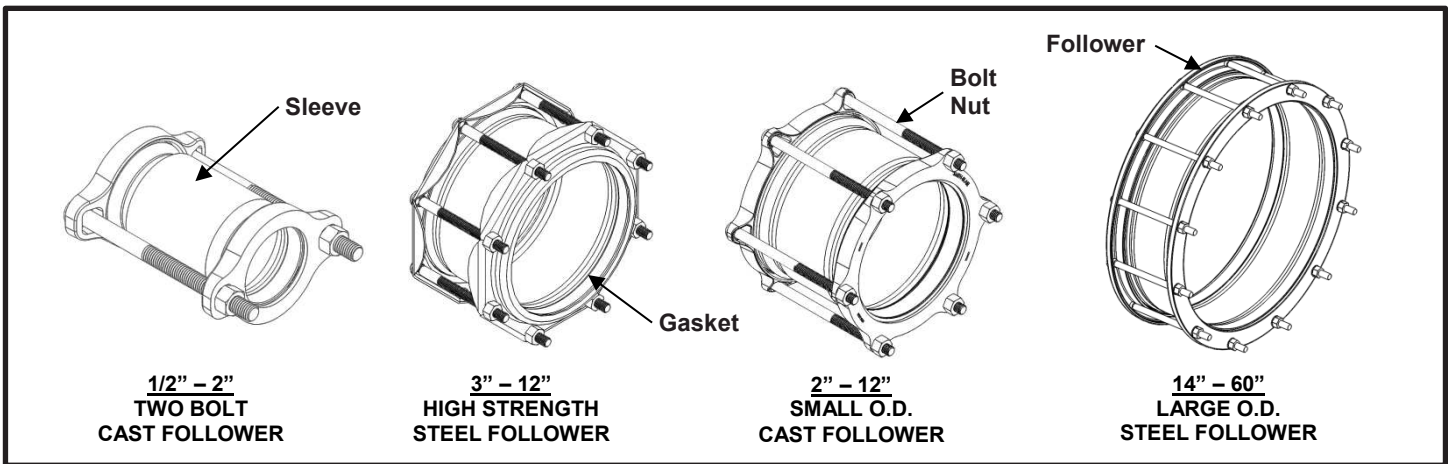


SPECIFICATION STEEL COUPLING MODEL 411



APPLICATIONS

- **Typical Uses**
 - Joining plain-end pipe of same outside diameters
 - Replace split or excessively damaged pipe
- **Standard Pipe Sizes**
 - 1/2" to 60" nominal
- **Type of Pipe**
 - Carbon Steel, Stainless Steel, Ductile Iron, Asbestos Cement, PVC, HDPE, Copper
(see notes for thin wall PVC & HDPE applications)
- **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 which meets application methods AWWA C213
 - Permanently marked with part number and pipe size range for proper selection
 - Integral bolt head pocket for one wrench installation
 - **Z-Section Follower**
 - HSLA Carbon Steel GR80 per ASTM A1011
 - Flexi-Coat® fusion bonded epoxy finish which meets application methods AWWA C213
 - Integral bolt head pocket for one wrench installation
 - **Steel Follower**
 - Carbon Steel C1020 per ASTM A576
 - Flexi-Coat® fusion bonded epoxy finish which meets application methods AWWA C213
 - Integral bolt head pocket for one wrench installation
- **Sleeve**
 - Material: 1/2" – 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 which meets application methods AWWA C213
 - Larger O.D. sleeves provided with hanging ring(s) for ease of installation



SPECIFICATION STEEL COUPLING MODEL 411

▪ Gasket

- Nitrile (Buna-N) per ASTM D2000
- NSF/ANSI 61 and 372 certified
- Compounded to resist water, oil, natural gas, acids, alkalies, most (aliphatic) hydrocarbon fluids, and many other chemicals
- Temperature range: -20°F to +180°F
- For ductile iron and asbestos cement pipe sizes, the gaskets sealing surface has molded in ribs for maximum sealing on textured pipe
- Permanently marked with part number and pipe size range for proper selection

▪ Bolts

- Material: 1/2" hardware = Carbon Steel per ASTM A307
5/8" hardware = HSLA Carbon Steel per AWWA C111/A21.11
- Coating: 1/2" hardware = Fe/Zn coated per ASTM F1941-10
5/8" hardware = None
- Size: Steel Size 1/2" – 2.00" = 1/2"-13UNC, Oval Neck Track Head
Steel Size 2.38" – 24" = 5/8"-11UNC, Oval Neck Track Head
Cast/D. I. Size 2" – 60" = 5/8"-11UNC, Oval Neck Track Head
- Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish

▪ Nut

- Material: 1/2" hardware = Carbon Steel per ASTM A307
5/8" hardware = HSLA Carbon Steel per AWWA C111/A21.11
- Coating: 1/2" hardware = Fe/Zn coated per ASTM F1941-10
5/8" hardware = None
- Size: Steel Size 1/2" – 2.00" = 1/2"-13UNC, Heavy Hex Semi-Finished
Steel Size 2.38" – 24" = 5/8"-11UNC, Heavy Hex Semi-Finished
Cast/D. I. Size 2" – 60" = 5/8"-11UNC, Heavy Hex Semi-Finished

LISTINGS

- UL certified to NSF/ANSI 61 and 372
- Meets applicable AWWA C219 standards

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
- Insulating boot(s)
- 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)



SPECIFICATION STEEL COUPLING MODEL 411

NOTES

- This product **does not** restrain the pipe from pulling out of the fitting
- Pipe stiffeners **are required** when this product is used on HDPE and thin wall PVC pipe
- Flexi-Coat[®] is a registered trademark of Smith-Blair Inc.
- These product specifications were correct at the time of publication and are subject to change without notice
- See the Smith-Blair[®] web site for part numbers and ordering information
- See the Smith-Blair[®] web site for warranty information
- See the Smith-Blair[®] web site for corrosion warnings

Recommended Pipe to Pipe Centerline Gaps

Sleeve Length	Optimum Gaps		Maximum Gap
	Straight Run	Deflected Joints	
5"	1/2"	1"	2"
7"	1/2"	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

Coupling Size	Allowable Movement
3/4" to 2"	1/8"
2-1/2" to 10"	1/4"
10-3/4" and Larger	3/8"

Pipe End Tolerances

Pipe OD	Minus Tolerance	Plus Tolerance
1/2" up to 16"	-0.06	+0.06
>16" up to 24"	-0.08	+0.08
>24" up to 42"	-0.10	+0.10
>42"	-0.06	+0.12

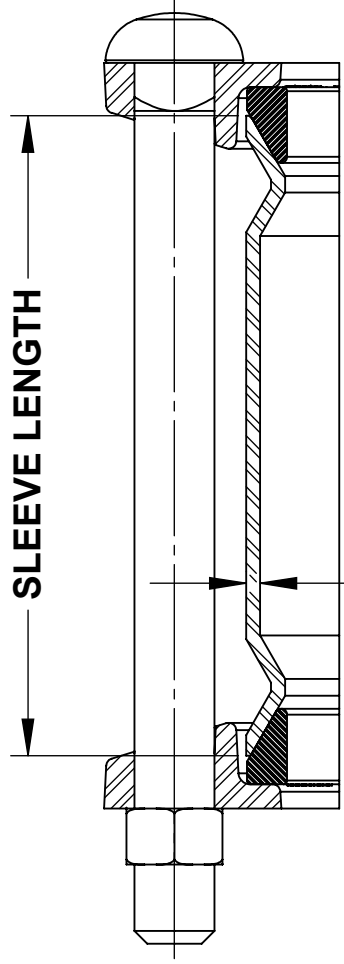
Maximum Angular Deflection per Coupling

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



SPECIFICATION STEEL COUPLING MODEL 411

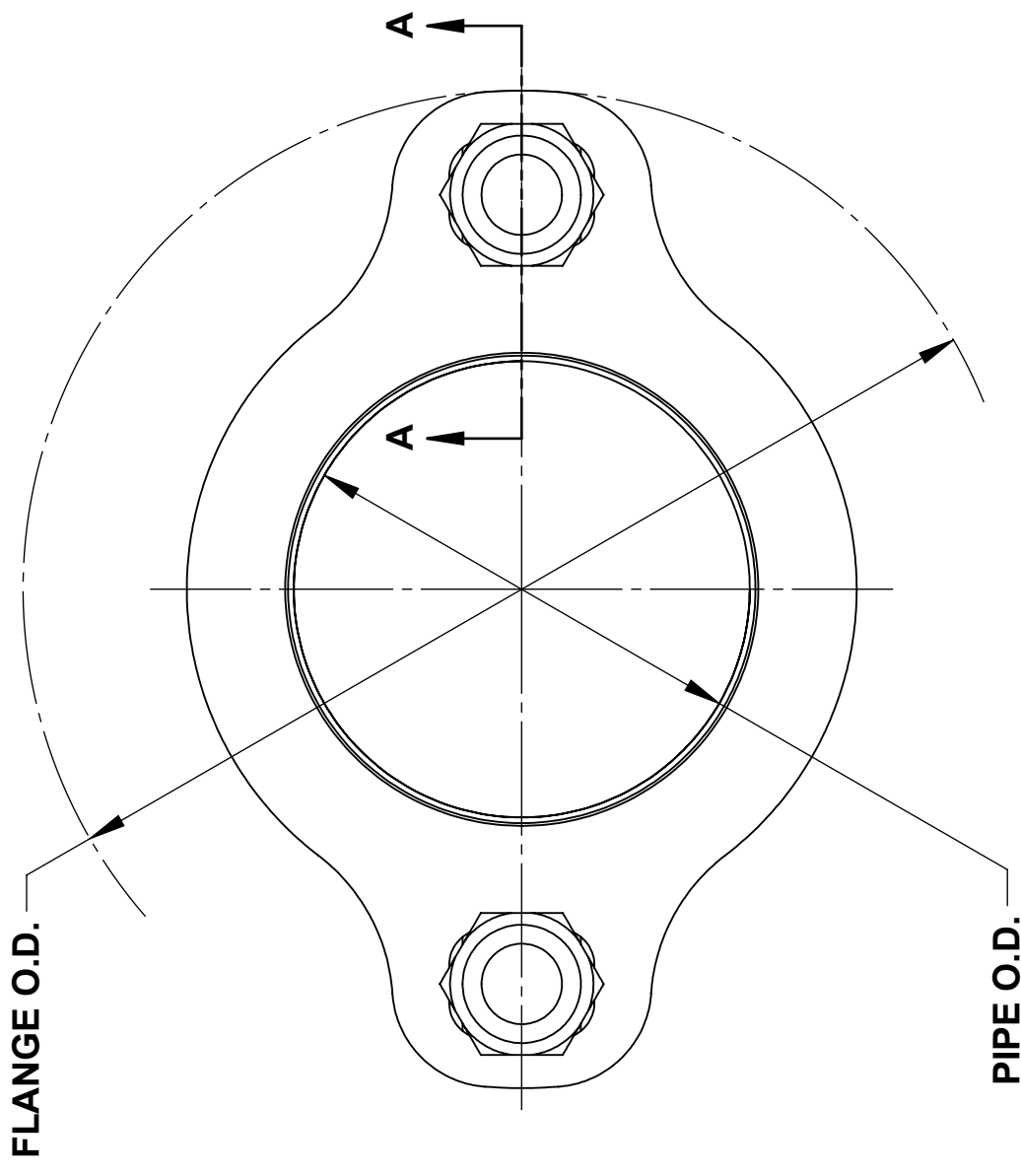
30 Globe Ave, Texarkana, AR 71854
Ph: 870-773-5127 • Fax: 870-773-5212
Toll-Free Numbers: Ph: 800-643-9705 • Fax: 800-648-6792



SLEEVE THICKNESS

SECTION A-A

**1/2" - 2"
TWO BOLT
CAST FOLLOWER**



FLANGE O.D.

PIPE O.D.

NOTES:

1. SEE SMITH-BLAIR CATALOG FOR FLANGE O.D., BOLT QTY & SLEEVE THICKNESS/LENGTH DESIGN CALLOUTS
2. 2" STEEL SIZE STANDARD SLEEVE LENGTH COUPLING SHOWN OTHER SIZES SIMILAR

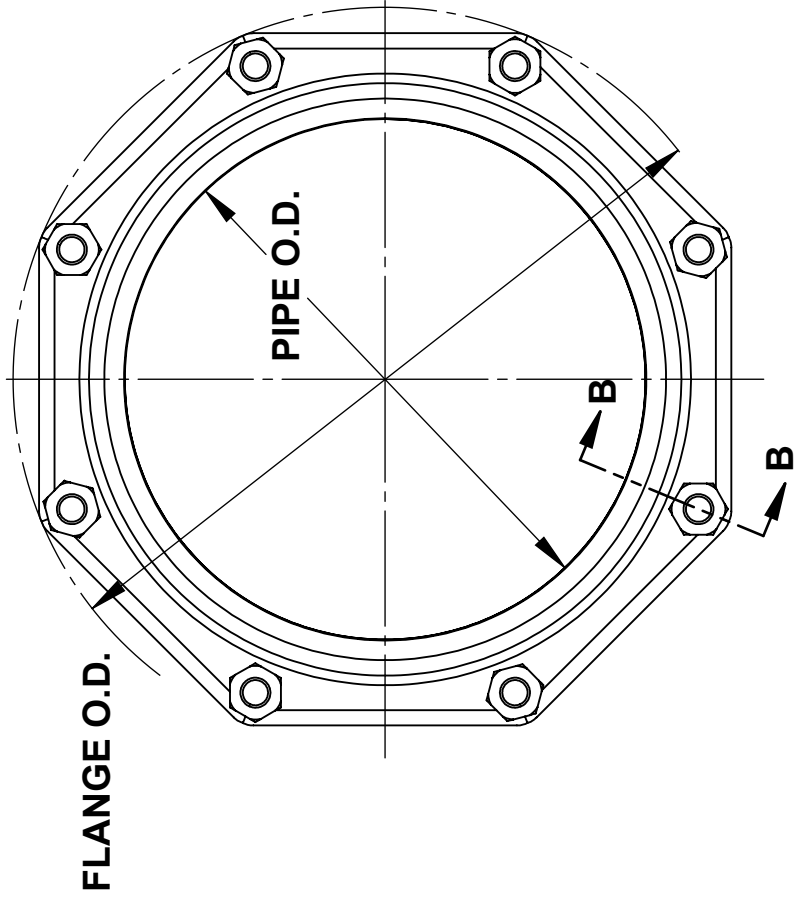
WRENCH SIZE CHART	
NUT	SIZE
1/2"-13UNC HH	7/8"
5/8"-11UNC HH	1-1/16"

CERTIFIED TO NSF/ANSI 61-G & 372

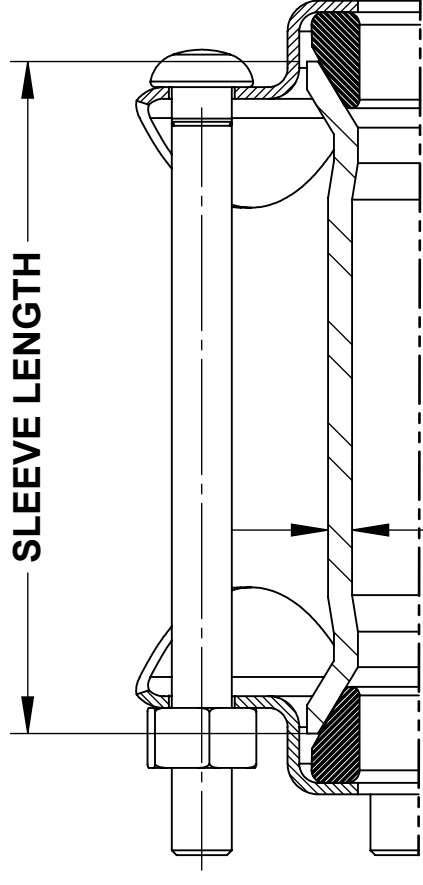
TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= * ANGLES= ±1° MACH. FIN=	NOTES: REMOVE BURRS AND SHARP EDGES DO NOT SCALE DWG.	APP'D	DATE
ALL DIMENSIONS ARE IN INCHES.	SCALE: N/A	CK'D	DATE
		DRN	DATE
		CHD	1/13/16

