SECTION 40 05 06

FABRICATED STEEL COUPLINGS, ADAPTERS AND SPECIALS FOR PROCESS PIPING

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\*\* NOTE TO SPECIFIER \*\* Ford Meter Box Co., Inc, Waterworks Products.
This section is based on the products of Ford Meter Box Co., Inc, which is located at:
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Web: [www.fordmeterbox.com](http://www.fordmeterbox.com)
[Click Here] for additional information.
Ford Meter Box is a family-owned manufacturer of waterworks products. Since 1898, Ford Meter Box has been dedicated to producing well-designed and thoroughly tested products, manufactured with the finest raw materials available, and supported by the most conscientious and professional group of employees found in the waterworks industry.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Fabricated Steel:
			1. Steel Coupling: 1/2 through 60 inch.
			2. Steel Coupling with End Cap: 14 through 60 inch.
			3. Steel Transition Coupling: 4 through 60 inch.
			4. Steel Reducing Coupling: 2 through 60 inch.
			5. Steel Flange Coupling Adapter: 4 through 48 inch.
			6. Equipment Connection Fitting: 3 through 48 inch.
			7. Dismantling Joint: 4 through 60 inch.
			8. Steel Expansion Joint: 4 through 24 inch.
			9. Restrainer Assembly: 4 through 60 inch.
			10. M11 Restrainer Assembly: 3 through 96 inch.
		2. Stainless Steel Type 304: CORINOX
			1. Stainless Steel Coupling: 1/2 through 60 inch.
			2. Stainless Steel Coupling with End Cap: 14 through 60 inch.
			3. Stainless Steel Transition Coupling: 4 through 60 inch.
			4. Stainless Steel Reducing Coupling: 2 through 60 inch.
			5. Stainless Steel Flange Coupling Adapter: 4 through 48 inch.
			6. Equipment Connection Fitting: 3 through 48 inch.
			7. Dismantling Joint: 4 through 60 inch.
			8. Stainless Steel Expansion Joint: 4 through 24 inch.
			9. Restrainer Assembly: 4 through 60 inch.
			10. M11 Restrainer Assembly: 3 through 96 inch.
		3. Stainless Steel Type 316: ULTRINOX
			1. Stainless Steel Coupling: 1/2 through 60 inch.
			2. Stainless Steel Coupling with End Cap: 14 through 60 inch.
			3. Stainless Steel Transition Coupling: 4 through 60 inch.
			4. Stainless Steel Reducing Coupling: 2 through 60 inch.
			5. Stainless Steel Flange Coupling Adapter: 4 through 48 inch.
			6. Equipment Connection Fitting: 3 through 48 inch.
			7. Dismantling Joint: 4 through 60 inch.
			8. Stainless Steel Expansion Joint: 4 through 24 inch.
			9. Restrainer Assembly: 4 through 60 inch.
			10. M11 Restrainer Assembly: 3 through 96 inch.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Add any sections below that may be relevant to this project.

* + 1. Section \_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Iron and Steel Institute (AISI).
		2. ASTM International (ASTM):
			1. ASTM A36 - Standard Specification for Carbon Structural Steel.
			2. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
			3. ASTM A194 - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
			4. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
			5. ASTM A242 - Standard Specification for High-Strength Low-Alloy Structural Steel.
			6. ASTM A436 - Standard Specification for Austenitic Gray Iron Castings.
			7. ASTM A536 - Standard Specification for Ductile Iron Castings.
			8. ASTM A1011 - Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
			9. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
		3. American National Standards Institute (ANSI).
		4. American Society of Mechanical Engineers (ASME).
		5. American Water Works Association (AWWA).
			1. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
			2. AWWA C207 - Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
			3. AWWA C213 - Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
			4. AWWA C221 - Fabricated Steel Mechanical Slip-Type Expansion Joints.
		6. National Science Foundation (NSF):
			1. NSF/ANSI 61 - Drinking Water System Components.
		7. International Standards Organization (ISO):
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. The intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
			1. All merchandise is warranted to be free from defects in material and factory workmanship for one year from the date of shipment from our factory. We will provide, free of charge, new products in equal quantities for any that prove defective within one year from the date of shipment from our factory. The manufacturer shall not be liable for any loss, damage, or injury, direct or consequential, arising out of the use of or the inability to use the product. Before using, the user shall determine the suitability of the product for user's intended use and user assumes all risk and liability whatever in connection therewith. No claims for labor or consequential damage will be allowed. The foregoing may not be changed except by agreement signed by an officer of the manufacturer.
			2. No other warranties are applicable or may be implied, including the implied warranty of merchantability and the implied warranty of fitness for particular purpose and any warranty relating to infringement or the like, all of which are disclaimed.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Ford Meter Box Co., Inc., which is located at:775 Manchester Ave.Wabash, IN 46992-0443Toll Free Tel: 800-826-3487Tel: 260-563-3171Fax: 260-563-0167Email: [request info (npeyton@fordmeterbox.com)](https://arcat.com/rfi?action=email&company=Ford%252BMeter%252BBox%252BCo.%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(15201fmb)%253A%2520&coid=32586&spec=15201fmb&rep=&fax=260-563-0167);Web: <http://www.fordmeterbox.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00 - Product Requirements.
	1. PERFORMANCE AND DESIGN REQUIREMENTS
		1. General Design Information: All the fabricated steel products specified are built to meet the requirements of applicable AWWA standards.
			1. Some fabricated products are designed and manufactured to fit a specific pipe diameter.
			2. To accommodate the manufacturing tolerances of various pipeline materials, couplings without an indicated range have a built in tolerance of plus or minus 0.10 inch as measured on the diameter.
	2. STEEL COUPLINGS, ADAPTERS AND SPECIALS FOR PROCESS PIPING
		1. Fabricated Steel Couplings:

\*\* NOTE TO SPECIFIER \*\* The FC3 coupling is manufactured in standard steel sizes with a steel center sleeve and ductile iron end rings. The FC3, in its standard configuration, may be used for water as well as natural gas applications. Delete if not required.

* + - 1. Steel Coupling: 1/2 through 60 inch.
				1. Style FC3: Sizes 1/2 through 4 inch. Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: ASTM A1011 Steel. End Rings: ASTM A536 Ductile iron.

Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: 304 stainless steel per ASTM A193 and A194

Fastening Hardware: 316 stainless steel per ASTM A193 and A194.

Fastening Hardware: Zinc plated with di-chromate seal (electro-galvanized).

Fastening Hardware: Blue Fluorocarbon coating.

\*\* NOTE TO SPECIFIER \*\* The Ford FC4 Steel Coupling is an all steel coupling designed to connect various types of plain end pipe with the same O.D. and is available for pipe sizes up to a maximum nominal diameter of 60 inches. Design and performance characteristics of fabricated steel couplings are specified in AWWA Standard C219. The Style FC4 Coupling is available in a variety of center sleeve lengths and thicknesses. Delete if not required.

