

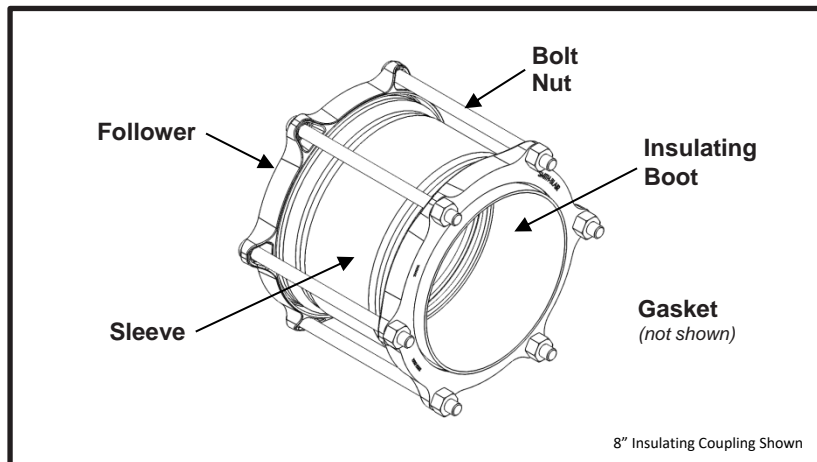


Smith-Blair
a xylem brand

SPECIFICATION

STEEL INSULATING COUPLING

MODEL 416



APPLICATIONS

- **Typical Uses**
 - Joining and insulating plain-end pipe of same outside diameters
 - Replace split or excessively damaged pipe
- **Standard Pipe Sizes**
 - 2" to 24" nominal
- **Type of Pipe**
 - Carbon Steel, Stainless Steel, Cast Iron
- **Working Pressure**
 - 150 psi (standard design)

MATERIALS

- **Followers** (*see catalog for specific follower design*)
 - **Cast Follower**
 - Cast using Ductile Iron 65-45-12 per ASTM A536
 - Flexi-Coat® fusion bonded epoxy finish
 - Permanently marked with part number and pipe size range for proper selection
 - **Steel Follower**
 - Carbon Steel C1020 per ASTM A576
 - Flexi-Coat® fusion bonded epoxy finish
 - Integral bolt head pocket for one wrench installation
- **Sleeve**
 - Material: 2" – 5" nominal pipe size = Carbon Steel per ASTM A513 or A53
6" – 60" nominal pipe size = Carbon Steel per ASTM A283C
 - Flexi-Coat® fusion bonded epoxy finish
- **Gasket**
 - Nitrile (Buna-N) per ASTM D2000
 - Temperature range: -20°F to +180°F
 - Permanently marked with part number and pipe size range for proper selection
- **Insulating Boot**
 - Nitrile (Buna-N) per ASTM D2000
 - Temperature range: -20°F to +180°F



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- **Bolts**
 - HSLA Steel per AWWA C111/A21.11
 - Size: 2.50" nominal size(s) = 1/2"-13UNC, Oval Neck Track Head
2" and 3" – 24" nominal size(s) = 5/8"-11UNC, Oval Neck Track Head
 - Rolled threads
- **Nut**
 - HSLA Steel per AWWA C111/A21.11
 - Size: 2.50" nominal size(s) = 1/2"-13UNC, Heavy Hex Semi-Finished
2" and 3" – 24" nominal size(s) = 5/8"-11UNC, Heavy Hex Semi-Finished

LISTINGS

- Certified to NSF/ANSI 61 and NSF/ANSI 372
- Meets applicable portions of AWWA C219
- Flexi-Coat® Fusion-Bonded Epoxy Coating meets requirements of AWWA C213

OPTIONS

- Other materials of construction (e.g. 304SS, 316SS, etc.)
- Type 304 Stainless Steel hardware with fluoropolymer coated nuts to prevent galling
- Type 316 Stainless Steel hardware with fluoropolymer coated nuts to prevent galling
- Alternative gasket material (e.g. Viton, EPDM, etc.)
- Protected gasket (brass spring molded into leading edge)
- Anode connector
- Anchor studs
- Pipe stops incorporated into sleeve
- Higher working pressure design
- Custom sleeve length and thickness
- Angled sleeve design (for deflections exceeding straight coupling deflection ranges)
- Transition gasket for undersized pipe
- Wall sleeve design (for building wall or bulkhead passage)

NOTES

- Xylem, Smith-Blair, SB stylized, and Flexi-Coat are registered trademarks of Xylem, Inc., or one of its subsidiaries
- These product specifications were correct at the time of publication and are subject to change without notice
- See the Smith-Blair website for part numbers and ordering information
- See the Smith-Blair website for warranty information
- See the Smith-Blair website for corrosion notice



THIS PRODUCT DOES NOT RESTRAIN PIPE MOVEMENT. Proper anchoring is required to prevent pipe pull out. Failure to anchor or improper anchoring can result in dangerous pipe content escape, property damage, serious injury, and/or death. Read the product installation instructions prior to installing this product.



