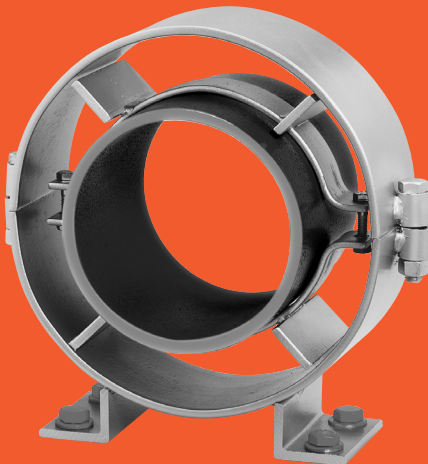


# MASON-MERCER

## ADJUSTABLE SLIDING GUIDE



**Manufactured as per  
Expansion Joints  
Association  
EJMA Standard.**



Typical Spider Guide

All of us have gotten accustomed to using Spider Pipe Guides because they have been around forever. In looking for a better way, we found the following areas for improvement:

1) There is no single Spider Guide for any pipe size. The ID is standard, but the length of the guide fins and the ID of the housing all vary with insulation thickness. There can be as many as five selections for the same diameter pipe.

This makes stocking difficult and the contractor cannot buy without knowing the insulation thickness.

2) While they are used in other positions, most Spider Guide have no allowable load ratings as they are single purpose Guides.

Our primary objective was to solve these two problems so we came up with the idea of a simple insulation height adjustment. Just loosen two bolts on each side of the base and move to the higher position when job requirements call for thicker insulation. Not only are they easier to order and dimension, but the price remains the same regardless of insulation thickness. This is not true with the spider design as cost is based on the shell OD. Cost estimates are no longer difficult with our single price per size.



ASG Guides are most commonly installed with their base plates bolted down. However, they can be used as guides for horizontal runs when bolted to walls or columns or for overhead runs when bolted to ceilings or overhead steel. Check Anchorage Capacity when bolting to ceilings†.

If support is provided by other means such as rollers, guide spacing would be based on guidance spacing requirements rather than loadings.

### Guides as Supports

Most guide manufacturers publish no guide support strength information because their guides are designed for the single purpose of maintaining alignment.

When the guides are spaced properly for that single purpose, forces are small and housing strength is seldom an issue.

In many applications there can be a major savings in using the guide as a support rather than just a guide in all horizontal runs. For example, if we were supporting 23 feet of 12" piping weighing 4000 lbs. on ASG Guides only and the Guide ratings show acceptance of the load in that position, there is no need for another support. Dry steel to steel friction is about 70% so 2800 lbs. (0.70 x 4000 lbs.) would have to be added to the appropriate anchor loading. Friction is usually a very small proportion of anchor loading.

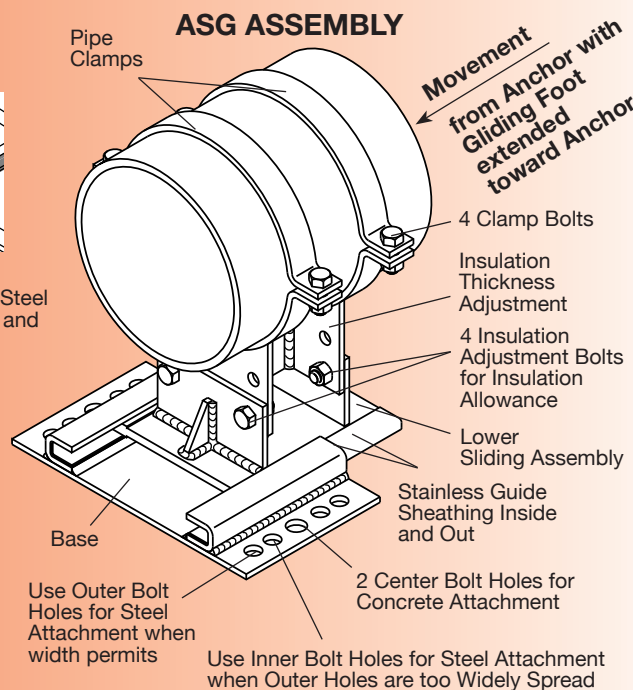
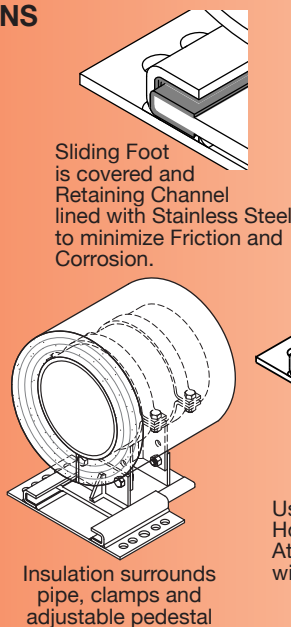
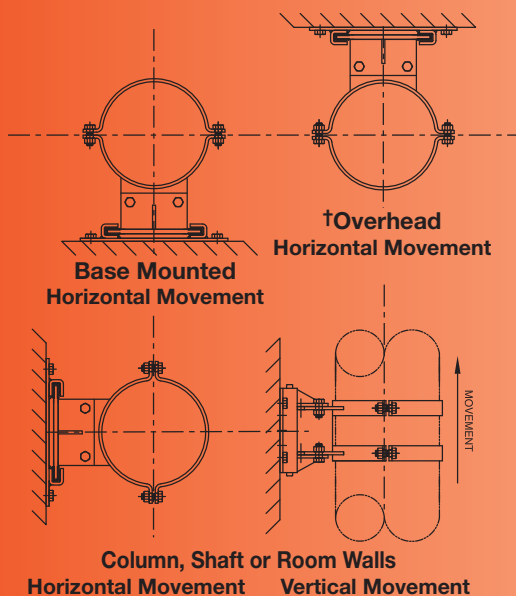
### ASG LOAD RATINGS

ASG Pipe Size (in) (mm)	Rated Base Mounted Pipe Load* (lbs) (kgs)	†Rated Hanging Pipe Load* (lbs) (kgs)	Rated Transverse Pipe Load* (lbs) (kgs)	Normal Guide Spacing if used as only Support (ft) (m)	Normal Guide Load if used as only Support (lbs) (kgs)	Maximum Guide Spacing if used as only Support** (ft) (m)	Maximum Guide Load if used as only Support (lbs) (kgs)	Standard Weight Carbon Steel Pipe with Water and Insulation (lbs/ft) (kg/m)
3/4 20	1200 544	1200 544	750 340	5 1.5	10 4.5	7 2.1	14 6.4	2.0 3.0
1 25	1200 544	1200 544	750 340	5 1.5	12 5.4	7 2.1	17 7.7	2.4 3.6
1 1/4 32	1200 544	1200 544	750 340	5 1.5	16 7.3	7 2.1	23 10.4	3.3 4.9
1 1/2 40	1200 544	1200 544	750 340	8 2.4	32 14.5	9 2.7	36 16.3	4.0 6.0
2 50	1200 544	1200 544	750 340	10 3.0	56 25.4	10 3.0	56 25.4	5.6 8.3
2 1/2 65	1200 544	1200 544	750 340	10 3.0	86 39.0	11 3.5	95 43.0	8.4 12.5
3 80	1850 839	1700 771	1000 454	10 3.0	114 51.7	12 3.7	137 62.1	11.4 17.0
4 100	1900 862	1800 816	1050 476	10 3.0	169 76.7	14 4.3	237 108.0	16.9 25.2
5 125	1925 873	1830 830	1100 499	10 3.0	251 113.9	16 4.9	402 183.0	25.1 37.4
6 150	1950 885	1950 885	1300 590	10 3.0	330 149.7	17 5.2	561 255.0	33.0 49.1
8 200	3050 1383	2775 1259	1850 839	10 3.0	530 240.4	19 5.8	1007 457.0	53.0 78.9
10 250	5550 2517	4350 1973	2750 1247	10 3.0	774 351.0	22 6.7	1703 772.0	77.4 115.2
12 300	5600 2540	5600 2540	3950 1792	10 3.0	1060 480.8	23 7.0	2438 1105.0	106.0 157.8
14 350	7000 3175	7000 3175	5500 2495	10 3.0	1180 535.3	25 7.6	3050 1383.5	118.0 175.6
16 400	8800 3992	8800 3992	7300 3311	10 3.0	1450 657.7	27 8.2	4050 1837.0	145.0 215.8

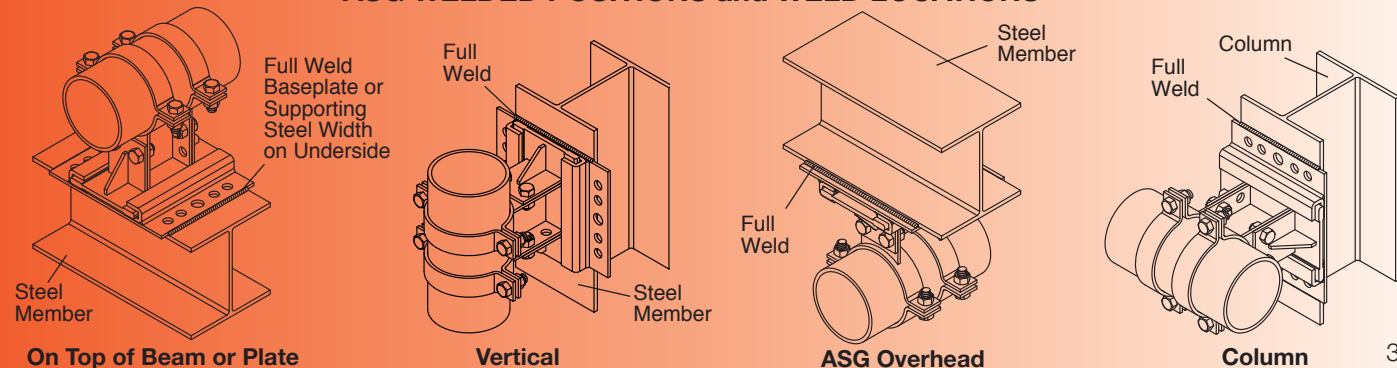
\* All Safety Factors meet or exceed 5.

\*\* Manufacturers Standardization Society (MSS-SP-69) maximum spacing for standard weight carbon steel pipe with water and insulation.

### ALL MODE ASG INSTALLATION POSITIONS



### ASG WELDED POSITIONS and WELD LOCATIONS





## PIPE GUIDES AND GUIDING

Correct alignment of pipe as provided by guides is vital for the proper performance and life of an Expansion Joint. Pipe expansion joints will apply compressive loads to the pipe line, which may cause pipe to buckle when not properly guided. Buckling can be caused by the spring constant or resistance of the expansion joint, plus the pressure thrust from the expansion joint. Proper pipe guiding near an expansion joint starts with locating the first guide within 4 diameters of the expansion joint, and the second guide within 14 diameters of the first guide. For long runs of pipe, additional guides may be needed to prevent buckling as determined by the Intermediate Guide Spacing Chart shown below. Note that as the pressure increases, the intermediate guide spacing decreases because of the increased buckling force.

In addition to the locations of the anchors and guides to protect expansion joints and control movements as shown above, there are often long lengths of pipe between anchors or guides that would buckle like over-loaded columns.

Checking the Intermediate Guide Spacing Chart will show when additional Guides are needed.

To use the Chart, select the maximum pressure and move up to intersection with the red Pipe Size line. Follow horizontally all the way to the left and read maximum guide spacing.

*For Example:*

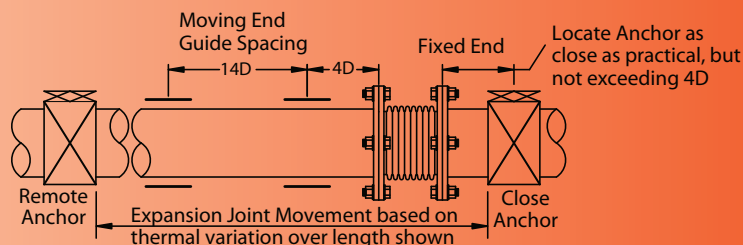
*A 5" 200 psi steel line must be guided every 30 feet to prevent buckling when expansion joints are used.*

*At 110 psi the Guide Spacing would increase to 40 feet.*

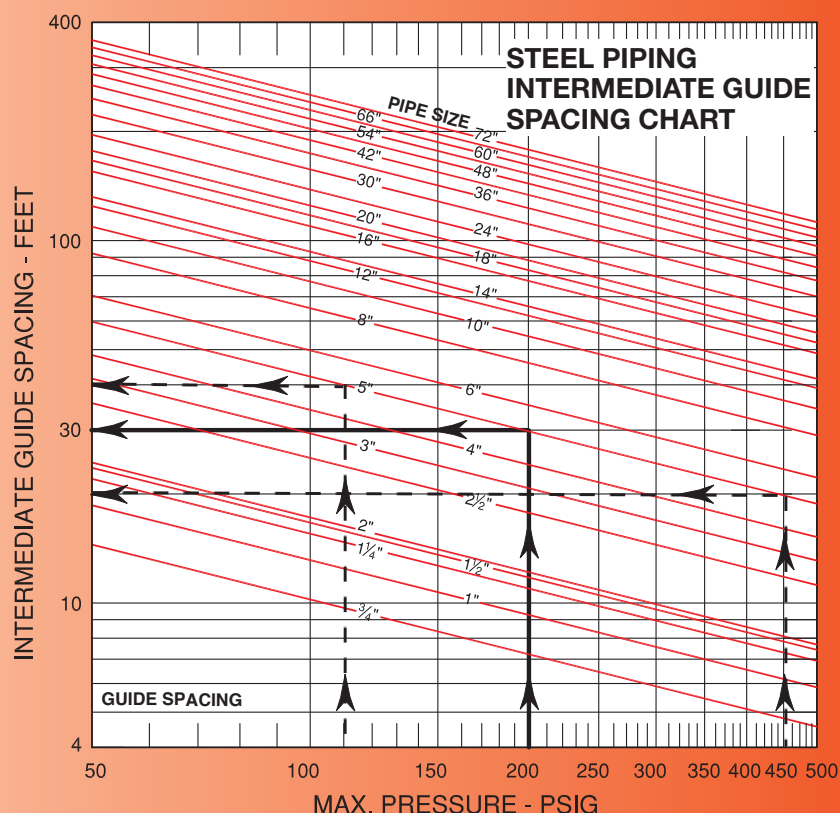
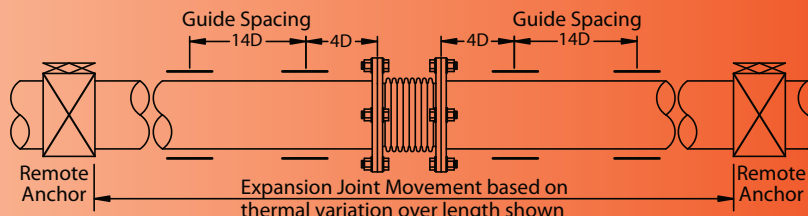
*At 450 psi it would drop to 20 feet.*

## GUIDE SPACING – Referencing Pipe Diameter “D”

### Guides and Anchors for Joint located near Anchor



### Guides and Anchors for Joint located between Remote Anchors



## SPECIFICATION

Pipe guides shall be manufactured with stainless steel wrapping the carbon steel foot where it passes through horizontal U guides similarly lined to prevent corrosion. The baseplate shall have multiple holes for bolting to beam flanges or flat surfaces. Bases may be welded in position in lieu of bolting. Height must be adjustable to

accept different thicknesses of insulation. Guides shall be professionally load rated for bottom, overhead, side mounted or riser positioning to provide both load bearing and guiding capabilities. Submittals shall include load ratings in all modes. Guides shall be type ASG as manufactured by Mason Industries, Inc.



# MASON – MERCER

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