



## PTFE Bellows Joint/Pump Connector (T1C, T2C)

### OPERATION, INSTALLATION AND MAINTENANCE INSTRUCTIONS

**General:** The PTFE Bellows joint is primarily used as a flex connector designed to be used to isolate vibration, absorb thermal expansion, and allow for minor pipe misalignment. The PTFE joint features a Teflon bellows, urethane coated floating ductile iron flanges and integral control rods. The joint is available in 150 lb. class. Consult the T1R, T2R, factory submittal for specific performance specifications.

#### **Application:**

- 1) PTFE Bellows expansion joints can be used for axial, lateral, or angular movements.
- 2) They are often used as a pump connector to eliminate vibration from a piping system that is caused by rotating equipment.
- 3) PTFE joints are also ideal for connection to plastic piping systems
- 4) When installing between flanges, to avoid clearance issues it may be necessary to remove one of the pre-installed control rods prior to installing the PTFE. Care should be taken to reinstall the control rod to its original length.
- 5) These joints are not suitable for applications that result in torque on the joint.

#### **Joint Preparation**

1. Before installation check the interior, exterior and flange faces of the expansion joint for cuts or gouges.
2. Care must be used when pushing the joint into the breach between the mating flanges so as not to damage the PTFE sealing area.

#### **Installation:**

1. Inspect joint for shipping damage
2. DO NOT use gaskets between the sphere and the flange surface.
3. PTFE Joint is to be installed in its neutral position. Do not compensate for flange or pipe misalignment by putting torque, compressive, or extension force on the joint.
4. Apply bolt torque to the flange bolts in accordance with the values in the below tables.
5. Use the proper bolt for the PTFE joint as indicated on product submittal
6. If used for thermal expansion and contraction, the piping system must be properly anchored and guided in accordance with EJMA guidelines.

#### **Testing:**

1. Joint may be one-time pressure tested to 1.5 times the maximum rated working pressure as published on the factory submittal for each specific joint.
2. Metraflex recommends a hydrostatic test with all air in the system removed. If an air test is performed, appropriate safety precautions must be made.

#### **Precautions:**

1. Do not exceed maximum pressure or temperature during operation.
2. Use the proper bolt for the PTFE joint as indicated on product submittal





**Maintenance:**

Expansion joints must be easily accessible to allow for periodic inspection. Bellows should be inspected for any signs of damage such as cracking, damage, scores or other deterioration. Damaged expansion joints should be replaced immediately. Metraflex PTFE expansion joints have no serviceable parts and do not require maintenance.

MODEL T-1-C											
MODEL #	JOINT SIZE I.D.	FACE TO FACE	MAXIMUM AXIAL TRAVERSE	MAXIMUM OFFSET	PRESSURE(PSI) VS. TEMPERATURE				GROSS WT.	Bolt Size	Flange Bolt Torque
	(in.)*	(in.)	(in.)	(in.)	70°F	200°F	300°F	400°F	(lbs.)		(ft-lbs)
T1R0100	1	1-3/8	1/4	1/8	170	135	100	70	2	1/2" -13 x 1"	18
T1R0150	1 1/2	1-3/8	1/4	1/8	170	135	100	70	3	1/2" -13 x 1 - 1/4"	18
T1R0200	2	1-9/16	1/4	1/8	170	135	95	65	7	5/8" -11 x 1 - 1/2"	45
T1R0250	2 1/2	2-1/4	5/16"	1/8	165	130	95	65	10	5/8" -11 x 1 - 3/4"	45
T1R0300	3	2-1/4	3/8	3/16"	165	125	90	60	12	5/8" -11 x 1 - 3/4"	45
T1R0400	4	2-5/8	1/2	1/4	160	125	85	60	18	5/8" -11 x 2"	45
T1R0500	5	3-1/4	1/2	1/4	155	120	85	60	24	3/4" -10 x 2"	89
T1R0600	6	2-3/4	1/2	1/4	150	115	85	55	29	3/4" -10 x 2"	89
T1R0800	8	4	1/2	1/4	145	110	80	55	47	3/4" -10 x 2 - 1/2"	89
T1R1000	10	5-1/4	1/2	1/4	140	110	80	55	64	7/8" -9 x 2 - 1/2"	121
T1R1200	12	6	1/2	1/4	135	105	75	50	72	7/8" -9 x 2 - 1/2"	121

MODEL T-2-C											
MODEL #	JOINT SIZE I.D.	FACE TO FACE	MAXIMUM AXIAL TRAVERSE	MAXIMUM OFFSET	PRESSURE(PSI) VS. TEMPERATURE				GROSS WT.	Bolt Size	Flange Bolt Torque
	(in.)*	(in.)	(in.)	(in.)	70°F	200°F	300°F	400°F	(lbs.)		(ft-lbs)
T2R0100	1	1-3/4	1/2	1/4	145	105	70	45	2	1/2" -13 x 1"	18
T2R0150	1 1/2	2	1/2	1/4	145	105	70	45	4	1/2" -13 x 1 - 1/4"	18
T2R0200	2	2-3/4	3/4	3/8	140	105	70	45	8	5/8" -11 x 1 - 1/2"	45
T2R0250	2 1/2	3-3/16	3/4	3/8	140	100	65	40	11	5/8" -11 x 1 - 3/4"	45
T2R0300	3	3-5/8	1	1/2	135	100	65	40	13	5/8" -11 x 1 - 3/4"	45
T2R0400	4	3-5/8	1	1/2	130	95	60	35	19	5/8" -11 x 2"	45
T2R0500	5	4	1	1/2	130	90	60	35	25	3/4" -10 x 2"	89
T2R0600	6	4	1 1/8	9/16"	125	90	60	35	30	3/4" -10 x 2"	89
T2R0800	8	6	1 1/8	9/16"	120	85	55	32	48	3/4" -10 x 2 - 1/2"	89
T2R1000	10	7	1 1/8	3/8	120	85	55	30	80	7/8" -9 x 2 - 1/2"	121
T2R1200	12	7-7/8	1 3/16"	5/16"	115	80	50	30	84	7/8" -9 x 2 - 1/2"	121

