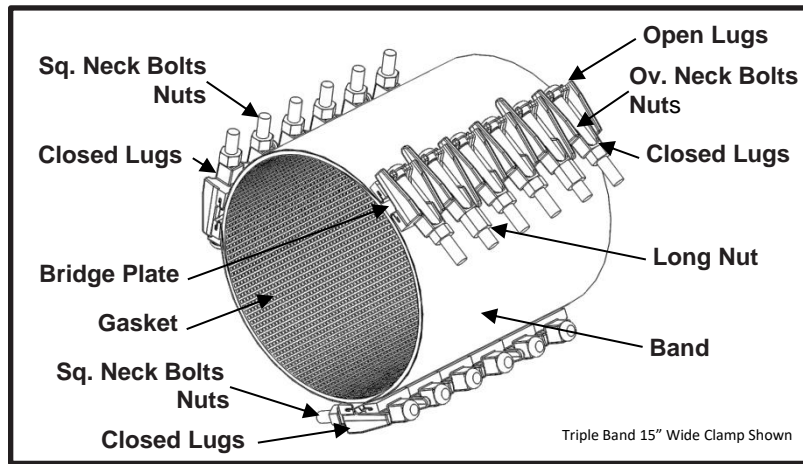




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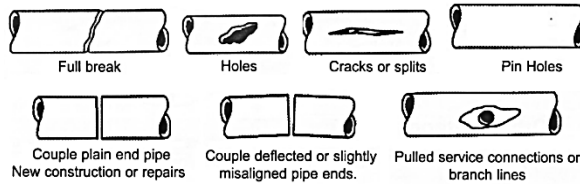
SPECIFICATION FULL CIRCLE® REPAIR CLAMP MODEL 228



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

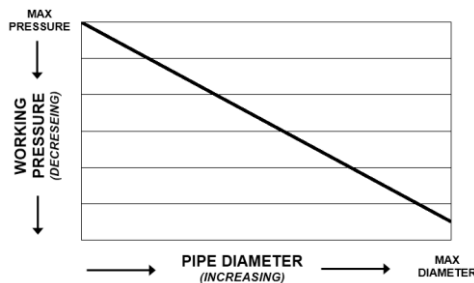
- 10.0", 15.0", 20.0", 30.0"

Type of Pipe

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

Working Pressure

- Up to 150 psi depending on type of pipe, type of repair, pipe diameter, service conditions and installation workmanship





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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"
 - Compounded to resist water, oil, natural gas, acids, alkalis, 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 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 Steel per AWWA C111/A21.11
 - 5/8"-11UNC, Heavy Hex Semi-Finished
 - Fe/Zn coated per ASTM F1941-10
- **Long Nut**
 - HSLA 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



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SPECIFICATION

FULL CIRCLE[®] REPAIR CLAMP

MODEL 228

LISTINGS/STANDARDS

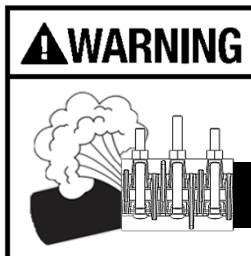
- Certified to NSF/ANSI 61 and NSF/ANSI 372
- Meets applicable portions of AWWA C230

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

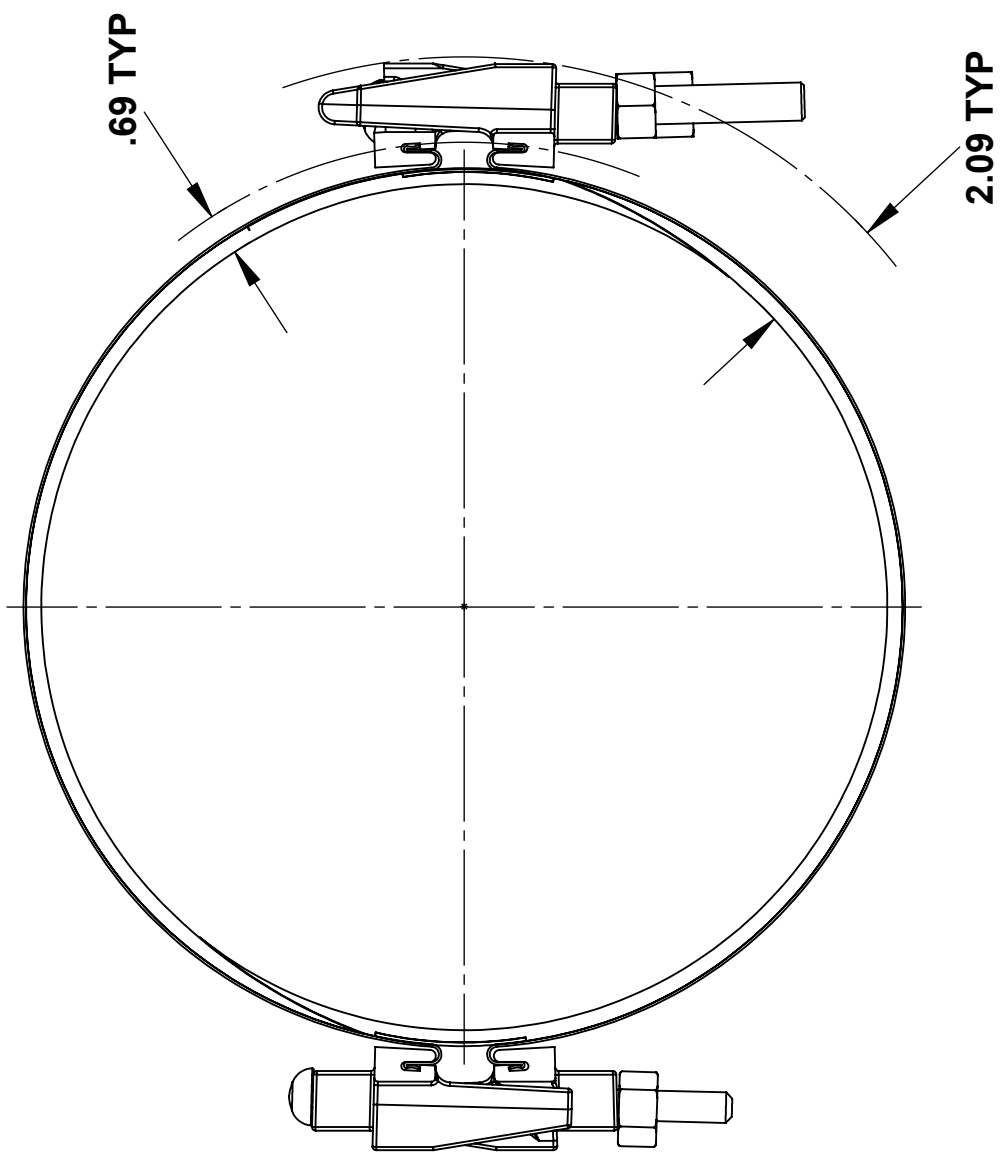
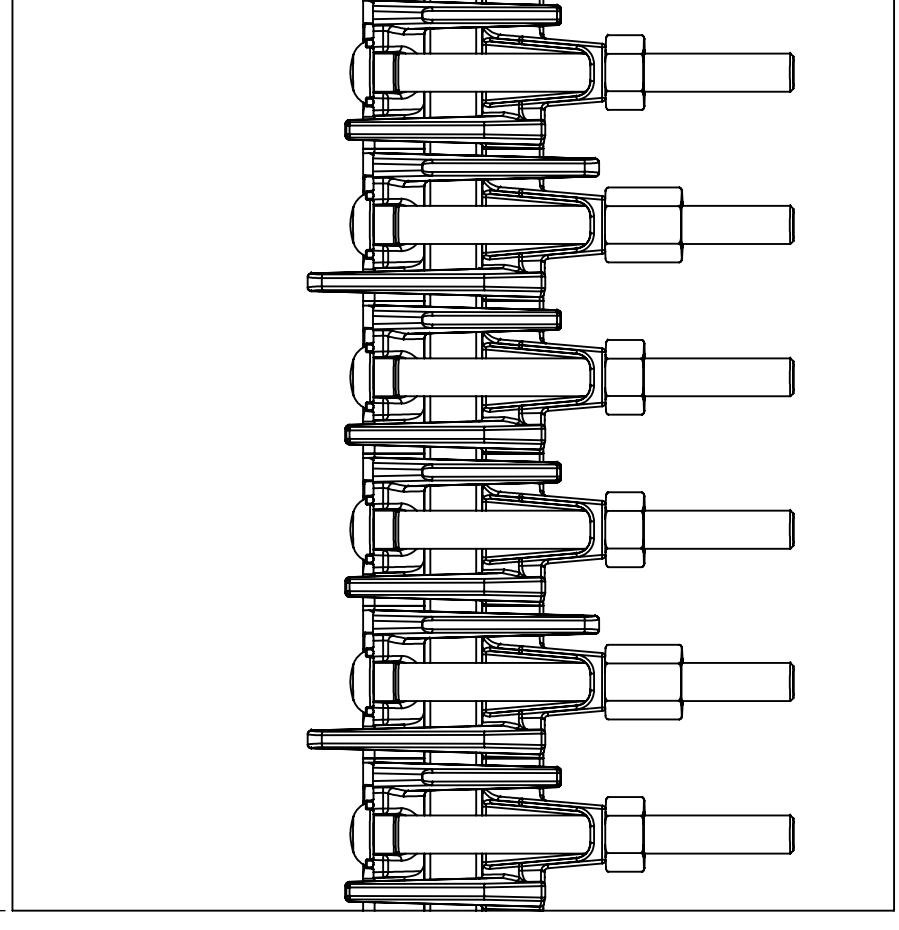
- Full Circle[®] is a registered trademark of Smith-Blair Inc.
- These product specifications were correct at the time of publication and are subject to change without notice
- See the Smith-Blair web site for part numbers and ordering information
- See the Smith-Blair web site for warranty information
- See the Smith-Blair web site for corrosion 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.

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

"A"



- 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	4	8	2	1-1/16"
15.00	6	6	12	2	
20.00	8	8	16	3	
30.00	12	12	24	4	

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

TITLE
SPECIFICATION
FULL CIRCLE® REPAIR CLAMP
MODEL 228-2

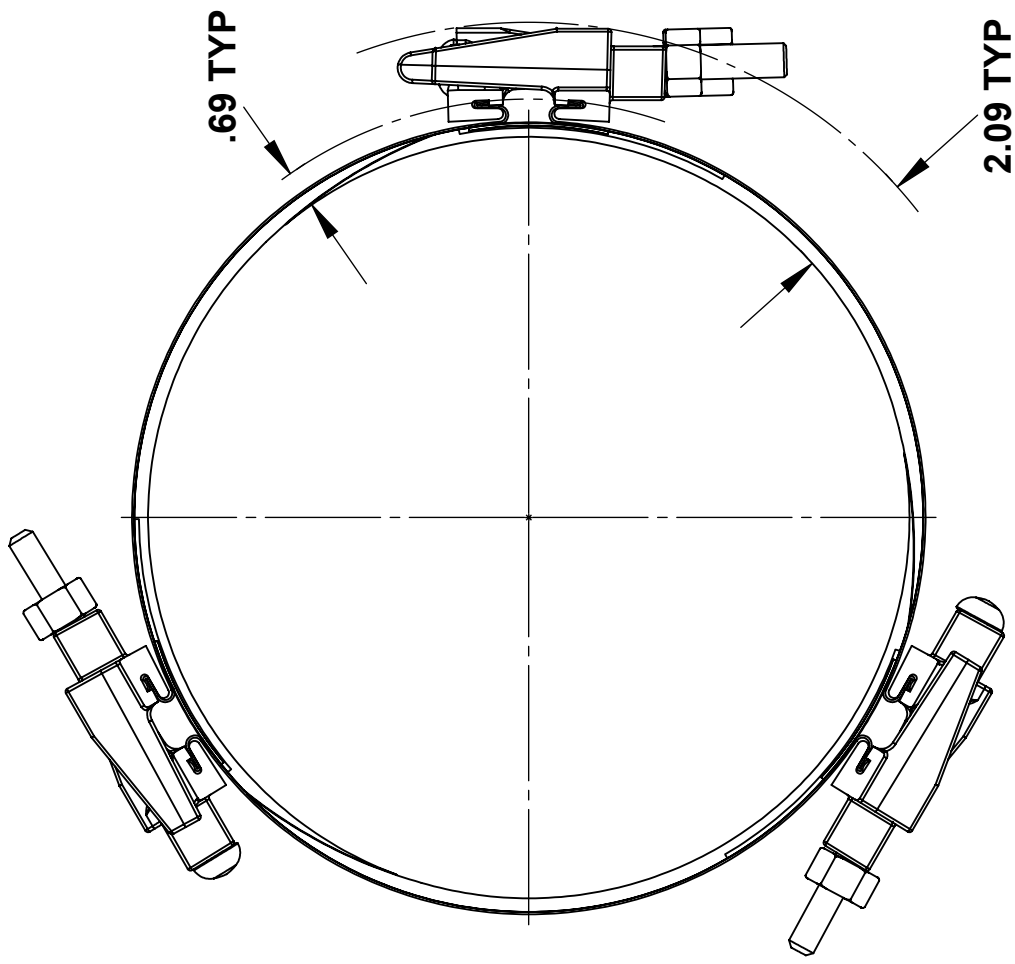
P/N N/A

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DWG. NO. SPEC_228-2.DRW

1 OF 1 SHEET

6/28/16 REV.



- 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	

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
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ALL DIMENSIONS ARE IN INCHES.		DRN	DATE

TITLE
SPECIFICATION
FULL CIRCLE® REPAIR CLAMP
MODEL 228-3

P/N N/A

Smith-Blair
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DATE: 5/19/15

1 OF 1 SHEET
 SPEC_228-3.DRW
 DWG. NO. 6/28/16 REV.