* + - * 1. Style FC4: Sizes 4 through 60 inch. Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: ASTM A36 Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

Center Sleeve Wall Thickness: 1/4 inch steel.

Center Sleeve Wall Thickness: 3/8 inch steel.

End Rings: ASIS 101/-1020 Cold rolled steel or Extruded Carbon Steel.

Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: 304 stainless steel per ASTM A193 and A194.

Fastening Hardware: 316 stainless steel per ASTM A193 and A194.

Fastening Hardware: Zinc plated with di-chromate seal (electro-galvanized).

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils

* + - 1. Steel Coupling: 14 through 60 inch.
				1. Style FC4: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: ASTM A36 Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

Center Sleeve Wall Thickness: 1/4 inch steel.

Center Sleeve Wall Thickness: 3/8 inch steel.

End Rings: ASIS 101/-1020 Cold rolled steel or Extruded Carbon Steel.

Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and A194.

Fastening Hardware: Zinc plated with di-chromate seal (electro-galvanized).

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* The typical use of an FC4 End Cap Coupling is to provide a temporary end or air relief for a pipeline. The end cap is welded to the center sleeve and can be manufactured with a 2 inch female iron pipe tap if specified. Tapped end cap couplings are supplied less plug but a plug is available upon request. If a smaller end cap coupling is required, refer to cast couplings listed in catalog section M.

End cap couplings require thrust restraint to prevent the coupling from blowing off the pipe end. Ford can manufacture the Style FC4 End Cap Coupling with anchor studs or with restrainer assemblies to meet this requirement. Delete if not required.

* + - 1. Steel Coupling with End Cap: 14 through 60 inch.
				1. Style FC4: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: ASTM A36 Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

Center Sleeve Wall Thickness: 1/4 inch steel.

Center Sleeve Wall Thickness: 3/8 inch steel.

End Rings: ASIS 101/-1020 Cold rolled steel or Extruded Carbon Steel.

Both Ends O.D.: \_\_\_\_ inch.

Temporary end or air relief.

\*\* NOTE TO SPECIFIER \*\* Delete end cap, coupling length, gasket material, fastening hardware, and finish options not required.

End Cap: Tapped.

End Cap: Blind.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Coupling Length: \_\_\_ inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and A194.

Fastening Hardware: Zinc plated with di-chromate seal (electro-galvanized).

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Transition Couplings connect plain end pipes with different OD's. Generally, the maximum differential between two pipes to be joined may not exceed 1 inch. For pipes with a measured differential of more than 1 inch, refer to Ford FC6 Steel Reducing Couplings product data. Delete if not required.

* + - 1. Steel Transition Coupling: 4 through 60 inch.
				1. Style FC23 and Style FC24. Nominal Sizes: 4 through 12 inches. Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: ASTM A46 Carbon Steel.

End Rings: ASTM A436 Ductile iron.

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Rated Working Pressure 4 to 12 inch O.D.: 200 psi.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized)

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

* + - * 1. Style FC5: size 14 through 60 inch. Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Maximum transition between pipes is 1 inch except as listed

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: ASTM A36 Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

Center Sleeve Wall Thickness: 1/4 inch steel.

Center Sleeve Wall Thickness: 3/8 inch steel.

End Rings: ASIS 101/-1020 Cold rolled steel or Extruded Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Ford Steel Reducing Couplings are designed to connect plain end pipes with an O.D. differential of more than 1 inch. When ordering, use tables in product data or use the exact O.D. measurements of the two plain end pipes to be joined. Delete if not required.

* + - 1. Steel Reducing Coupling 2 through 60 inch.
				1. Style FC6: Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Connects pipes with diameter variations in excess of 1 inch.

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: ASTM A36 Carbon Steel.

Rate Working Pressure: 150 psi with reduction of two nominal sizes or less.

\*\* NOTE TO SPECIFIER \*\* Delete end rings, coupling length, gasket material, fastening hardware, and finish options not required.

End Rings 4 to 12 inches: ASTM A536 Ductile iron.

End Rings 14 to 60 inches: AISI carbon steel 1018-1020 or ASTM A536 ductile iron.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Ford Steel Flange Coupling Adapters are used to connect plain end pipe to flanged fittings such as meters or valves. Thrust protection must be provided to prevent the pipe from blowing out of the adapter. Optional restrainers or anchor studs are offered as thrust protection. Fabricated steel flange coupling adapters are normally furnished with flange size matching the nominal pipe size; however, reduced flange sizes are available. For example, a 16 inch FCA may be ordered with a 12 inch flange. Delete if not required.

* + - 1. Steel Flange Coupling Adapter 4 through 60 inch.
				1. Style FCA: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure: 150 psi.

Standards: Both Ends O.D.: \_\_\_\_ inch.

Reducing: Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve per ASTM A36: Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Other AWWA, ISO, DIN or custom flanges are available. Contact the Manufacturer for more detail. Delete flange option not required.

Flange per AWWA C207 Class D. 150 lbs drilling. Flange Size: \_\_\_\_ inches.

Flange per AWWA C207 Class F. 250 lbs drilling. Flange Size: \_\_\_\_ inches.

\*\* NOTE TO SPECIFIER \*\* Delete end ring, gasket material, fastening hardware, and finish options not required.

End Rings per ASTM A536: Ductile iron per ASTM A536.

End Rings per ASTM A536: Carbon Steel per AISI 1018-1020.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required or delete harness and finish options not required.

Anchor Types: Studs: Cold Rolled Steel per AISI 1141. Required drilling of pipe.

Anchor Types: Harness: Restrainer lugs.

Anchor Types: Harness: Restrainer lugs welded to pipe.

\*\* NOTE TO SPECIFIER \*\* Ford equipment connection fittings are designed to easily connect or replace flanged fittings. The FECF allows as much as 3/4 inch offset or 4 degrees deflection between flange faces for ultimate connection ease and flexibility. Axial rods with spherical alignment washers provide pipe restraint between flange connections. In addition to offset or angular misalignment, the FECF has the same longitudinal adjustment found in dismantling joints. This results in the FECF being essential for flanged connections, especially in industrial and plant applications. Delete if not required.

* + - 1. Equipment Connection Fitting 3 through 48 inch.
				1. Style FECF: Manufactured by Ford Meter Box Co., Inc.

Standards: Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete rated working pressure, flanges, rods, fastening hardware, gasket material, and finish options not required.

Rated Working Pressure 3 to 6 inch: 275 psi. Safety Factor: 2:1.

Rated Working Pressure 8 to 12 inch: 175 psi. Safety Factor: 2:1.

Rated Working Pressure 14 to 24 inch: 150 psi. Safety Factor: 2:1.

