

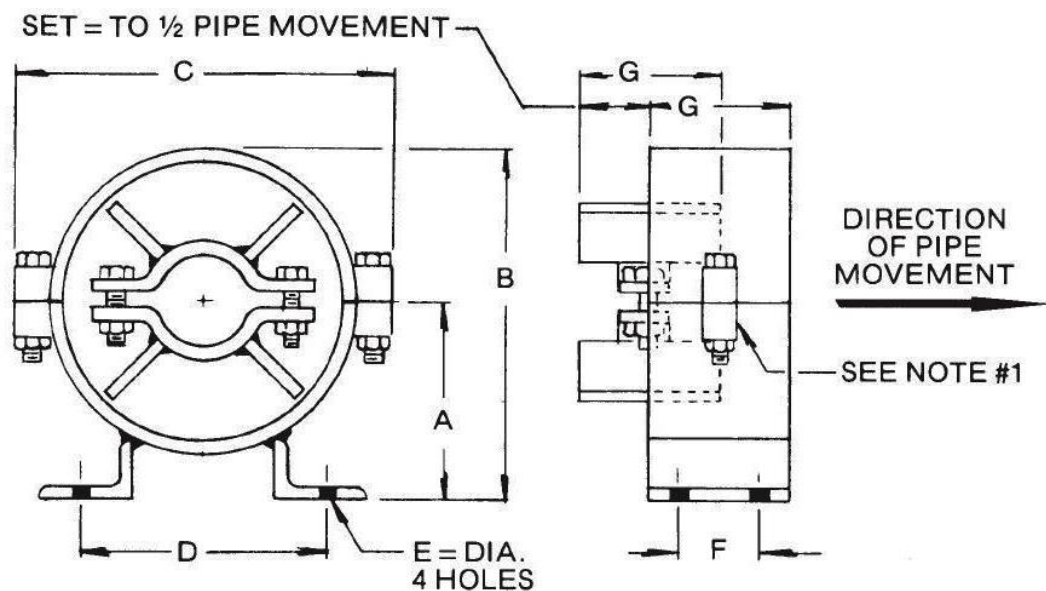
Installation Instructions: Spider Type Pipe Guides

Guiding: Piping systems that contain expansion joints tend to buckle under the compressive forces in the system. Due to the flexibility of the expansion joint and the internal pressure thrust loading, the pipe acts as a column that must be properly guided to prevent buckling.

The piping must be properly guided with the expansion joint centered in the piping segment and at least two spider type pipe guides on each side of the expansion joint so neither the expansion joint nor the piping can squirm out of the piping centerline. An expansion joint installed at the end of the piping segment next to an anchor will only require guides on the one side. Pipe hangers and supports are not guides. Guides are not for supporting piping systems.

Spider type guide spacing should be a distance of 4 pipe diameters from the expansion joint to the first guide, 14 pipe diameters from the first guide to the second guide, and a calculated distance, based on the pipe diameter and the working pressure of the system, for all additional guides. (see chart)

Installation: The pipe guide base is set to elevation on the pipeline and welded or bolted to a supporting structure. With the upper half removed, the pipe with the spider installed is set into the base and insulated if required. The upper half is then bolted into place on the base to complete the guide installation. The spider spacers must be offset to 1/2 of the required piping movement.



Anchoring: Pipeline and/or expansion joint failures can be caused by under designed and/or inadequate anchors on the piping system. Main anchors restrain the ends of the piping so that all expansion is directed into the expansion joint. Anchors must be able to withstand the pressure thrust load, the deflection forces of the expansion joint, and the frictional resistance forces of the hangers, guides, and supports. Anchors are required at each pipeline change of direction, blind end, valve, major branch connection, or change in pipe diameter.

Be sure all supports, guides, and anchors are properly installed and functioning before pressurizing the piping system. NOTE: Anchor, guide thrust, and weight load requirements must be considered in the structural system design.

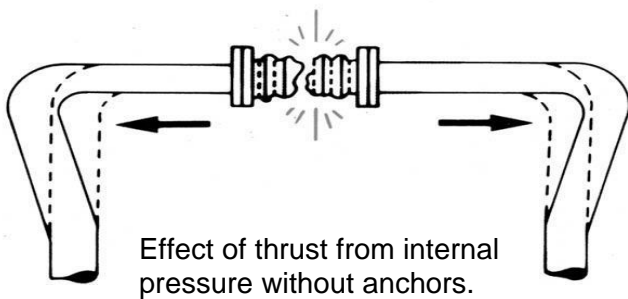
Guide Spacing for Steel Pipe Systems Data from Expansion Joint Manufacturers Association

Pipe Size	Distance to 1 st Guide	Distance Between 1 st & 2 nd Guide	Distance Between Additional Guides		
			@ 50 PSI	@ 150 PSI	@300 PSI
3/4"	3"	11"	14 ft	8 ft	7 ft
1"	4"	14"	21 ft	12 ft	10 ft
1 1/4"	5"	17"	23 ft	13 ft	12 ft
1 1/2"	6"	21"	28 ft	17 ft	13 ft
2"	8"	28"	32 ft	18 ft	15 ft
2 1/2"	10"	35"	35 ft	22 ft	16 ft
3"	12"	42"	38 ft	24 ft	17 ft
4"	16"	56"	52 ft	31 ft	22 ft
5"	20"	68"	63 ft	38 ft	25 ft
6"	24"	84"	68 ft	40 ft	28 ft
8"	32"	112"	87 ft	45 ft	38 ft
10"	40"	140"	107 ft	60 ft	48 ft
12"	48"	168"	118 ft	70 ft	50 ft

Guide Spacing for Copper Tube Systems Data from Heating, Piping and Air Conditioning

Tube Size	Distance to 1 st Guide	Distance Between 1 st & 2 nd Guide	Distance Between Additional Guides		
			@ 25 PSI	@ 50 PSI	@70 PSI
3/4"	3"	11"	7 ft	6 ft	5 ft
1"	4"	14"	9 ft	8 ft	6 ft
1 1/4"	5"	17"	14 ft	11 ft	9 ft
1 1/2"	6"	21"	16 ft	12 ft	10 ft
2"	8"	28"	19 ft	14 ft	12 ft
2 1/2"	10"	35"	23 ft	17 ft	15 ft
3"	12"	42"	27 ft	20 ft	18 ft

To install the spider type pipe guides on copper tubing with dielectric spacers: Shape two dielectric spacers so each will fit 1/2 the copper tubing and place them opposite each other on the surfaces where the spider ring will grip the tubing. Tighten the spider ring on the tubing. Install insulation if required and finish bolting and assembling the guide.



Effect of thermal expansion without guides.



Proper alignment of anchors and guides.

