Dresser TPS, LLC
1760 Haskell Road
Olean, New York



TX3® Large Diameter Coupling

Product Specifications

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1. Introduction

This document is intended to provide the specifications for the TPS TX3® Large Diameter Wide Range Pipe Coupling.

2. Features

1. Sleeve type coupling design
2. Dual layer hydraulically assisted gasket
3. All stainless-steel fasteners, fluoroelastomer coated for anti-galling
4. Wide Range Coupling
5. Suitable for all types of pipe materials – Ductile Iron, Cast Iron, Steel, PVC, Copper, AC, HDPE
6. Lightweight construction for easier handling
7. Allows for up to 4 degree deflection per coupling end
8. Connect pipes of two different diameters
9. Interior and exterior coating NSF-61 approved Fusion Bonded Epoxy and Epoxy Electroplated conforming to AWWA C213-01.

3. Design Materials

1. Middle Ring –ASTM A53 Grade A carbon steel or equivalent,
   ASTM A283 Grade C Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates – NSF 61 Fusion Bonded Epoxy-coated
2. End Rings – ASTM A536 Grade 60-40-18 Ductile Iron – Epoxy E-coated
3. Gasket – NSF 61 Approved Nitrile Rubber (NBR)
4. Draw bolts - ASTM A193 Stainless Steel, Xylan coated for anti-galling
5. Nuts - ASTM A194 – 18-8 Type 304 Stainless Steel Xylan coated for anti-galling
6. Spanner and Swivel – Type 304 Stainless Steel
7. Connection Nut Fasteners – Type 304 Stainless Steel

4. Pipe Diameter Ranges

Nominal Size	Overall Range Pipe Dia's.	Diameter Range With Inner Gasket Inserted	Diameter Range With Inner Gasket Removed
16”	17.10-19.20”	17.10-18.19”	18.11-19.20”
20” OS	21.25-23.35”	21.35-22.27”	22.27-23.35”
24” OS	24.60-26.70”	24.60-25.67”	25.59-26.70”

Table 1: Coupling Pipe Diameter Ranges

5. Conductor Pipe Materials - where coupling is designed to be used

The TX3® Coupling is designed for use with:

1. Steel Pipe
2. Ductile Iron Pipe
3. PVC Pipe
4. Asbestos Cement Pipe
5. HDPE with SDR less than or equal to than 17

Please contact the factory for special requirements of non-metallic pipe installations.

6. Pressure Ratings

The TX3® Large Diameter Coupling is designed to provide a pressure rating up to 260 psi.

7. Anti - Corrosion Coatings

The anticorrosion coating applied to the TX3® coupling body and end ring components is a multi-layer coating nominal thickness of 12 mils consisting of:

1. Zinc Phosphate Conversion Coating
2. Sealer
3. Fusion Bonded Epoxy outer coating

8. Gasket Design – Dual Layer- Hydraulically Assisted

The wide range sealing capability of the TX3® coupling is achieved by the use of a dual layer gasket, where the inner layer may be removed. Each nominal coupling pipe diameter size has two ranges of fit. The lower pipe diameter range is realized by using the removable inner layer gasket. Removing the inner layer gasket then extends the coupling diameter range to the higher diameter range set.

The NBR gasket material is resistant to Chloramine. The gaskets are molded from 100 percent virgin NBR and are compounded for water and sewer service in accordance with ASTM D2000. NSF-61 Certified.

The gaskets are compounded to resist water, oil, acids, alkalis, most (aliphatic) hydrocarbon fluids, and many other chemicals.

Gasket Working Temperature range -20 to 125 deg F. Please contact the factory for operating temperatures greater than 125 deg. F.

9. Draw Bolt Torque Ratings

See Table 2 for recommended draw bolt/nut torque requirements. Please retighten/retorque the bolts after repressurizing the line.

Bolt Torque (ft-lbs.)					
SIZE	STEEL, DI CI, AC	HDPE DR 9 to 13.5	HDPE DR 17	PVC SDR 21-26	PVC DR 18-14
16”-24” OS	100	100	100	100	100

Table 2: Bolt Torque Specifications

10. NSF 61 & NSF 372 Compliance

The coupling is tested and qualified to comply with the requirements of NSF 61 & NSF 372

1. NSF 61 – Drinking Water System Components - Health Effects
2. NSF 372 – Drinking Water System Components - Lead Content

11. Standards

The TX3® large diameter wide range coupling meets or exceeds the requirements of:

1. *AWWA C219*-11: *Bolted, Sleeve-Type Couplings for Plain-End Pipe*
2. NSF/ANSI 372: *Drinking Water System Components - Lead Content*
3. NSF*/ANSI* 61*: Drinking Water System Components*.
4. ASTM D2000: *Standard Classification System for Rubber Products in Automotive Applications*
5. AWWA C213-01: AWWA *Standard for Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipeline*
6. NACE RP-0394: *Standard Recommended Practice Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating*