

Guardian In The News

Recently the Guardian family of companies was featured in the Northwest Herald (our local newspaper) highlighting our multi-generational workforce. See the link below to the article online to read more.



Mike Wells (from left), 59, Bonnie Rankins, 66, Phil Grandt, 24, and Linda Thorson, 65, stand Thursday at Guardian Electric in Woodstock. For the first time in American history, the workforce spans four generations. (Lathan Goumas - lgoumas@shawmedia.com)

www.nwherald.com/2013/08/26/multigenerational-workplace-forcing-employers-to-adapt/a7z05h3/?page=1

AHR Expo 2014!



It is never too early to start planning. AHR Expo is just around the corner. We are expecting a great turnout in the "Big Apple" just like we had in "Big D" this year. We are going to be in **Booth 1818**. We hope to see everyone there!

Question of the Month

It seems like the perfect time to go back to the Issue of anchoring and guiding requirements. A component of anchoring that can't be overlooked is the end thrust load. This determines the strength of the anchor required in the application. To determine the end thrust is pretty easy, it is the effective area of the bellows times the pressure in the system plus the spring rate of the bellows. Or you can refer to the THURST FORCE TABLE that is included in our literature. The table for the 308/311 is partially included below right for our example. Be honest, this is probably the first time you ever thought about this table.

For example if you have a 3" line and you are using a 308 Series expansion joint in the application and the pressure in the system is 150 PSI, what force must the anchor hold? Use the 3" column and the 150 PSI row and you see for this case the anchor must hold 1658 pounds of force. Then you have to add in the spring rate of the bellows which can be found in the 308 Specification table. A portion of that table is below left. In this case let's say we have a 3" movement, single bellows. Per the chart the force is 300 pounds. Adding that to the 1658, we have 1958 pounds total. Normally a safety factor is also applied, this can vary based on individual engineer's preference and is added to the 1958 pounds MINIMUM before choosing the anchor. Remember, each anchor needs to hold against this force and anchors need to be placed at every 90° change of direction in the pipe run.

Thrust Force Table For 308 Expansion Joint

Nominal I.D. Bellows Element	3.5"
Nominal O.D. Bellows Element	4.11
Effective Area in Square Inches	11.05
	THRUST FORCE LBS @ SPECIFIED PRESSURES
Pressure PSI	
125	1381
150	1658
175	1934
200	2210

Specifications For 308 Expansion Joint

Nom. Pipe Size (In.)	Total † Axial Move. (In.)	Axial Force to Compress	
3	S	1	150
		2	225
		3	300
	D	2*	150
		4*	225
		6*	300

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