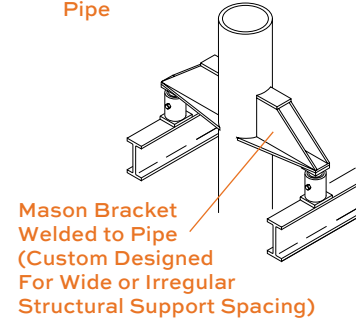
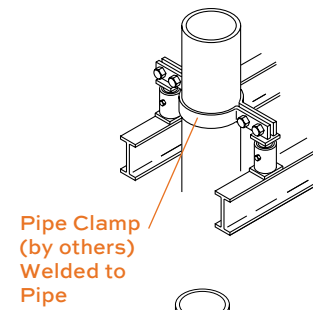
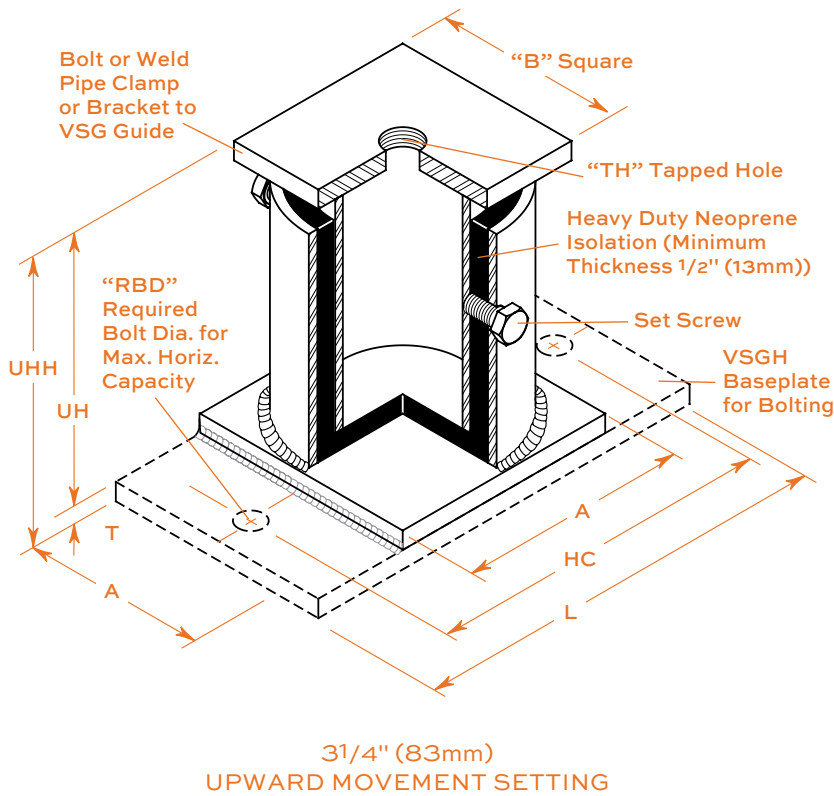
Each pair of ADA(H) all directional anchors provides high frequency noise and vibration isolation for those locations where movement must be controlled.

When the anchors are attached to piping as shown in the illustrations below, all expansion will be directed from this point.

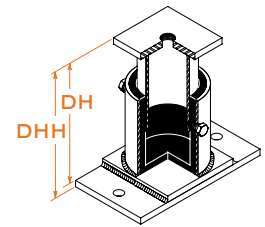
Anchors are always used in pairs.

### VSG Vertical Sliding Guide

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



15/8" (41mm)  
UPWARD OR DOWNWARD  
MOVEMENT SETTING



31/4" (83mm)  
DOWNWARD  
MOVEMENT SETTING

#### TYPE VSG & VSGH DIMENSIONS

Type	Size	A		B		L		T		HC		RBD	TH	31/4" (83mm) Downward Movement		31/4" (83mm) Upward Movement		15/8" (41mm) Up or Down Movement							
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)			(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)				
VSG-	75	3	76	3	76	61/4	159	1/4	6	5	127	3/8	10	101/4	260	101/2	267	7	178	71/4	184	85/8	219	87/8	225
	200	41/2	114	4	102	93/4	248	3/8	10	8	203	5/8	16	101/2	267	107/8	276	71/4	184	75/8	194	87/8	225	91/4	235
VSGH-	350	6	152	5	127	11	280	1/2	13	9	229	3/4	19	103/4	273	111/4	286	71/2	191	8	203	91/8	232	95/8	244

#### TYPE VSG & VSGH RATINGS

Type	Size	Horizontal Capacity per Pair		Possible Horizontal Defl.		For Use with Pipe Sizes	
		(lb)	(kg)	(in)	(mm)	(in)	(mm)
VSG-	75	1,000	453	0.1	2.5	thru 5	thru 125
	200	8,000	3629	0.1	2.5	6 thru 12	150 thru 300
VSGH-	350	11,300	5126	0.1	2.5	14 thru 24	350 thru 600

Each pair of VSG guides provides high frequency noise and vibration isolation for those locations where movement must be guided in the axial direction.

