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BIS – Better Installation Systems

Datasheet

Slide Guides

BIS
FIXING SYSTEMS

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Data sheet Slide Guides (EN) - 03/2011 - PDF - subject to modifications

IH 188 AE Guide

- pipes 15 NB - 150 NB
- lateral restraint
- T = 50 mm or 100 mm
- max. movement = 160 mm
- F = 150 mm max.
- various finishes available

IH 188 C Guide

- pipes 50 NB - 150 NB
- lateral and vertical restraint
- max. movement = 160 mm
- F = 80 mm min. - 150 mm max.
- various finishes available

IH 189 A Guide

- pipes 150 NB and above
- heavy lateral and vertical restraint
- max. movement = 160 mm
- F = 80 mm min. - 150 mm max.
- various finishes available

IH 188 AE Skid

- pipes 15 NB - 150 NB
- skid base to accomodate
- multi-directional movement
- light load
- F = 150 mm max.
- various finishes available

IH 188 C Skid

- pipes 50 NB - 150 NB
- skid base to accomodate
- multi-directional movement
- medium load
- F = 80 mm min. - 150 mm max.
- various finishes available

IH 189 A Skid

- pipes 150 NB and above
- skid base to accomodate
- multi-directional movement
- heavy load
- F = 80 mm min. - 150 mm max.
- various finishes available

Pipe Guide and Anchor Considerations

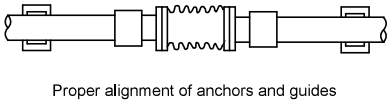
The following are extracts from a typical Bellows guide.

Friction and weight
In some applications it is necessary to consider the weight of the pipe, insulation, flowing medium, and forces such as wind loading.
Pipes must be guided and the force required to overcome guide friction will be transmitted to anchors.
The coefficient of friction for steel on steel supports and guides can be taken as 0.35 to 0.40. Where roller supports are used the coefficient reduces to approximately 0.2. The use of P.T.F.E. further reduces this figure by at least 50% provided loadings in excess of 3.5 MPa (500 psi) are maintained.

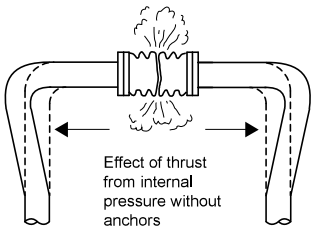
Pipe guides and guiding
Correct alignment of the adjoining pipe is very important in the proper functioning of the expansion joint. Although expansion joints are designed and built for long and satisfactory life, maximum service will be obtained only when the pipe line has the recommended number of guides and is anchored and supported in accordance with good engineering practice. Pipe guides are necessary to insure proper application of movement of the expansion joint and to prevent buckling of the line. Buckling

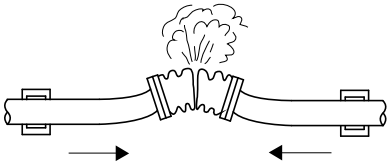
may be caused by a combination of two things (1) the flexibility of the expansion joint and (2) the internal pressure loading on the pipe which causes in to act like a column loaded by the pressure thrust of the expansion joint.

Design of alignment pipe guides should allow sufficient clearance between the fixed and moving parts of the alignment guide to ensure correct guiding without introducing excessive frictional forces. The first two alignment guides immediately adjacent to each side of the expansion joint should be circumferential to the pipe. Most commercially available alignment guides are acceptable. However, installation procedures should be followed with extreme care to avoid damaging the guiding features of the unit. Alignment guides made from roller supports may be used so long as a minimum of three (3) rollers equally spaced around the circumference of the pipe are provided. However, four (4) rollers at 90 degree intervals are preferable as shown in figure 16. Planar pipe guides must be designed with additional clearance in one direction to permit the intended lateral deflection and/or bending of the pipe to take place. A single-roller support, U-bolt or pipe hanger, which only supports the weight of the pipe line, is not a substitute for either a proper pipe alignment or a planar guide. Pipe alignment provides strength and rigidity under design operating conditions. Also they should be sufficiently resistant to corrosion and wear to prevent eventual malfunction of the guide. As with pipe anchors, alignment guides can be subjected to lateral forces as high as 15% of the total axial force, and the system designer must assure himself that the guide, guide attachment and the structure to which it is attached are all designed to conservative stress levels.



Proper alignment of anchors and guides





Effect of thermal expansion
without guides