



## D. I. Spooling Field Installation Guide

*Fabricators, LLC*

- A. Inspect all spooling when received at jobsite to insure no freight damage has occurred to lining, coating, or ends.

Lift spooling by supporting with pallet or sling. Lifting spools by the flanged end will break the thread seal. Dropping spools may also break the thread seal. Inserting forks into the spool will damage the lining. Damaged lining may be repaired. Contact your supplier for instructions and repair kits.

Glass lined spools with a large amount of damage may be beyond repair. Send pictures to your supplier for evaluation.

Prior to installation check face of flange to insure it is in factory new condition and free of dirt. Remove rust preventative coating from the flange face with solvent.

- B. Gaskets: Unless otherwise specified by the purchaser, gaskets shall be synthetic rubber, either ring or full face, and 1/8 in (3.18mm) thick. Gaskets should conform to the dimensions shown in Table A.1./ AWWA C115. (see attachment "A") When considering the use of gaskets thinner than 1/8 in (3.18mm) and / or gaskets of materials other than synthetic rubber, the purchaser should contact the pipe manufacturer or fabricator concerning such gaskets' suitability for a particular application.

Available for most sizes are specially designed gaskets, either ring or full faced employing one or more annular rings molded into the gasket to improve joint performance. By the use of these or other special gaskets it may be possible to obtain a pressure rating greater than 250 psi (1,720 kPa). Contact the pipe manufacturer or fabricator for details.

- C. Bolts: Size, length, and number of bolts are shown in Tables 2 and 3 of ANSI/AWWA C115/A21.15. Bolts conform to ANSI/ASME B18.2.1, Square and Hex Bolts and Screws Inch Series including Hex Cap Screws and Lag. Screws. Nuts conform to ANSI/ASME B18.2.2, square and hex nuts (inch series). Bolts and nuts used with gray-iron flanges should have standard square or heavy hex bolts and heavy hex nuts. Bolts and nuts are threaded in accordance with ASME/ANSI B1.1, Unified Inch screw threads (UN and UNR thread form),

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class 2A, external and class 2B, internal. Bolts and nuts of low-carbon steel conforming to the chemical and mechanical requirements of ASTM A307, standard specification for carbon steel bolts and studs, 60,000 psi Tensile Strength are suitable for use with the flanges described in ANSI/AWWA C115/A21.15 when used with the rubber gaskets described. Higher-strength (Grade A) bolts and higher torque values should not be used with gray-iron flanges.

- D. **Installation:** The Purchaser is responsible for the design, assembly and installation of flanged piping system. The following suggestions are for general guidance:

The use of flanged joints underground is generally not recommended because of the rigidity of the joint.

Due to the limited availability and long lead times associated with MJ Bell pipe, MJ threaded adapt-a-bells can be offered as an alternative. However, much like threaded flanges, these threaded-on adapt-a-bells are not recommended for underground service. We would HIGHLY recommend the use of restrained joint pipe, or push-on pipe with field locking gaskets as an alternative for underground applications.

Flanged faces should bear uniformly on the gasket, and the bolts should be tightened in a progressively crisscrossed pattern. (see attachment "B"). This process should be repeated until all bolts are adequately tightened.

The use of a torque wrench is recommended.

### Horizontal Lines

For larger diameters, it may be necessary to glue the gasket to the face of one of the flanges prior to aligning the flanges. For smaller diameter joints the gasket can be dropped into the joint as it is being assembled. Align the flanges and insert several bolts in the lower half of the flanges. Drop the Ring Gasket between the two flanges so that gasket rests on the lower bolts. Insert the remaining bolts and follow the tightening procedure below

### Vertical Lines

Center the gasket on the lower flanged before assembling the joint. The gasket can also be glued to the face of the flange to keep the gasket from dislodging during the assembly.

### Bolt Tightening

After alignment has been completed, insert the bolts and hand tighten the nuts. Continue tightening in the pattern in attachment "B".