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Recommended Pipe to Pipe Centerline Gaps

Sleeve Length	Optimum Gaps		Maximum Gap
	Straight Run	Deflected Joints	
5"	1/2"	1"	2"
7"	1"	1-1/2"	3"
10"	1"	2-1/4"	4-1/2"
Longer Than 10"	1"	2-3/4"	"Sleeve Length" – 6"

Pipe gap to be centered in coupling sleeve.

Total Maximum Allowable Axial Pipe Movement per Coupling

Nominal Pipe Size	Allowable Movement
1/2" to ≤ 2"	1/8"
> 2" to ≤ 10"	1/4"
> 10"	3/8"

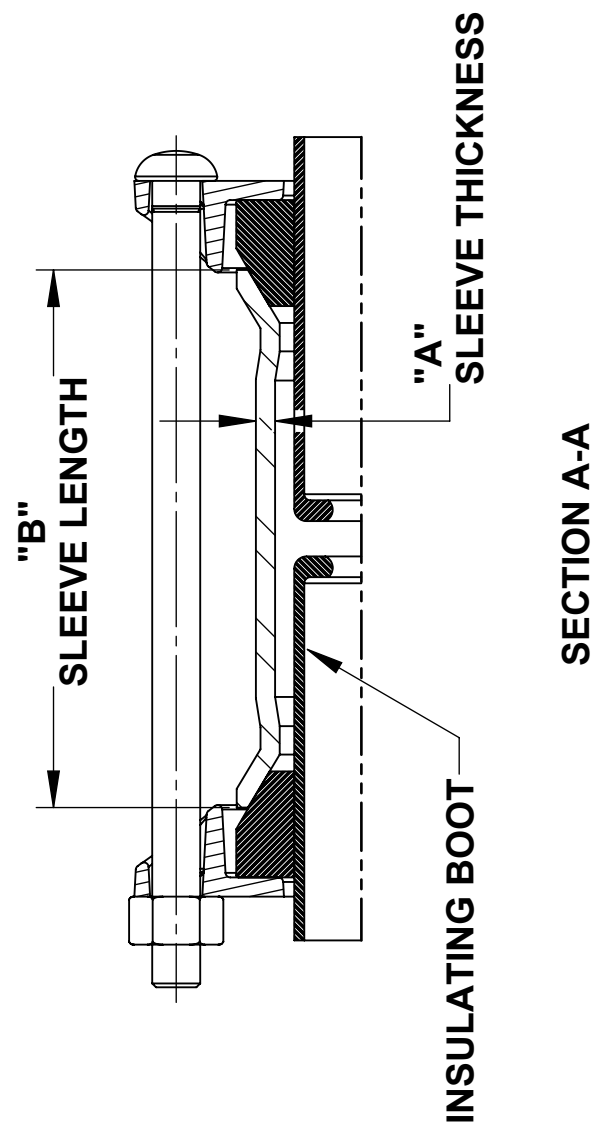
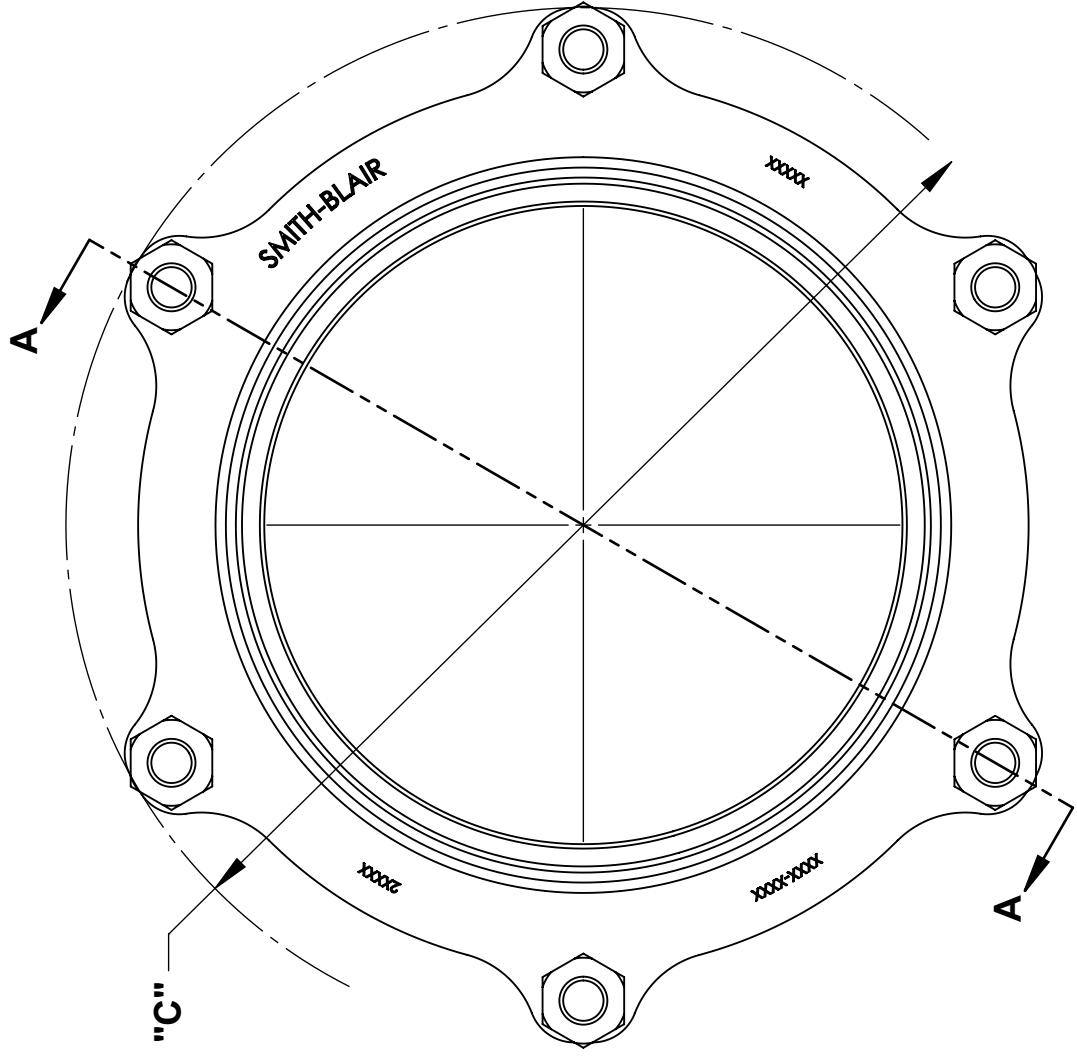
Pipe End Tolerances

