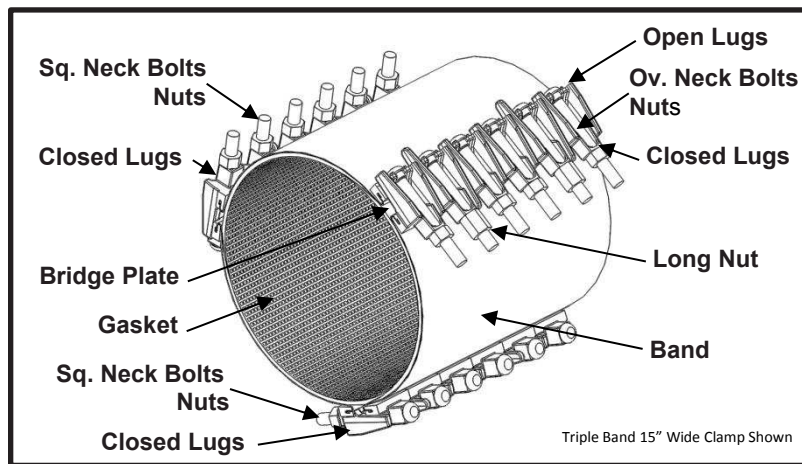


SPECIFICATION

FULL CIRCLE® REPAIR CLAMP

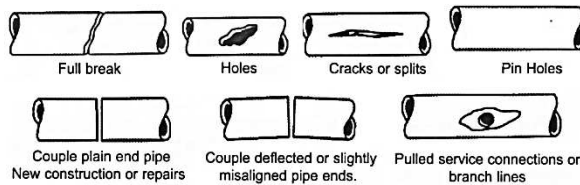
MODEL 228



APPLICATIONS

Typical Uses

- Repair leaks due to complete breaks, splits or holes
- Joining pipes of the same diameter
- Examples:



Standard Pipe Sizes

- Double (2) Band Clamp Range 14.38" to 23.65" O.D.
- Triple (3) Band Clamp Range 23.28" to 30.72" O.D.

Standard Widths

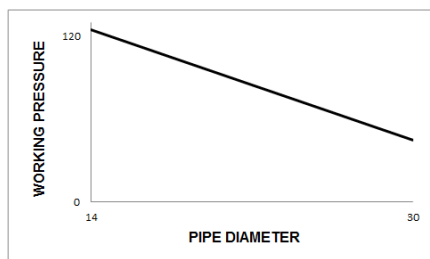
- 10.0", 15.0", 20.0", 30.0"

Type of Pipe

- Carbon Steel, Stainless Steel, Ductile Iron, PVC, Asbestos Cement, Copper, Aluminum

Working Pressure

- Up to 125 psi depending on type of pipe, type of repair, pipe diameter, service conditions and installation workmanship





SPECIFICATION

FULL CIRCLE[®] REPAIR CLAMP

MODEL 228

MATERIALS

- **Band**
 - Type 304 Stainless Steel per ASTM A240
 - Band Thickness: 19 gauge
 - Hemmed ends for lug removal in tight applications
- **Lugs**
 - Cast using Ductile Iron 80-55-06 per ASTM A536
 - Flexi-Coat[®] fusion bonded epoxy finish
 - Slot cast in lug to capture band hem
 - Designed for drop in replaceable bolts
 - One open loop lug and one closed loop lug. The bolts do not have to be removed to install clamp, preventing lost hardware
 - Remaining opening(s) have closed-closed loop lugs securing clamp sections together for ease of installation
 - Long interlocking fingers allow for up to 0.40 inches of range in clamp per band
 - Interchangeable lugs allow combining smaller diameter clamps to create larger diameter clamps
 - Mutually supporting sliding fingers assures proper bolt alignment and permits maximum clamping without bending bolts
- **Gasket**
 - Nitrile (Buna-N) per ASTM D2000
 - Gasket Thickness: 0.250"
 - Certified to NSF/ANSI 61-G & 372
 - Compounded to resist water, oil, natural gas, acids, alkalies, most (aliphatic) hydrocarbon fluids, and many other chemicals
 - Temperature range: -20°F to +180°F
 - Full 360° gridded face gasket provides maximum pipe support, reinforcement, and sealing pressure
 - Tapered ends allow for full circumferential sealing
- **Bridge Plate**
 - Type 304 Stainless Steel quarter-hard per ASTM A240
 - Molded and recessed into gasket
 - Preformed for uniform distribution of gasket pressure over the entire pipe circumference
- **Bolts**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - Size: 5/8"-11UNC x 6.00" long, Track Head Oval Neck (closed lug to open lug)
5/8"-11UNC x 6.88" long, Track Head Square Neck (closed lug to closed lug)
 - Fe/Zn coated per ASTM F1941-10
 - Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish
 - Drop in replaceable bolts
- **Nuts**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - 5/8"-11UNC, Heavy Hex Semi-Finished
 - Fe/Zn coated per ASTM F1941-10
- **Long Nut**
 - HSLA Carbon Steel per AWWA C111/A21.11
 - 5/8"-11UNC x 1.00" long, Heavy Hex Semi-Finished
 - Fe/Zn coated per ASTM F1941-10
 - Used to provide hand tightening during initial clamp installation