Flanges: AWWA.

Flanges: ASME.

Flanges: ISO.

Rods: ASTM A193 B7 steel.

Rods: 304 (B8) stainless steel.

Rods: 304 (B8M) stainless steel.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Spherical washers on Flange Lugs: Keep rods straight and properly loaded.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Ford Dismantling Joints are flanged joint fittings that provide longitudinal adjustment in a flanged piping system. This allows for flexibility during design and installation as well as easy accessibility for maintenance. Delete if not required.

* + 1. Steel Dismantling Joints:
			1. Ford Dismantling Joint 4 through 60 inch. Unbalanced forces created by internal water pressure or external forces must be restrained.
				1. Style FDJ: Sizes: 2 to 60 inches. Manufactured by Ford Meter Box Co., Inc.

Rated Working Water Pressure: 150 psi.

Size: \_\_\_\_ inches.

\*\* NOTE TO SPECIFIER \*\* Delete style options not required.

Style: A.

Size 4 to 12 inches: Furnished with cross bolts and tee bolts.

Body and Adjusting Pipe: ASTM A536 65-45-12 Ductile Iron.

End Rings: ASTM A536 65-45-12 Ductile Iron.

Style: B.

Body and Adjusting Pipe: ASTM A36 Carbon Steel.

End Rings: Cold Rolled or Extruded Carbon Steel per AISI 1018-1020.

\*\* NOTE TO SPECIFIER \*\* Other flanges available. Contact the manufacturer for more information. Delete flanges option not required.

Flanges: ASTM A36 Carbon Steel.

Flanges: AWWA C207 Class D.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

\*\* NOTE TO SPECIFIER \*\* Tie Rods are optional. The Blue Fluorocarbon coating is optional. Delete tie rods if not required. Delete the coating if not required.

Tie Rods for Sizes 4 to 60 inches: ASTM A193, grade B7.

Finish: Blue Fluorocarbon coating.

\*\* NOTE TO SPECIFIER \*\* Delete the fastening hardware and finish options not required.

Fastening Hardware: High strength, low alloy steel per AWWA C111.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Ford Expansion Joint Couplings (FEJ) are specified for piping projects to allow for thermal expansion and contraction. The amount of movement is a factor of the pipe material, the pipeline length, the temperature differential, and structural movement.

The Single Expansion Joint Coupling (FEJ1) features 10 inches of overall pipe movement with limit rods that transfer pipe movement to any additional expansion joints. The slip pipe provides a non-abrasive surface to prevent damage to the packing glands. The friction of the packing glands on the slip pipe may be field adjusted using the packing adjusting nuts. Pipe movement may be controlled in both directions unless the Expansion Joint is anchored to a supporting structure. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete if not required.

The Double Expansion Joint Coupling (FEJ2) also features two slip pipes and adjustable packing glands. The Double Style Expansion Coupling should be permanently attached to a supporting structure in the middle of the sleeve to force equal pipe movement of 5 inches in both directions. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete paragraphs not required.

* + 1. Steel expansion Joint:
			1. Steel Expansion Joint 4 through 24 inch.
				1. Style FEJ: Pipe Sizes: 4 to 24 inches. Manufactured by Ford Meter Box Co., Inc.

Size: \_\_\_ inches.

Single Expansion Joint Coupling: FEJ1. 10 inches of overall pipe movement.

Double Expansion Joint Coupling: FEJ2.

Body: ASTM A36 Carbon Steel.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure, ends slip pipe, and overall length options not required.

Rated Working Pressure 4 through 16 inches: 150 psi.

Rated Working Pressure 18 inches: 125 psi.

Rated Working Pressure 20 inches: 110 psi.

Rated Working Pressure 24 inches: 100 psi.

Ends: Plain end beveled for field welding.

Ends: Flanged per AWWA C207 Class D - ANSI 150 lbs Drilling.

Slip Pipe: Clad / plated carbon steel meeting AWWA C221.

Slip Pipe: Stainless steel meeting AWWA C221.

Adjustable Packing: Buna-N rubber and jute, navy grade flax with tallow.

Expansion stop.

Limit Rods: AISI 4140 Min. yield 90,000 psi, 5/8 inch cold rolled carbon steel.

Limit ring.

Limit rod nuts.

Packing adjusting nuts.

Single End Style Overall Length: Contracted: 41 inches.

Single End Style Overall Length: Expanded: 51 inches.

Double End Style Overall Length: Contracted: 73 inches.

Double End Style Overall Length: Expanded: 83 inches.

\*\* NOTE TO SPECIFIER \*\* Ford Restrainers (FR Style) are designed to prevent pipe movement caused by expansion and contraction, pressure surges, water hammer, and unstable ground conditions. The FR1 Harness-style Restrainer Assembly is suitable for pipe that cannot be easily welded in the field. The clamping force provided by the harness is evenly distributed along the surface of the pipe to prevent damage. All harness assemblies are manufactured for an exact pipe O.D.

The harness to lug restrainer assembly, style FR2, requires field welding of the lugs to steel pipe. This is normally done after the harness assembly is installed, to ensure proper alignment for the tie rods. The FR3 lug-to-lug style restrainer assembly is used to restrain steel pipe to pipe or to fittings such as a flanged coupling adapter. Delete if not required.

* + - 1. Restrainer Assembly 4 through 60 inch.

\*\* NOTE TO SPECIFIER \*\* Delete style and pipe materials options not required.

* + - * 1. Style FR1: Harness Assembly. ASTM A36 Carbon Steel. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

Pipe Materials: C900PVC or C909 to C900 PVC or C909.

Pipe Materials: Ductile Iron to Ductile Iron.

Pipe Materials: Ductile Iron to C900 PVC or C909.

Pipe Materials: Ductile Iron to Steel.

* + - * 1. Style FR2: Harness-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Plastic to steel.

Pipe Materials: Iron to Steel.

* + - * 1. Style FR3: Lug-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure and pipe size options not required.

* + - * 1. Rated Working Pressure: 150 psi.

Pipe Size: 4. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 6. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 8. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 10. Tie Rod Quantity: 2. Rod Size: 3/4inch Diameter.

Pipe Size: 12. Tie Rod Quantity: 4. Rod Size: 58 inch Diameter.

Pipe Size: 14. Tie Rod Quantity: 4. Rod Size: 3/4 inch Diameter.

Pipe Size: 16. Tie Rod Quantity: 6. Rod Size: 3/4 inch Diameter.

* + - * 1. Rated Working Pressure: \_\_\_ psi.