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Table A.1 Flange gasket details

Nominal Pipe Size <i>in.</i>	Ring			Full Face			Number of Holes
	ID <i>in.</i>	OD <i>in.</i>	ID <i>in.</i>	OD <i>in.</i>	BC <i>in.</i>	Bolt Hold Diameter <i>in.</i>	
3	3	5 <sup>3</sup> / <sub>8</sub>	3	7 <sup>1</sup> / <sub>2</sub>	6	3/4	4
4	4	6 <sup>7</sup> / <sub>8</sub>	4	9	7 <sup>1</sup> / <sub>2</sub>	3/4	8
6	6	8 <sup>3</sup> / <sub>4</sub>	6	11	9 <sup>1</sup> / <sub>2</sub>	7/8	8
8	8	11	8	13 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	7/8	8
10	10	13 <sup>3</sup> / <sub>8</sub>	10	16	14 <sup>1</sup> / <sub>4</sub>	1	12
12	12	16 <sup>1</sup> / <sub>8</sub>	12	19	17	1	12
14	14	17 <sup>3</sup> / <sub>4</sub>	14	21	18 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	12
16	16	20 <sup>1</sup> / <sub>4</sub>	16	23 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	16
18	18	21 <sup>5</sup> / <sub>8</sub>	18	25	22 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	16
20	20	23 <sup>7</sup> / <sub>8</sub>	20	27 <sup>1</sup> / <sub>2</sub>	25	1 <sup>1</sup> / <sub>4</sub>	20
24	24	28 <sup>1</sup> / <sub>4</sub>	24	32	29 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	20
30	30	34 <sup>3</sup> / <sub>4</sub>	30	38 <sup>3</sup> / <sub>4</sub>	36	1 <sup>3</sup> / <sub>8</sub>	28
36	36	41 <sup>1</sup> / <sub>4</sub>	36	46	42 <sup>3</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	32
42	42	48	42	53	49 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>8</sub>	36
48	48	54 <sup>1</sup> / <sub>2</sub>	48	59 <sup>1</sup> / <sub>2</sub>	56	1 <sup>5</sup> / <sub>8</sub>	44
54	54	61	54	66 <sup>1</sup> / <sub>4</sub>	62 <sup>3</sup> / <sub>4</sub>	2	44
60	60	67 <sup>1</sup> / <sub>2</sub>	60	73	69 <sup>1</sup> / <sub>4</sub>	2	52
64	64	74 <sup>1</sup> / <sub>4</sub>	64	80	76	2	52

Metric conversion: Dimensions: in. × 25.4 = mm.



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**Suggested Nut Torque Values**

(Ft. Lbs.)

Standard Ductile Iron 150# Flange, Grade 2 Nut & Bolt with Flat Washer, Dry Assembly

Pipe Size	Bolt Diameter	<u>Flange-Tyte</u> Minimum (Per U. S. Pipe)	<u>Toruseal</u> Minimum (Per ACIPCO)	Full Face (RR or Neo.) Minimum (Per IFI 100/107-1987)
3"	5/8"	N/A	N/A	100
4"	5/8"	90	100	100
6"	3/4"	90	150	175
8"	3/4"	90	150	175
10"	7/8"	90	200	200
12"	7/8"	90	200	200
14"	1"	110	250	250
16"	1"	110	250	250
18"	1-1/8"	120	300	350
20"	1-1/8"	120	300	350
24"	1-1/4"	130	400	500
30"	1-1/4"	140	400	500
36"	1-1/2"	160	500	870
42"	1-1/2"	585	500	870
48"	1-1/2"	625	500	870
54"	1-3/4"	550*	600	Not Avail
60"	1-3/4"	600*	600	Not Avail
64"	1-3/4"	600*	600	Not Avail

\*(150 PSI Working Pressure)

It is recommended that torque be applied in increments of one-fifth (1/5) of the total torque required.

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