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PRODUCT INFORMATION

Installation Instructions for Molded Teflon[®] Expansion Joints

SERVICE CONDITIONS:

⇒ Make sure the expansion joint ratings for temperature, vacuum, spring rates and movements match the system requirements. Contact the manufacturer if the system requirements exceed those of the expansion joint selected.

ALIGNMENT:

⇒ Expansion joints are not designed to make up for piping misalignment errors. Pipe misalignment should be no more than 1/8" in any direction. Misalignment of an expansion joint will reduce the rated movements and can cause stress of the material properties, thus causing reduced service life.

LIMIT ROD BOLTING:

⇒ Limit bolts are factory set at the maximum allowable travel position to prevent overextension. Do not remove or alter nuts at any time. Damage or personal injury can result due to changes in limit rod nut settings.

ANCHORING:

⇒ Solid anchoring is required whenever the pipeline changes direction. Expansion joints should be located as close as possible to these anchor points. If an anchoring system is not used, any associated pressure thrust can cause excessive movement, ultimately damaging the expansion joint. **(It should be noted that the attached limit rods are designed to limit movement and are not designed to handle pressure thrust.)**

PIPE SUPPORT:

⇒ Piping must be supported so expansion joints do not carry any pipe weight.

PERSONNEL PROTECTION:

⇒ It is strongly recommended that safety shields be used for all hazardous service to protect against serious personal injury in the event of expansion joint failure.

INSTALLATION:

⇒ Store expansion joint with wood covers in place to protect PFA or PTFE flange surfaces from damage until ready to install.

⇒ Check to make sure PFA or PTFE surfaces are clean and free of foreign sediment. Remove nicks, burs, and deep scratches with fine emery cloth. If surface irregularities cannot be completely removed, install a PTFE envelope type gasket to obtain an adequate seal. (See table on page 3 for installed neutral lengths.)

⇒ Install expansion joints to the prescribed neutral lengths as stated in table listings. If expansion joints are used in high temperature processes, it is recommended that units be installed at near extended values. For cold process installations, expansion joints should be installed in a nearly compressed length. These settings will enable the expansion joint to realize full travel capabilities. (See table for installed neutral lengths.)

⇒ Thread installation bolts from mating flange side to prevent possible damage to PFA or PTFE elements. Extend bolts beyond the expansion joint flange by no more than 1-2 threads. Nuts are not necessary due to threaded flange holes.

⇒ Tighten flange bolts with a torque wrench. Tighten in an alternate crossing pattern in 20% increments until 80% of final bolt torques have been achieved. Tighten to final torque values (listed below) in a clockwise fashion around the flange to ensure bolts carry equal stress burdens.

TORQUE TABLE LISTING							
SIZE I.D. (IN)	TORQUE (FT/LBS)	SIZE I.D. (IN)	TORQUE (FT/LBS)	SIZE I.D. (IN)	TORQUE (FT/LBS)	SIZE I.D. (IN)	TORQUE (FT/LBS)
1	10	3	40	10	50	20	80
1 ¼	10	1	30	12	60	24	90
1 ½	15	2	40	14	70	-	-
2	25	3	45	16	65	-	-
2 ½	30	8	60	18	90	-	-

⇒ Re-tighten bolts after first full cycle of operation. Re-tighten as necessary after every planned maintenance shutdown. All bolts should be re-torqued to the above listed values.



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OPERATION:

⇒ After expansion joints are installed, it may be necessary to air blast the exterior to remove foreign debris, such as metal chips, from between the convolutions. The expansion joint should then be covered with a shield to protect from damage and foreign debris during operation. (Note: Do not weld in immediate vicinity of expansion joint unless it is properly protected.)

WARNING: Teflon® Expansion Joints may operate in pipelines or equipment carrying fluids and/or gases at elevated temperatures and pressures and may transport hazardous materials. Precautions should be taken to protect personnel in the event of leakage or splash. Teflon® Expansion Joints should not be installed in inaccessible areas where inspection is impossible

NEUTRAL LENGTH TABLE LISTING												
STYLE	442				443				445			
	Nominal Size I.D.	Neutral Length	Comp in	Ext in	Lat in	Neutral Length	Comp in	Ext in	Lat in	Neutral Length	Comp in	Ext in
1	1.375	0.250	0.250	0.125	1.75	0.500	0.500	0.250	3.00	0.50	0.50	0.500
1 ¼	1.375	0.250	0.250	0.125	1.75	0.500	0.500	0.250	3.00	0.50	0.50	0.500
1 ½	1.375	0.250	0.250	0.125	2.000	0.500	0.500	0.250	3.50	0.75	0.75	0.500
2	1.562	0.250	0.250	0.125	2.75	0.750	0.750	0.375	4.00	1.00	1.00	0.500
2 ½	2.250	0.3125	0.3125	0.1875	3.188	0.750	0.750	0.375	4.00	1.00	1.00	0.500
3	2.250	0.375	0.375	0.250	3.625	1.000	1.000	0.500	5.00	1.00	1.00	0.500
4	2.625	0.500	0.500	0.250	3.625	1.000	1.000	0.500	5.25	1.25	1.25	0.625
5	3.250	0.500	0.500	0.250	4.00	1.000	1.000	0.500	6.00	1.25	1.25	0.625
6	2.750	0.500	0.500	0.250	4.00	1.125	1.125	0.5625	6.00	1.25	1.25	0.625
8	4.000	0.500	0.500	0.250	6.00	1.125	1.125	0.5625	8.00	1.75	1.75	0.6875
10	5.250	0.500	0.500	0.250	7.00	1.125	1.125	0.5625	8.00	1.75	1.75	0.6875
12	6.000	0.500	0.500	0.250	7.875	1.125	1.125	0.5625	9.00	2.00	2.00	0.6875
14	-	-	-	-	5.875	1.1875	1.1875	0.375	8.875	2.00	2.00	0.375
16	-	-	-	-	5.875	1.1875	1.1875	0.375	8.875	2.00	2.00	0.375
18	-	-	-	-	5.875	1.1875	1.1875	0.375	8.875	2.00	2.00	0.375
20	-	-	-	-	5.875	1.1875	1.1875	0.375	8.875	2.00	2.00	0.375
24	-	-	-	-	6.875	1.1875	1.1875	0.375	9.875	2.00	2.00	0.375