SPECIFICATION

FULL CIRCLE® REPAIR CLAMP

MODEL 228

LISTINGS

- Certified to NSF/ANSI 61-G & 372
- Meets applicable AWWA C230 standards

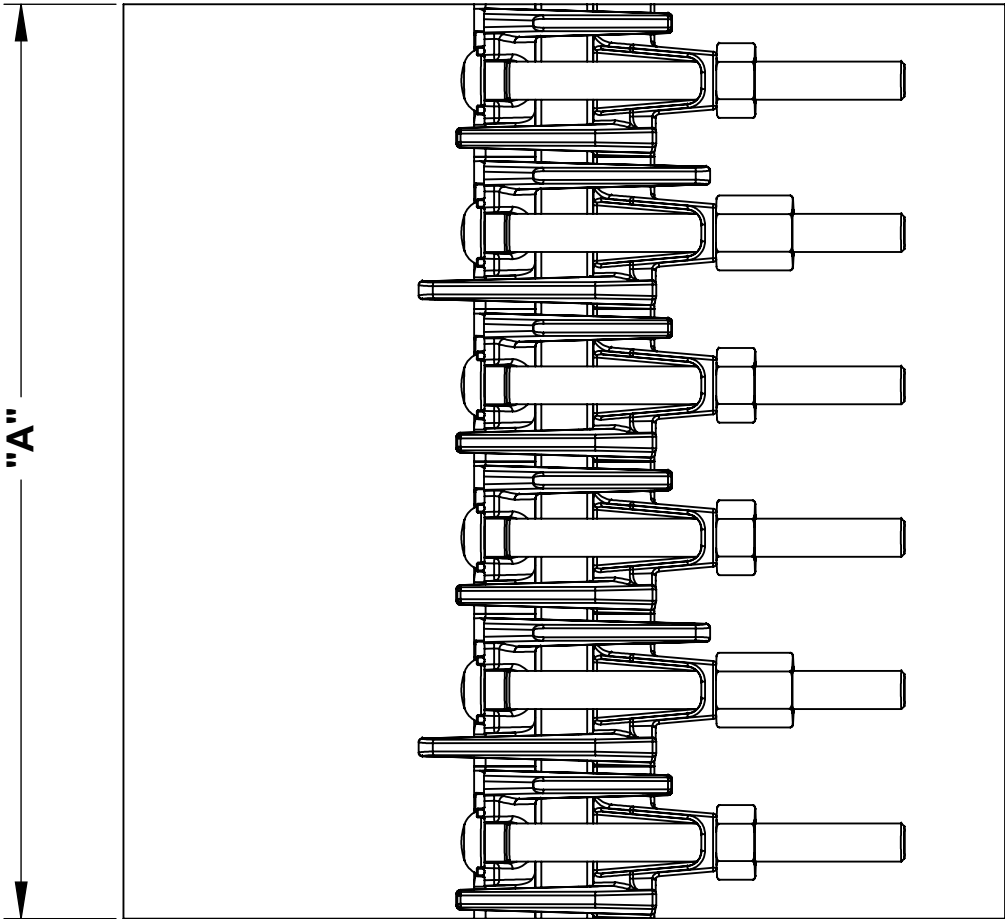
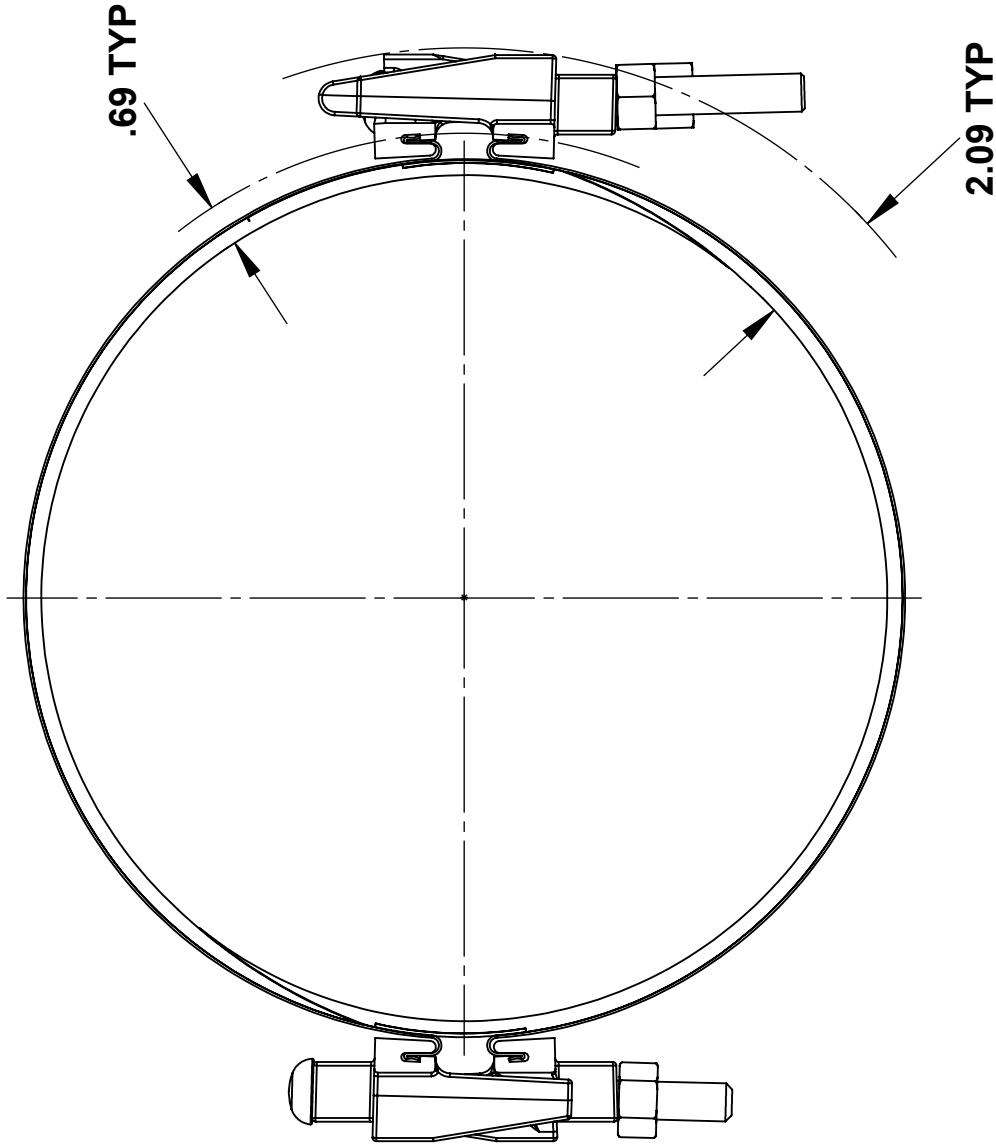
OPTIONS

- Type 316 Stainless Steel band
- 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.)
- Offset gaskets to allow for repairing longer cracks using multiple clamps
- Conductivity feature

NOTES

- This product **does not** restrain the pipe from pulling out of the fitting
- Full Circle® 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