Nominal Pipe Size: \_\_\_. Tie Rod Quantity: \_\_\_. Rod Size: \_\_\_ inch Diameter.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Steel M11 Restraining Harness:
			1. M11 Welded Restraining Harness: 3 through 96 inch. Restrains over couplings and fittings as required to provide pipeline restraint, in accordance with AWWA M11.
				1. Style M11, Weld-On restraint: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure to the class of pipe and required design pressures, in accordance with AWWA M11.

Lug Plates and Supports: Fabricated from ASTM A36 carbon steel. Refer to AWWA M-11 tables 7-3, 7-4, 7-5,7-6 for harness and lug dimensions.

\*\* NOTE TO SPECIFIER \*\* Delete tie-in bolts options not required.

Tie-In Bolts or Rods: Conform to ASTM A193 Grade B7 with ASTM A194, grade 2H nuts.

Tie-In Bolts or Rods: 304 stainless steel and conform to ASTM A193 and A194, and AWWA C111.

Tie-In Bolts or Rods: 316 stainless steel and Conform to ASTM A193 and A194, and AWWA C111.

Finish: Black shot coat.

* + 1. Options for Fabricated Steel Products:
			1. Gaskets: Pipe Size: 4 to 60 inches.

\*\* NOTE TO SPECIFIER \*\* The first option is standard. Delete options not required.

* + - * 1. Material: Molded or extruded styrene butadiene rubber (SBR) per ASTM D2000.

Maximum Recommended Operating Temperature: 150 degrees F.

* + - * 1. Material: Molded or extruded Buna-N per ASTM D2000.

Maximum Recommended Operating Temperature: 220 degrees F.

* + - * 1. Material: Molded or extruded EPDM per ASTM D2000.

Maximum Recommended Operating Temperature: 300 degrees F.

\*\* NOTE TO SPECIFIER \*\* For applications that require electrical isolation of main line piping from attached couplings, an insulating boot can be supplied with most Section N products. Delete options not required.

* + - 1. Ford Insulating Boot (FIB):
				1. The boot fits over the end of one or both of two plain end pipes to be joined and electrically insulates the pipes from each other and from the attached coupling.
				2. Insulating boots add 0.25 inches to the pipe outside diameter.
	1. CORINOX BRAND, 304 STAINLESS STEEL COUPLINGS, ADAPTERS AND SPECIALS FOR PROCESS PIPING

\*\* NOTE TO SPECIFIER \*\* The Ford CORINOX™ FC4X 304 Stainless Steel Coupling is an all stainless steel coupling designed to connect various types of plain end pipe with the same O.D. and is available for pipe sizes up to a maximum nominal diameter of 60 inches. Design and performance characteristics of fabricated steel couplings are specified in AWWA Standard C219. The CORINOX™ Style FC4X Coupling is available in a variety of center sleeve lengths. Delete if not required.

* + 1. Fabricated Stainless Steel Couplings:

\*\* NOTE TO SPECIFIER \*\* The CORINOX™ FC4X coupling is manufactured in standard steel sizes with a 304 stainless steel center sleeve and end rings. The CORINOX™FC4X, in its standard configuration, may be used for water as well as natural gas applications. Delete if not required.

* + - 1. CORINOX Style FC4X: Sizes 4 through 60 inch. Manufactured by Ford Meter Box Co., Inc.
				1. Center Sleeve: 304 stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

* + - * 1. End Rings: 304 stainless steel per ASTM A240.
				2. Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length and gasket material not required.

* + - * 1. Coupling Length: 5 inch.
				2. Coupling Length: 7 inch.
				3. Coupling Length: 10 inch.
				4. Coupling Length: 12 inch.
				5. Coupling Length: 15 inch.
				6. Coupling Length: 20 inch.
				7. Coupling Length: 24 inch.
				8. Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

* + - * 1. Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

* + - * 1. Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

* + - * 1. Fastening Hardware: Type 304 stainless steel per ASTM A193 and A194.
				2. Finish: Uncoated.
			1. 304 Stainless Steel Coupling: 4 through 60 inch.
				1. CORINOX Style FC4X: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: 304 Stainless steel per ASTM A240.

End Rings: 304 Stainless steel per ASTM A240.

Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* The typical use of a CORINOX™ FC4X End Cap Coupling is to provide a temporary end or air relief for a pipeline. The end cap is welded to the center sleeve and can be manufactured with a 2 inch female iron pipe tap if specified. Tapped end cap couplings are supplied less plug but a plug is available upon request. If a smaller end cap coupling is required, refer to cast couplings listed in catalog section M.

End cap couplings require thrust restraint to prevent the coupling from blowing off the pipe end. Ford can manufacture the CORINOX FC4X End Cap Coupling with anchor studs or with restrainer assemblies to meet this requirement. Delete if not required.

* + - 1. 304 Stainless Steel Coupling with End Cap: 14 through 60 inch.
				1. CORINOX Style FC4X: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: 304 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

End Rings: 304 Stainless steel per ASTM A240.

Both Ends O.D.: \_\_\_\_ inch.

Temporary end or air relief.

\*\* NOTE TO SPECIFIER \*\* Delete end cap, coupling length, gasket material, fastening hardware, and finish options not required.

End Cap: Tapped.

End Cap: Blind.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Coupling Length: \_\_\_ inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Transition Couplings connect plain end pipes with different OD's. Generally, the maximum differential between two pipes to be joined may not exceed 1 inch. For pipes with a measured differential of more than 1 inch, refer to Ford Steel Reducing Couplings product data. Delete if not required.

* + - 1. 304 Stainless Steel Transition Coupling: 4 through 60 inch.
				1. CORINOX Style FC23X and Style FC24X. Nominal Sizes: 4 through 12 inches. Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: 304 Stainless steel per ASTM A240.

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure, coupling length, gasket material, fastening hardware, and finish options not required.

Rated Working Pressure 4 to 12 inch O.D.: 200 psi.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

* + - * 1. CORINOX Style FC5X: size 4 through 60 inch. Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Maximum transition between pipes is 1 inch except as listed

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: 304 Stainless steel per ASTM A240.End Rings: 304 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length and gasket material options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Reducing Couplings (FC6X) are designed to connect plain end pipes with an O.D. differential of more than 1 inch. When ordering, use tables in product data or use the exact O.D. measurements of the two plain end pipes to be joined. Delete if not required.

* + - 1. 304 Stainless Steel Reducing Coupling 2 through 60 inch.
				1. CORINOX Style FC6X: Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Connects pipes with diameter variations in excess of 1 inch.

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: 304 Stainless steel per ASTM A240.

Rate Working Pressure: 150 psi with reduction of two nominal sizes or less.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length and gasket material options not required.

End Rings 4 to 60 inches 304 Stainless steel per ASTM A240.Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Flange Coupling Adapters are used to connect plain end pipe to flanged fittings such as meters or valves. Thrust protection must be provided to prevent the pipe from blowing out of the adapter. Optional restrainers or anchor studs are offered as thrust protection. Fabricated steel flange coupling adapters are normally furnished with flange size matching the nominal pipe size; however, reduced flange sizes are available. For example, a 16 inch FCAX may be ordered with a 12 inch flange. Delete if not required.