TITLE
**SPECIFICATION
 STEEL COUPLING
 MODEL 411**

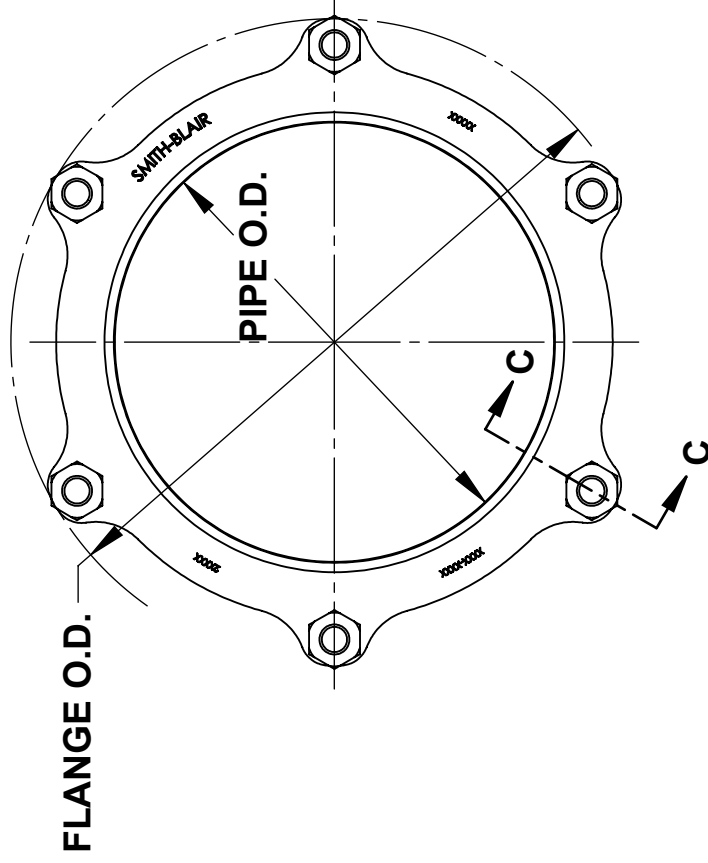
SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS	P/N	N/A
	DWG. NO.	SPEC_411.DRW 1 OF 3 SHEET
		REV. 3/8/16



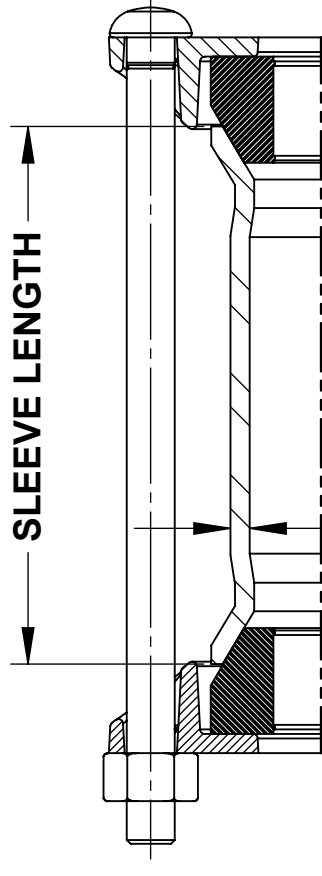
**3" - 12"
HIGH STRENGTH
STEEL FOLLOWER**



SLEEVE THICKNESS
SECTION B-B



**2" - 12"
SMALL O.D.
CAST FOLLOWER**



SLEEVE THICKNESS
SECTION C-C

NOTES:

- SEE SMITH-BLAIR CATALOG FOR FLANGE O.D., BOLT QTY & SLEEVE THICKNESS/LENGTH DESIGN CALLOUTS
- 10" Z-SECTION STEEL SIZE AND 8" D.I. SIZE STANDARD SLEEVE LENGTH COUPLINGS SHOWN OTHER SIZES SIMILAR

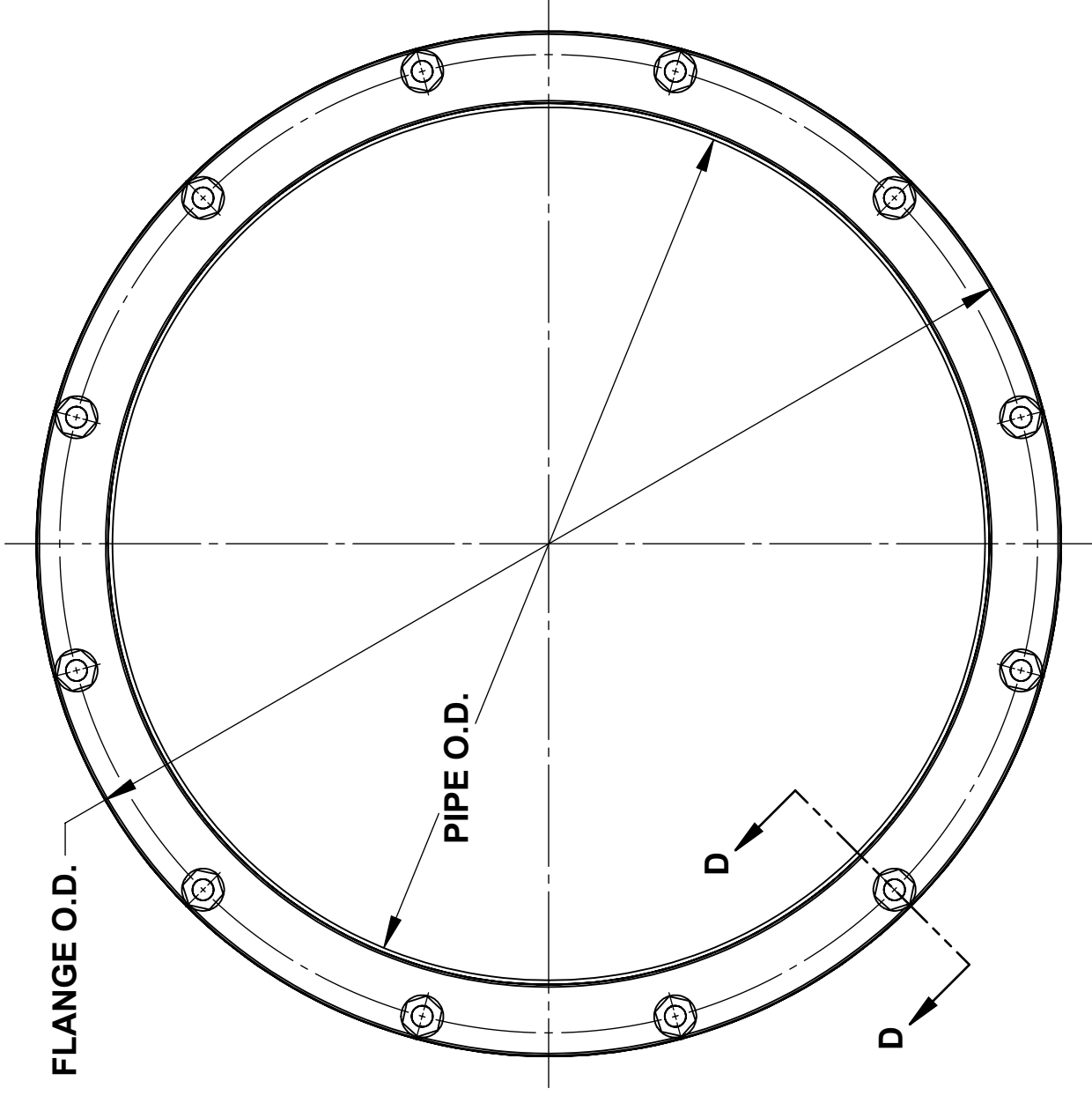
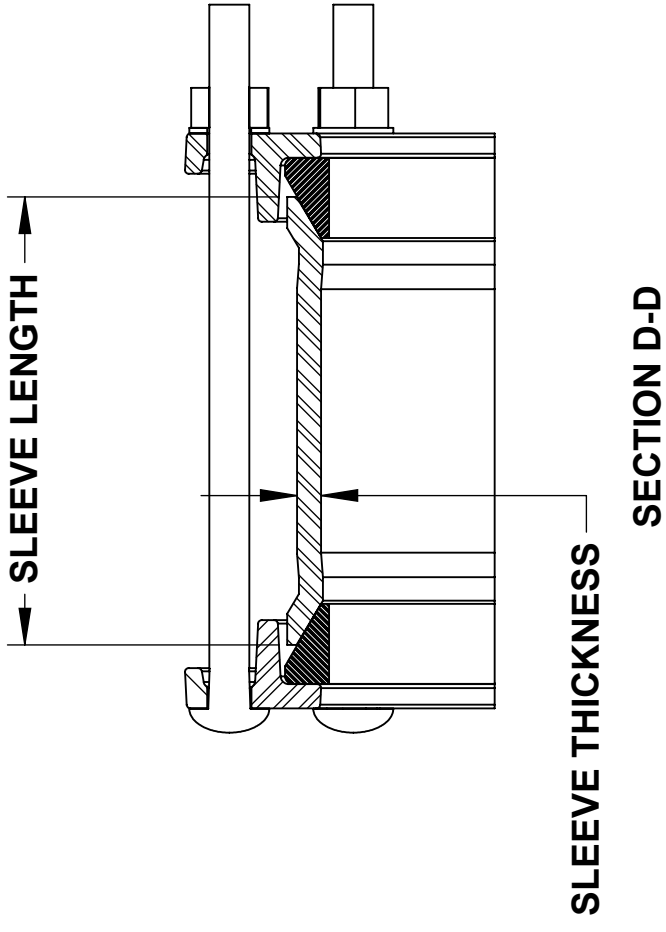
CERTIFIED TO NSF/ANSI 61-G & 372

TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= ±.015 ANGLES= ±1° MACH. FIN.	APP'D	DATE
	CK'D	DATE
	DRN	DATE
NOTES: REMOVE BURRS AND SHARP EDGES DO NOT SCALE DWG.	SCALE: N/A	CHD
ALL DIMENSIONS ARE IN INCHES.		DATE
		1/13/16

TITLE
**SPECIFICATION
STEEL COUPLING
MODEL 411**

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

P/N SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS	N/A
	DWG. NO. SPEC_411.DRW
2 OF 3 SHEET	REV. 3/8/16



**14" - 60"
LARGE O.D.
STEEL FOLLOWER**

CERTIFIED TO NSF/ANSI 61-G & 372

TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= ±.01 ANGLES= ±1° MACH. FIN=	NOTES: REMOVE BURRS AND SHARP EDGES DO NOT SCALE DWG.	APP'D	DATE
	SCALE: N/A	CK'D	DATE
ALL DIMENSIONS ARE IN INCHES.		DRN	DATE
		CHD	1/13/16

TITLE
**SPECIFICATION
 STEEL COUPLING
 MODEL 411**

SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS	P/N	N/A
	DWG. NO.	SPEC_411.DRW 3 OF 3 SHEET

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

- NOTES:
- SEE SMITH-BLAIR CATALOG FOR FLANGE O.D., BOLT QTY & SLEEVE THICKNESS/LENGTH DESIGN CALLOUTS
 - 24" STANDARD SLEEVE LENGTH COUPLING SHOWN OTHER SIZES SIMILAR