Nominal Pipe Size	Minus Tolerance	Plus Tolerance
1/2" to ≤ 16"	-0.06	+0.06
> 16" to ≤ 24"	-0.08	+0.08
> 24" to ≤ 42"	-0.10	+0.10
> 42"	-0.06	+0.12

Maximum Angular Deflection per Coupling

Nominal Pipe Size	Center Sleeve Length		
	5"	7"	10" and Larger
1/2" to ≤ 2"	7°	7°	7°
> 2" to ≤ 12"	4°	4-1/2°	4-1/2°
> 12" to ≤ 24"	2-1/2°	4°	4-1/2°
> 24" to ≤ 36"	-	3-1/2°	4°
> 36" to ≤ 42"	-	3°	3-1/2°
> 42" to ≤ 60"	-	2-1/2°	3°
> 60" to ≤ 80"	-	-	2-1/2°
> 80" to ≤ 100"	-	-	2°
> 100"	-	-	-

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Toll-Free Numbers: Ph: 800-643-9705 • Fax: 800-648-6792



NOTES:
 1. 8" STANDARD SLEEVE LENGTH COUPLING SHOWN OTHER SIZES SIMILAR

NOM. PIPE SIZE	COUPLING O.D. RANGE	A	B	C	HARDWARE		APPROX WEIGHT (LBS)
					QTY.	SIZE	
2	2.32 TO 2.44	0.216	5	6.25	2	5/8" X 8.50"	6
2.50	2.82 TO 2.94	0.226	5	6.50	2	1/2" X 7.38"	10
3	3.44 TO 3.56	0.237	5	7.00	2	5/8" X 8.00"	11
4	3.94 TO 4.06	0.258	5	8.25	3	5/8" X 8.00"	15
4	4.44 TO 4.56	0.258	5	8.25	3	5/8" X 8.00"	16
5	5.44 TO 5.62	0.280	5	9.50	4	5/8" X 8.00"	19
6	5.94 TO 6.06	0.301	5	10.63	5	5/8" X 8.00"	24
6	6.57 TO 6.69	0.250	5	11.63	5	5/8" X 8.00"	26
8	7.94 TO 8.06	0.250	5	12.50	6	5/8" X 8.00"	31
8	8.57 TO 8.75	0.250	7	13.19	6	5/8" X 11.00"	39
10	10.69 TO 10.85	0.375	7	15.56	7	5/8" X 11.00"	41
12	12.69 TO 12.88	0.375	7	17.56	8	5/8" X 11.00"	43
14	13.94 TO 14.13	0.375	7	18.75	6	5/8" X 10.75"	72
16	15.94 TO 16.13	0.375	7	20.75	8	5/8" X 11.00"	84
18	17.94 TO 18.13	0.375	7	22.75	8	5/8" X 11.00"	92
20	19.88 TO 20.09	0.375	7	24.75	10	5/8" X 11.00"	103
22	21.88 TO 22.09	0.375	7	26.75	10	5/8" X 11.00"	112
24	23.88 TO 24.09	0.375	7	28.75	10	5/8" X 11.00"	121

WRENCH SIZE CHART	
NUT	SIZE
1/2"-13UNC HH	7/8"
5/8"-11UNC HH	1-1/16"

TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= ±.015 ANGLES= ±1° MACH. FIN.	NOTES: REMOVE BURRS AND SHARP EDGES DO NOT SCALE DWG.	APP'D	DATE
ALL DIMENSIONS ARE IN INCHES.	SCALE: N/A	CK'D	DATE
		DRN	DATE

TITLE
STEEL INSULATING COUPLING
MODEL 416

SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS	P/N	N/A
SPEC_416.DRW	DWG. NO.	
1	OF	1
	SHEET	
	REV.	2/28/19