* + - 1. 304 Stainless Steel Flange Coupling Adapter 4 through 60 inch.
				1. CORINOX Style FCAX: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure: 150 psi.

Standards: Both Ends O.D.: \_\_\_\_ inch.

Reducing: Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve per ASTM A240: 304 Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Other AWWA, ISO, DIN or custom flanges are available. Contact the Manufacturer for more detail. Delete flange option not required.

Flange per AWWA C207 Class D. 150 lbs drilling. Flange Size: \_\_\_\_ inches.

Flange per AWWA C207 Class F. 250 lbs drilling. Flange Size: \_\_\_\_ inches.

End Rings 304 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete gasket material options not required.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and A194.

Finish: Uncoated

\*\* NOTE TO SPECIFIER \*\* Anchor type are optional. Delete if not required.

Anchor Types: Studs: 304 Stainless steel per ASTM A193. Required drilling of pipe.

Anchor Types: Harness. Restrainer lugs.

Anchor Types: Harness. Restrainer lugs welded to pipe.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Equipment Connection Fittings (FECFX) are designed to easily connect or replace flanged fittings. The FECFX allows as much as 3/4 inch offset or 4 degrees deflection between flange faces for ultimate connection ease and flexibility. Axial rods with spherical alignment washers provide pipe restraint between flange connections. In addition to offset or angular misalignment, the FECFX has the same longitudinal adjustment found in dismantling joints. This results in the FECFX being essential for flanged connections, especially in industrial and plant applications. Delete if not required.

* + - 1. Equipment Connection Fitting 3 through 48 inch.
				1. CORINOX Style FECFX: Manufactured by Ford Meter Box Co., Inc.

Standards: Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete, rated working pressure, rods, and gasket material options not required.

* + - * 1. Rated Working Pressure 3 to 6 inch: 275 psi. Safety Factor: 2:1.
				2. Rated Working Pressure 8 to 12 inch: 175 psi. Safety Factor: 2:1.
				3. Rated Working Pressure 14 to 24 inch: 150 psi. Safety Factor: 2:1.
				4. Flanges: AWWA.
				5. Rods: 304 (B8) stainless steel.
				6. Rods: 304 (B8M) stainless steel.
				7. Fastening Hardware: Type 304 stainless steel per ASTM A193 and A194.
				8. Spherical washers on Flange Lugs: Keep rods straight and properly loaded.
				9. Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

* + - * 1. Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

* + - * 1. Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

* + - * 1. Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Dismantling Joints (FDJX) are flanged joint fittings that provide longitudinal adjustment in a flanged piping system. This allows for flexibility during design and installation as well as easy accessibility for maintenance. Delete if not required.

* + 1. 304 Stainless Steel Dismantling Joints:
			1. Ford CORINOX Dismantling Joint 4 through 60 inch. Unbalanced forces created by internal water pressure or external forces must be restrained.
				1. CORINOX Style FDJX: Sizes: 2 to 60 inches. Manufactured by Ford Meter Box Co., Inc.

Rated Working Water Pressure: 150 psi.

Size: \_\_\_\_ inches.

Style: B.

Body and Adjusting Pipe: 304 Stainless steel per ASTM A240.

End Rings: 304 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Other flanges available. Contact the manufacturer for more information. Delete flanges option not required.

Flanges: 304 Stainless steel per ASTM A240.

Flanges: AWWA C207 Class D

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F

\*\* NOTE TO SPECIFIER \*\* Tie Rods are optional. Delete tie rods if not required.

Tie Rods for Sizes 4 to 60 inches: 304 Stainless steel per ASTM A193 and A194.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Expansion Joint Couplings (FEJX) are specified for piping projects to allow for thermal expansion and contraction. The amount of movement is a factor of the pipe material, the pipeline length, the temperature differential, and structural movement.

The CORINOX Single Expansion Joint Coupling (FEJ1X) features 10 inches of overall pipe movement with limit rods that transfer pipe movement to any additional expansion joints. The slip pipe provides a non-abrasive surface to prevent damage to the packing glands. The friction of the packing glands on the slip pipe may be field adjusted using the packing adjusting nuts. Pipe movement may be controlled in both directions unless the Expansion Joint is anchored to a supporting structure. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete if not required.

TheCORINOX Double Expansion Joint Coupling (FEJ2X) also features two slip pipes and adjustable packing glands. The FEJ2X should be permanently attached to a supporting structure in the middle of the sleeve to force equal pipe movement of 5 inches in both directions. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete paragraphs not required.

* + 1. Expansion Joints:
			1. 304 Stainless Steel Expansion Joints 4 through 24 inch.
				1. CORINOX Style FEJX: Pipe Sizes: 4 to 24 inches. Manufactured by Ford Meter Box Co., Inc.

Size: \_\_\_ inches/

Single Expansion Joint Coupling: FEJX1. 10 inches of overall pipe movement/

Double Expansion Joint Coupling: FEJX2/

Body: 304 Stainless steel per ASTM A240.\*\* NOTE TO SPECIFIER \*\* Delete working pressure, ends, and overall length options not required.
\*\* NOTE TO SPECIFIER \*\* Delete working pressure, ends, and overall length options not required.

Rated Working Pressure 4 through 16 inches: 150 psi.

Rated Working Pressure 18 inches: 125 psi.

Rated Working Pressure 20 inches: 110 psi.

Rated Working Pressure 24 inches: 100 psi.

Ends: Plain end beveled for field welding.

Ends: Flanged per AWWA C207 Class D - ANSI 150 lbs Drilling.

Slip Pipe: Stainless steel meeting AWWA C221.

Adjustable Packing: Buna-N rubber and jute, navy grade flax with tallow.

Expansion stop.

Limit Rods: AISI 4140 Min. yield 90,000 psi, 5/8 inch cold rolled carbon steel.

Limit ring.

Limit rod nuts.

Packing adjusting nuts.

Single End Style Overall Length: Contracted: 41 inches.

Single End Style Overall Length: Expanded: 51 inches.

Double End Style Overall Length: Contracted: 73 inches.

Double End Style Overall Length: Expanded: 83 inches.

\*\* NOTE TO SPECIFIER \*\* Ford CORINOX™ Restrainers (FRX Style) are designed to prevent pipe movement caused by expansion and contraction, pressure surges, water hammer, and unstable ground conditions. The FR1 Harness-style Restrainer Assembly is suitable for pipe that cannot be easily welded in the field. The clamping force provided by the harness is evenly distributed along the surface of the pipe to prevent damage. All harness assemblies are manufactured for an exact pipe O.D.

The harness to lug restrainer assembly, style FR2X, requires field welding of the lugs to steel pipe. This is normally done after the harness assembly is installed, to ensure proper alignment for the tie rods. The FR3 lug-to-lug style restrainer assembly is used to restrain steel pipe to pipe or to fittings such as a flanged coupling adapter. Delete if not required.

* + - 1. Restrainer Assembly 4 through 60 inch.

\*\* NOTE TO SPECIFIER \*\* Delete style and pipe materials options not required.

* + - * 1. CORINOX Style FR1X: Harness Assembly. 304 Stainless steel per ASTM A240. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

Pipe Materials: Plastic to Plastic.

Pipe Materials: Iron to Iron.

Pipe Materials: Iron to Plastic.

Pipe Materials: Iron to Streel.

* + - * 1. CORINOX Style FR2X: Harness-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Plastic to steel.

Pipe Materials: Iron to Steel.

* + - * 1. CORINOX Style FR3X: Lug-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure and pipe size options not required.

* + - * 1. Rated Working Pressure: 150 psi.

Pipe Size: 4. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 6. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 8. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 10. Tie Rod Quantity: 2. Rod Size: 3/4inch Diameter.

Pipe Size: 12. Tie Rod Quantity: 4. Rod Size: 58 inch Diameter.

Pipe Size: 14. Tie Rod Quantity: 4. Rod Size: 3/4 inch Diameter.

Pipe Size: 16. Tie Rod Quantity: 6. Rod Size: 3/4 inch Diameter.

* + - * 1. Rated Working Pressure: \_\_\_ psi.

Nominal Pipe Size: \_\_\_. Tie Rod Quantity: \_\_\_. Rod Size: \_\_\_ inch Diameter.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Stainless Steel M11X Restraining Harness
			1. CORINOX M11X Welded Restraining Harness 3 through 96 inch. Restrains over couplings and fittings as required to provide pipeline restraint, in accordance with AWWA M11.
				1. CORINOX Style M11X, weld-on restraint: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure to the class of pipe and required design pressures, in accordance with AWWA M11.

Lug Plates and Supports: fabricated from 304 Stainless steel per ASTM A240. Refer to AWWA M-11 tables 7-3, 7-4, 7-5,7-6 for harness and lug dimensions.

Tie-In Bolts and Rods: 304 stainless steel and conform to ASTM 193 and A194, and AWWA C111

Finish: Uncoated

\*\* NOTE TO SPECIFIER \*\* Delete if not required. Use the drawings from the Manufacturer's catalogue as a reference when requesting a quotation.

* + 1. Options for Fabricated Stainless Steel Products:
			1. Gaskets: Pipe Size: 4 to 60 inches.

\*\* NOTE TO SPECIFIER \*\* The first option is standard. Delete options not required.

* + - * 1. Material: Molded or extruded styrene butadiene rubber (SBR) per ASTM D2000.

Maximum Recommended Operating Temperature: 150 degrees F.

* + - * 1. Material: Molded or extruded Buna-N per ASTM D2000.

Maximum Recommended Operating Temperature: 220 degrees F.

* + - * 1. Material: Molded or extruded EPDM per ASTM D2000.

Maximum Recommended Operating Temperature: 300 degrees F.

\*\* NOTE TO SPECIFIER \*\* For applications that require electrical isolation of main line piping from attached couplings, an insulating boot can be supplied with most Section N products. Delete options not required.

* + - 1. Ford Insulating Boot (FIB):
				1. The boot fits over the end of one or both of two plain end pipes to be joined and electrically insulates the pipes from each other and from the attached coupling.
				2. Insulating boots add 0.25 inches to the pipe outside diameter.
	1. ULTRINOX BRAND, 316 STAINLESS STEEL COUPLINGS, ADAPTERS AND SPECIALS FOR PROCESS PIPING
		1. Fabricated Stainless Steel Couplings:

\*\* NOTE TO SPECIFIER \*\* The ULTRINOX™ FC4X coupling is manufactured in standard steel sizes with a 316 stainless steel center sleeve and end rings. The ULTRINOX™ FC3X, in its standard configuration, may be used for water as well as natural gas applications. Delete if not required.

* + - 1. ULTRINOX Style FC4Q: Sizes 4 through 60 inch. Manufactured by Ford Meter Box Co., Inc.
				1. Center Sleeve: 316 stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

* + - * 1. End Rings: 316 stainless steel per ASTM A240.
				2. Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

* + - * 1. Coupling Length: 5 inch.
				2. Coupling Length: 7 inch.
				3. Coupling Length: 10 inch.
				4. Coupling Length: 12 inch.
				5. Coupling Length: 15 inch.
				6. Coupling Length: 20 inch.
				7. Coupling Length: 24 inch.
				8. Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

* + - * 1. Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

* + - * 1. Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

* + - * 1. Fastening Hardware: Type 316 stainless steel per ASTM A193 and A194.
				2. Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* The Ford ULTRINOX™ FC4Q 316 Stainless Steel Coupling is an all stainless steel coupling designed to connect various types of plain end pipe with the same O.D. and is available for pipe sizes up to a maximum nominal diameter of 60 inches. Design and performance characteristics of fabricated steel couplings are specified in AWWA Standard C219. The ULTRINOX™Style FC4Q Coupling is available in a variety of center sleeve lengths. Delete if not required.

* + - 1. 316 Stainless Steel Coupling: 4 through 60 inch.
				1. ULTRINOX Style FC4Q: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

End Rings: 316 Stainless steel per ASTM A240.

Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 304 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* The typical use of a ULTRINOX™ FCQ End Cap Coupling is to provide a temporary end or air relief for a pipeline. The end cap is welded to the center sleeve and can be manufactured with a 2 inch female iron pipe tap if specified. Tapped end cap couplings are supplied less plug but a plug is available upon request. If a smaller end cap coupling is required, refer to cast couplings listed in catalog section M.

End cap couplings require thrust restraint to prevent the coupling from blowing off the pipe end. Ford can manufacture the ULTRINOX style FCQ End Cap Coupling with anchor studs or with restrainer assemblies to meet this requirement. Delete if not required.

* + - 1. 316 Stainless Steel Coupling with End Cap: 14 through 60 inch.
				1. ULTRINOX Style FC4Q: Manufactured by Ford Meter Box Co., Inc.

Center Sleeve: 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete wall thickness option not required.

End Rings: 316 Stainless steel per ASTM A240.

Both Ends O.D.: \_\_\_\_ inch.

Temporary end or air relief.

\*\* NOTE TO SPECIFIER \*\* Delete end cap, coupling length, gasket material, fastening hardware, and finish options not required.

End Cap: Tapped.

End Cap: Blind.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Coupling Length: \_\_\_ inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Corrosion resistant high strength low alloy steel per AWWA C111 and ASTM A242.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Fastening Hardware: Zinc plated with di-chromate seal; electro-galvanized.

Fastening Hardware: Blue Fluorocarbon coating.

Finish: Black shop coat.

Finish: Fusion bonded epoxy coating. Min. Thickness: 10 to 12 mils.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™Transition Couplings FCconnect plain end pipes with different OD's. Generally, the maximum differential between two pipes to be joined may not exceed 1 inch except as listed. For pipes with a measured differential of more than 1 inch, refer to Ford FC6Q Reducing Couplings on page 20. Delete if not required.

* + - 1. 316 Stainless Steel Transition Coupling: 4 through 60 inch.
				1. ULTRINOX Style FC5Q: size 4 through 60 inch. Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Maximum transition between pipes is 1 inch except as listed

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: 316 Stainless steel per ASTM A240.End Rings: 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete coupling length, gasket material, fastening hardware, and finish options not required.

Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™Steel Reducing Couplings, series FC6Q, are designed to connect plain end pipes with an O.D. differential of more than 1 inch. When ordering, use the table shown on the next page or use the exact O.D. measurements of the two plain end pipes to be joined. Delete if not required.

* + - 1. 316 Stainless Steel Reducing Coupling 2 through 60 inch.
				1. ULTRINOX Style FC6Q: Manufactured by Ford Meter Box Co., Inc.

\*\* NOTE TO SPECIFIER \*\* Connects pipes with diameter variations in excess of 1 inch.

Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve: 316 Stainless steel per ASTM A240.

Rate Working Pressure: 150 psi with reduction of two nominal sizes or less.

\*\* NOTE TO SPECIFIER \*\* Delete end rings, coupling length, gasket material, fastening hardware, and finish options not required.

End Rings 4 to 60 inches 316 Stainless steel per ASTM A240.Coupling Length: 5 inch.

Coupling Length: 7 inch.

Coupling Length: 10 inch.

Coupling Length: 12 inch.

Coupling Length: 15 inch.

Coupling Length: 20 inch.

Coupling Length: 24 inch.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™Steel Flange Coupling Adapters, FCAQ series, are used to connect plain end pipe to flanged fittings such as meters or valves. Thrust protection must be provided to prevent the pipe from blowing out of the adapter. Optional restrainers or anchor studs are offered as thrust protection. Fabricated steel flange coupling adapters are normally furnished with flange size matching the nominal pipe size; however, reduced flange sizes are available. For example, a 16 inch FCAQ may be ordered with a 12 inch flange. Delete if not required.

* + - 1. 316 Stainless Steel Flange Coupling Adapter 4 through 60 inch.
				1. ULTRINOX Style FCAQ: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure: 150 psi.

Standards: Both Ends O.D.: \_\_\_\_ inch.

Reducing: Small End O.D.: \_\_\_ inch. Large End O.D.: \_\_\_ inch.

Center Sleeve 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Other AWWA, ISO, DIN or custom flanges are available. Contact the Manufacturer for more detail. Delete flange option not required.

Flange per AWWA C207 Class D. 150 lbs drilling. Flange Size: \_\_\_\_ inches.

Flange per AWWA C207 Class F. 250 lbs drilling. Flange Size: \_\_\_\_ inches.

End Rings 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete gasket material options not required.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and ASTM A194.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

Anchor Types: Studs: 316 Stainless steel per ASTM A193. Required drilling of pipe.

Anchor Types: Harness. Restrainer lugs.

Anchor Types: Harness. Restrainer lugs welded to pipe.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™ Equipment Connection Fittings, FECFQ are designed to easily connect or replace flanged fittings. The FECFQ allows as much as 3/4 inch offset or 4 degrees deflection between flange faces for ultimate connection ease and flexibility. Axial rods with spherical alignment washers provide pipe restraint between flange connections. In addition to offset or angular misalignment, the FECFQ has the same longitudinal adjustment found in dismantling joints. This results in the FECFQ being essential for flanged connections, especially in industrial and plant applications. Delete if not required.

* + - 1. Equipment Connection Fitting 3 through 48 inch.
				1. ULTRINOX Style FECFQ: Manufactured by Ford Meter Box Co., Inc.

Standards: Both Ends O.D.: \_\_\_\_ inch.

\*\* NOTE TO SPECIFIER \*\* Delete, working pressure, flanges, rods, fastening hardware, and gasket material options not required.

Rated Working Pressure 3 to 6 inch: 275 psi. Safety Factor: 2:1.

Rated Working Pressure 8 to 12 inch: 175 psi. Safety Factor: 2:1.

Rated Working Pressure 14 to 24 inch: 150 psi. Safety Factor: 2:1.

Flanges: AWWA.

Rods: 316 (B8) stainless steel.

Rods: 316 (B8M) stainless steel.

Fastening Hardware: Type 316 stainless steel per ASTM A193 and A194.

Spherical washers on Flange Lugs: Keep rods straight and properly loaded.

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F.

Gasket Material: Buna-N Rubber per ASTM D2000.

Maximum Operating Temperature: 220 degrees F.

Gasket Material: EPDM Rubber per ASTM D2000.

Maximum Operating Temperature: 300 degrees F.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Ford Dismantling Joints are flanged joint fittings that provide longitudinal adjustment in a flanged piping system. This allows for flexibility during design and installation as well as easy accessibility for maintenance. Delete if not required.

* + 1. 316 Stainless Steel Dismantling Joint:
			1. Ford ULTRINOX Dismantling Joint 4 through 60 inch. Unbalanced forces created by internal water pressure or external forces must be restrained.
				1. ULTRINOX Style FDJQ: Sizes: 2 to 60 inches. Manufactured by Ford Meter Box Co., Inc.

Rated Working Water Pressure: 150 psi.

Size: \_\_\_\_ inches.

Style: B.

Body and Adjusting Pipe: 316 Stainless steel per ASTM A240.

End Rings: 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Other flanges available. Contact the manufacturer for more information. Delete flanges option not required.

Flanges: 316 Stainless steel per ASTM A240.

Flanges: AWWA C207 Class D

Gasket Material: SBR Rubber per ASTM D2000.

Maximum Operating Temperature: 150 degrees F

\*\* NOTE TO SPECIFIER \*\* Tie Rods are optional. Delete if not required.

Tie Rods for Sizes 4 to 60 inches: 316 Stainless steel per ASTM A193 and A194.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™ Expansion Joint Couplings (FEJQ) are specified for piping projects to allow for thermal expansion and contraction. The amount of movement is a factor of the pipe material, the pipeline length, the temperature differential, and structural movement.