Standard VSG Guides can be set to accommodate:

- 0 Upward Movement and 31/4" (83mm) Downward Movement.
- 31/4" (83mm) Upward Movement and 0 Downward Movement.
- 15/8" (41mm) Upward or Downward Movement.
- Special settings as required and certified.

Guides are always used in pairs.

When pairs of VSG Guides are used as shown in the illustrations below right, radial motion is controlled while axial motion is guided.

Pipe Size (in) (mm)	Recommended Anchor Size Selections					Size Selections & Maximum Recommended Vertical Guide Spacing to Prevent Pipe Buckling									
	Pair of Anchors Used to Resist Expansion Joint Thrust (Illustration 1)		<sup>A</sup> Pairs of Anchors Used to Resist Offset Thrust (Illustration 1)			Guide Sizes		Straight Solid Riser	Offset Solid Riser	Risers Having Expansion Joints					
	Operating Pressures		Offset (ft) (m) Size			Theoretical Non-Supportive Directional Guides (Illustration 2)	One Guide Each End and Maximum Distance Between Guides D	One Anchor Each End and Maximum Distance Between Guides D	Stainless Steel		Neoprene		<sup>C</sup> Balance of Guides Distance Between Joint and Anchor D		
	Up to 150 psi (10 kg/cm <sup>2</sup> ) Size	151 - 300 psi (20 kg/cm <sup>2</sup> ) Size							One Anchor Each End of Pipeline		One Anchor Each End of Pipeline		Operating Pressures		
	Distance Joint to First Guide D		Distance First to Second Guide D		Distance Joint to First Guide D		Distance Joint to First Guide D		Distance Joint to First Guide D		Distance Joint to First Guide D		Distance Joint to First Guide D		
Up to 150 psi (10 kg/cm <sup>2</sup> ) (ft) (m)		151 - 300 psi (20 kg/cm <sup>2</sup> ) (ft) (m)		Up to 150 psi (10 kg/cm <sup>2</sup> ) (ft) (m)		151 - 300 psi (20 kg/cm <sup>2</sup> ) (ft) (m)		Up to 150 psi (10 kg/cm <sup>2</sup> ) (ft) (m)		151 - 300 psi (20 kg/cm <sup>2</sup> ) (ft) (m)		Up to 150 psi (10 kg/cm <sup>2</sup> ) (ft) (m)		151 - 300 psi (20 kg/cm <sup>2</sup> ) (ft) (m)	
1 25	ADA-75	ADA-75	7.4	2.26	ADA-75	VSG-75	40 12	24 7	8" 0.2	2'-0" 0.61	8" 0.20	12 3.66	12 3.66		
1 1/4 35	ADA-75	ADA-75	8.2	2.5	ADA-75	VSG-75	40 12	24 7	8" 0.2	2'-0" 0.61	8" 0.20	12 3.66	12 3.66		
1 1/2 40	ADA-75	ADA-75	9.0	2.7	ADA-75	VSG-75	40 12	24 7	10" 0.25	3'-0" 0.91	10" 0.25	12 3.66	12 3.66		
2 50	ADA-75	ADA-75	9.8	3.0	ADA-75	VSG-75	40 12	24 7	10" 0.25	3'-0" 0.91	10" 0.25	12 3.66	12 3.66		
2 1/2 65	ADA-75	ADA-200	11.0	3.4	ADA-75	VSG-75	40 12	30 9	12" 0.31	3'-6" 1.07	12" 0.31	12 3.66	12 3.66		
3 80	ADA-75	ADA-200	12.3	3.7	ADA-75	VSG-75	40 12	36 11	12" 0.31	3'-6" 1.07	12" 0.31	17 5.18	14 4.27		
4 100	ADA-75	ADA-200	13.9	4.2	ADA-75	VSG-75	40 12	36 11	1'-4" 0.41	4'-8" 1.42	1'-4" 0.41	25 7.62	19 5.80		
5 125	ADA-75	ADA-200	15.0	4.6	ADA-75	VSG-75	50 15	36 11	2'-0" 0.61	7'-0" 2.13	2'-0" 0.61	30 9.14	23 7.01		
6 150	ADA-200	ADA-350	16.8	5.1	ADA-200	VSG-200	50 15	36 11	2'-0" 0.61	7'-0" 2.13	2'-0" 0.61	37 11.28	27 8.23		
8 200	ADA-200	ADA-350	18.8	5.7	ADA-200	VSG-200	50 15	50 15	2'-6" 0.76	9'-4" 2.85	2'-6" 0.76	45 13.72	33 10.06		
10 250	ADA-200	ADA-350	21.3	6.5	ADA-200	VSG-200	60 18	60 18	3'-4" 1.0	11'-8" 3.56	3'-4" 1.07	58 17.68	42 12.80		
12 300	ADA-350	ADA-600	23.0	7.0	ADA-350	VSG-200	72 22	72 22	4'-0" 4.0	14'-0" 4.27	4'-0" 0.41	60 18.29	48 14.63		
14 350	ADA-350	ADA-600	24.0	7.3	ADA-350	VSG-350	85 26	85 26	4'-8" 1.4	16'-4" 4.98	4'-8" 1.43	71 21.64	51 15.55		
16 400	ADA-350	ADA-600	25.8	7.9	ADA-350	VSG-350	85 26	85 26	5'-4" 1.6	18'-8" 5.69	5'-4" 1.63	78 23.75	56 17.07		
18 450	ADA-600	ADA-800	27.5	8.4	ADA-350	VSG-350	85 26	85 26	6'-0" 1.8	21'-0" 6.40	6'-0" 1.83	85 25.91	61 18.95		
20 500	ADA-600	ADA-800	29.0	8.8	ADA-350	VSG-350	120 37	120 37	6'-8" 2.0	23'-4" 7.11	6'-8" 2.03	91 27.74	65 19.81		
24 600	ADA-800	ADA-600	—	—	ADA-600	VSG-350	120 37	120 37	8'-0" 2.4	28'-0" 8.53	8'-0" 2.44	103 31.40	75 22.86		
26 650	ADA-800	Special Designs as Required	—	—	ADA-600	Special Designs as Required	120 37	120 37	10'-0" 3.0	35'-0" 10.67	10'-0" 3.05	118 35.97	85 25.91		
28 700	ADA-800	Special Designs as Required	—	—	ADA-600		120 37	120 37	10'-0" 3.05	35'-0" 10.67	10'-0" 3.05	118 35.97	85 25.91		
30 750	ADA-800	Special Designs as Required	—	—	ADA-600		120 37	120 37	10'-0" 3.05	35'-0" 10.67	10'-0" 3.05	118 35.97	85 25.91		

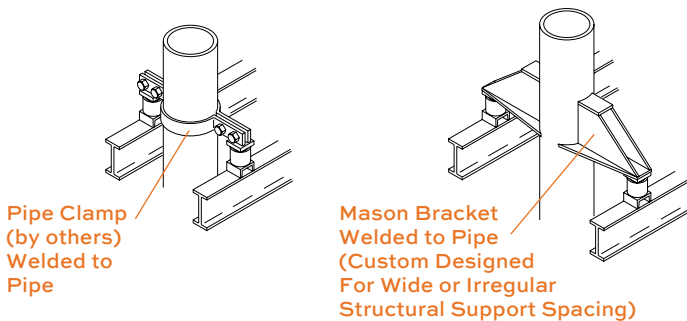
**A** Reference forces calculated on standard reference for 1" (25mm) movement at pipe stress of 15,000 psi (1050 kg/cm<sup>2</sup>).

**B** If the anchor is next to the joint on one side, no guide is needed on that side.

**C** Guides beyond the anchor may be spaced as in a straight solid run since there is no thrust force.

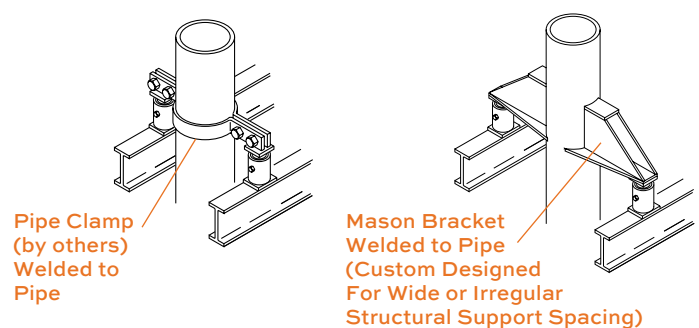
**ADA ANCHOR**

Illustration 1



**VSG SLIDING GUIDE**

Illustration 2



To more clearly define and control riser load shifts caused by pipe expansion and contraction, strategically placed spring supports may be incorporated. See Hanger Bulletin H-610 (page 7-17) for a detailed description of this method using Type SLFH Steel Spring Mounts or Type HES Pipe Expansion Hangers.