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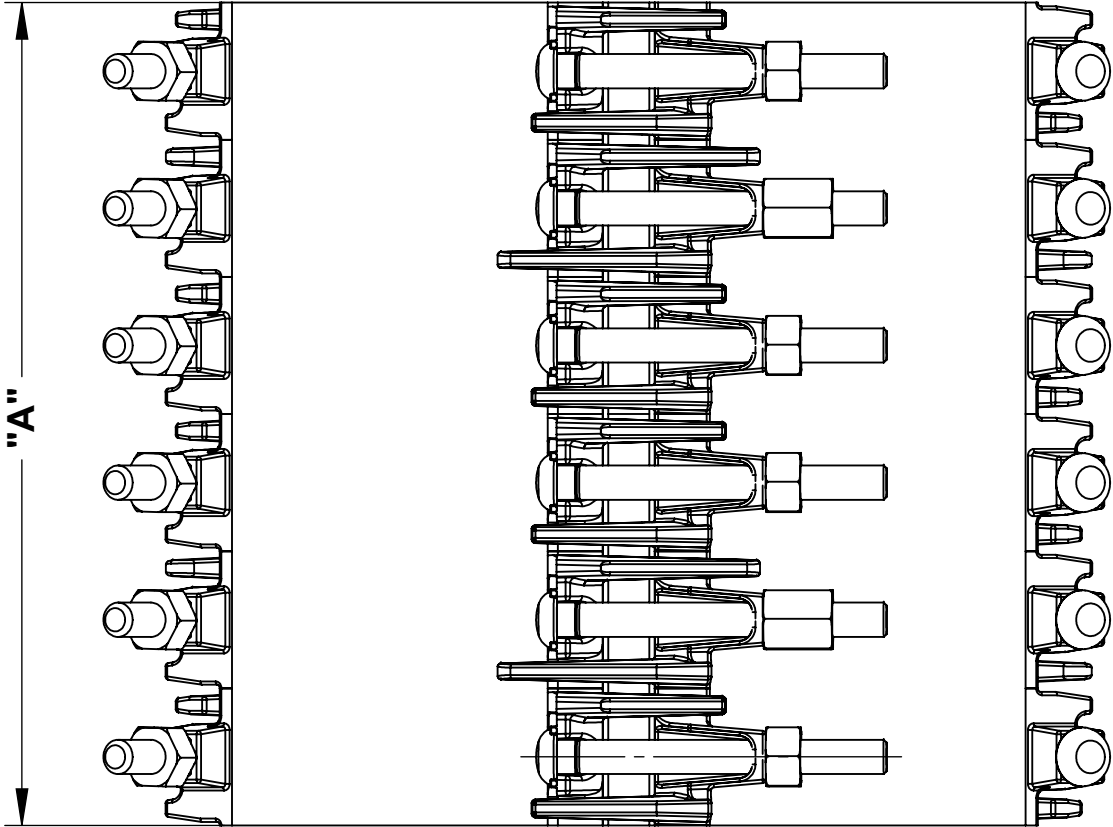
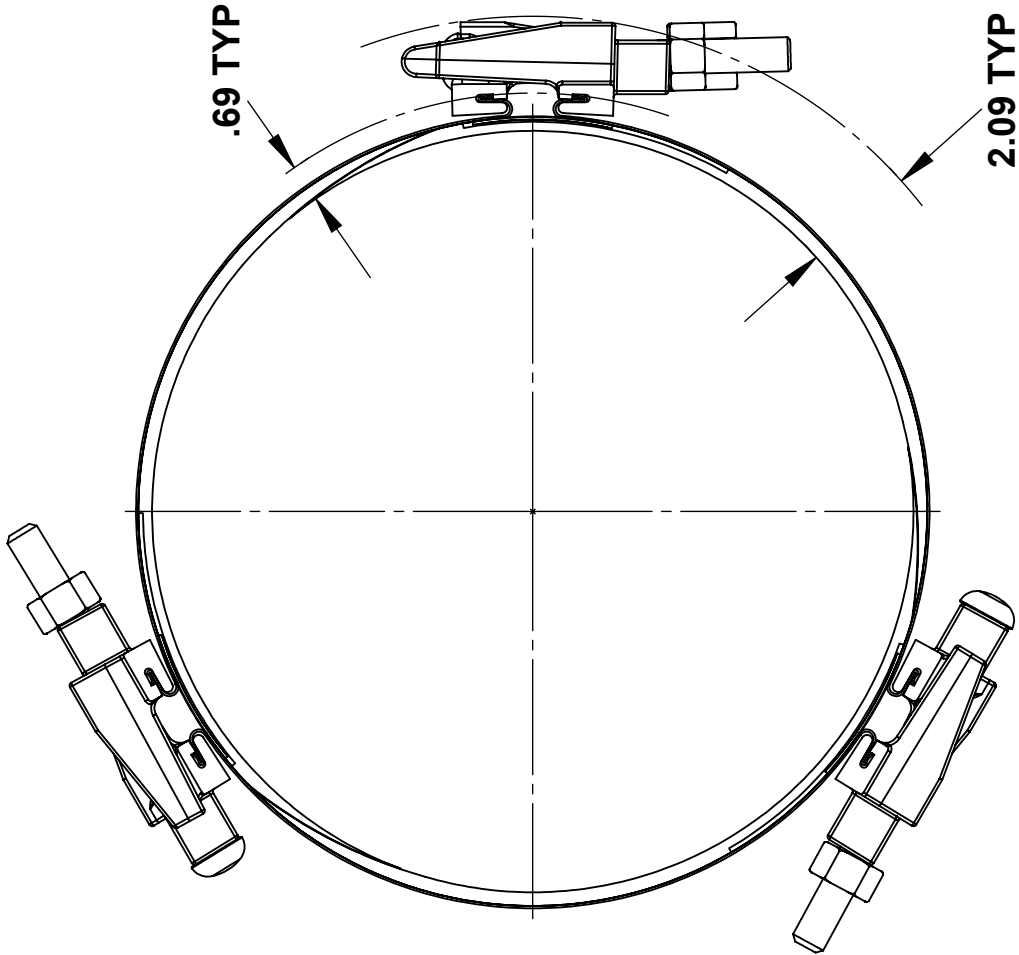
- NOTES:
- 1. 15.00" WIDE CLAMP SHOWN OTHER SIZES SIMILAR
 - 2. SEE SMITH-BLAIR CATALOG FOR AVAILABLE PIPE DIAMETER AND WIDTH COMBINATIONS AS SOME COMBINATIONS ARE NOT AVAILABLE

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
		CK'D	DATE
	SCALE: N/A	DRN	DATE
ALL DIMENSIONS ARE IN INCHES.		CHD	5/19/15

TITLE SPECIFICATION FULL CIRCLE® REPAIR CLAMP MODEL 228-2			
SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS		P/N N/A	
		SPEC_228-2.DRW	1 OF 1 SHEET
		DWG. NO.	2/19/16 REV.

A	BOLT QUANTITY			LONG NUT QUANTITY	SOCKET SIZE
	OVAL NECK	SQUARE NECK	TOTAL		
10.00	4	4	8	2	1-1/16"
15.00	6	6	12	2	
20.00	8	8	16	3	
30.00	12	12	24	4	



NOTES:

- 1. 15.00" WIDE CLAMP SHOWN OTHER SIZES SIMILAR
- 2. SEE SMITH-BLAIR CATALOG FOR AVAILABLE PIPE DIAMETER AND WIDTH COMBINATIONS AS SOME COMBINATIONS ARE NOT AVAILABLE

A	BOLT QUANTITY			LONG NUT QUANTITY	SOCKET SIZE
	OVAL NECK	SQUARE NECK	TOTAL		
10.00	4	8	12	2	1-1/16"
15.00	6	12	18	2	
20.00	8	16	24	3	
30.00	12	24	36	4	

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
		CK'D	DATE
	SCALE: N/A	DRN	CHD
ALL DIMENSIONS ARE IN INCHES.			DATE
			5/19/15

TITLE SPECIFICATION FULL CIRCLE® REPAIR CLAMP MODEL 228-3			
SMITH-BLAIR, Inc. TEXARKANA, ARKANSAS		P/N N/A	
SPEC_228-3.DRW		1 OF 1 SHEET	2/19/16 REV.
DWG. NO.			