The ULTRINOX Single Expansion Joint Coupling (FEJ1Q) features 10 inch of overall pipe movement with limit rods that transfer pipe movement to any additional expansion joints. The slip pipe provides a non-abrasive surface to prevent damage to the packing glands. The friction of the packing glands on the slip pipe may be field adjusted using the packing adjusting nuts. Pipe movement may be controlled in both directions unless the Expansion Joint is anchored to a supporting structure. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete if not required.

TheULTRINOX Double Expansion Joint Coupling (FEJ2Q) also features two slip pipes and adjustable packing glands. The Double Style Expansion Coupling should be permanently attached to a supporting structure in the middle of the sleeve to force equal pipe movement of 5 inches in both directions. The expansion joint is available with either flanged ends or plain ends, beveled for field welding. Delete paragraphs not required.

* + 1. Expansion Joints:
			1. 316 Stainless Steel Expansion Joints 4 through 24 inch.
				1. ULTRINOX Style FEJQ: Pipe Sizes: 4 to 24 inches. Manufactured by Ford Meter Box Co., Inc.

Size: \_\_\_ inches/

Single Expansion Joint Coupling: FEJ1Q. 10 inches of overall pipe movement/

Double Expansion Joint Coupling: FEJ2Q

Body: 316 Stainless steel per ASTM A240.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure, ends, and end style overall length options not required.

Rated Working Pressure 4 through 16 inches: 150 psi.

Rated Working Pressure 18 inches: 125 psi.

Rated Working Pressure 20 inches: 110 psi.

Rated Working Pressure 24 inches: 100 psi.

Ends: Plain end beveled for field welding.

Ends: Flanged per AWWA C207 Class D - ANSI 150 lbs Drilling.

Slip Pipe: Stainless steel meeting AWWA C221.

Adjustable Packing: Buna-N rubber and jute, navy grade flax with tallow.

Expansion stop.

Limit Rods: AISI 4140 Min. yield 90,000 psi, 5/8 inch cold rolled carbon steel.

Limit ring.

Limit rod nuts.

Packing adjusting nuts.

Single End Style Overall Length: Contracted: 41 inches.

Single End Style Overall Length: Expanded: 51 inches.

Double End Style Overall Length: Contracted: 73 inches.

Double End Style Overall Length: Expanded: 83 inches.

\*\* NOTE TO SPECIFIER \*\* Ford ULTRINOX™ Restrainers (FRQ Style) are designed to prevent pipe movement caused by expansion and contraction, pressure surges, water hammer, and unstable ground conditions. The FR1Q Harness-style Restrainer Assembly is suitable for pipe that cannot be easily welded in the field. The clamping force provided by the harness is evenly distributed along the surface of the pipe to prevent damage. All harness assemblies are manufactured for an exact pipe O.D.

The harness to lug restrainer assembly, style FR2Q, requires field welding of the lugs to steel pipe. This is normally done after the harness assembly is installed, to ensure proper alignment for the tie rods. The FR3Q lug-to-lug style restrainer assembly is used to restrain steel pipe to pipe or to fittings such as a flanged coupling adapter. Delete if not required.

* + - 1. Restrainer Assembly 4 through 16 inch.

\*\* NOTE TO SPECIFIER \*\* Delete style and pipe materials options not required.

* + - * 1. ULTRINOX Style FR1Q: Harness Assembly. 316 Stainless steel per ASTM A240. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

Pipe Materials: Plastic to Plastic.

Pipe Materials: Iron to Iron.

Pipe Materials: Iron to Plastic.

Pipe Materials: Iron to Streel.

* + - * 1. ULTRINOX Style FR2Q: Harness-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Plastic to steel.

Pipe Materials: Iron to Steel.

* + - * 1. ULTRINOX Style FR3Q Lug-To-Lug Assembly. Lugs are field welded to steel pipe. Manufactured by Ford Meter Box Co., Inc.

Pipe Materials: Steel to Steel.

\*\* NOTE TO SPECIFIER \*\* Delete working pressure and pipe size options not required.

* + - * 1. Rated Working Pressure: 150 psi.

Pipe Size: 4. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 6. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 8. Tie Rod Quantity: 2. Rod Size: 5/8 inch Diameter.

Pipe Size: 10. Tie Rod Quantity: 2. Rod Size: 3/4inch Diameter.

Pipe Size: 12. Tie Rod Quantity: 4. Rod Size: 58 inch Diameter.

Pipe Size: 14. Tie Rod Quantity: 4. Rod Size: 3/4 inch Diameter.

Pipe Size: 16. Tie Rod Quantity: 6. Rod Size: 3/4 inch Diameter.

* + - * 1. Rated Working Pressure: \_\_\_ psi.

Nominal Pipe Size: \_\_\_. Tie Rod Quantity: \_\_\_. Rod Size: \_\_\_ inch Diameter.

* + 1. 316 Stainless Steel M11Q Restraining Harness
			1. ULTRINOX M11Q Welded Restraining Harness 3 through 96 inch Restraints over couplings and fittings as required to provide pipeline restraint, in accordance with AWWA M11
				1. ULTRINOX Style M11Q, weld-on restraint: Manufactured by Ford Meter Box Co., Inc.

Rated Working Pressure to the class of pipe and required design pressures, in accordance with AWWA M11. .

Lug Plates and Supports: fabricated from 316 Stainless steel per ASTM A240. Refer to AWWA M-11 tables 7-3, 7-4, 7-5,7-6 for harness and lug dimensions.

Tie-In Bolts and Rods: 316 stainless steel and conform to ASTM 193 and A194, and AWWA C111.

Finish: Uncoated.

\*\* NOTE TO SPECIFIER \*\* Delete if not required. Use the drawings from the Manufacturer's catalogue as a reference when requesting a quotation.

* + 1. Options for Fabricated Stainless Steel Products:
			1. Gaskets: Pipe Size: 4 to 60 inches.

\*\* NOTE TO SPECIFIER \*\* The first option is standard. Delete options not required.

* + - * 1. Material: Molded or extruded styrene butadiene rubber (SBR) per ASTM D2000.

Maximum Recommended Operating Temperature: 150 degrees F.

* + - * 1. Material: Molded or extruded Buna-N per ASTM D2000.

Maximum Recommended Operating Temperature: 220 degrees F.

* + - * 1. Material: Molded or extruded EPDM per ASTM D2000.

Maximum Recommended Operating Temperature: 300 degrees F.

\*\* NOTE TO SPECIFIER \*\* For applications that require electrical isolation of main line piping from attached couplings, an insulating boot can be supplied with most Section N products. Delete options not required.

* + - 1. Ford Insulating Boot (FIB):
				1. The boot fits over the end of one or both of two plain end pipes to be joined and electrically insulates the pipes from each other and from the attached coupling.
				2. Insulating boots add 0.25 inches to the pipe outside diameter.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until the substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturers recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION