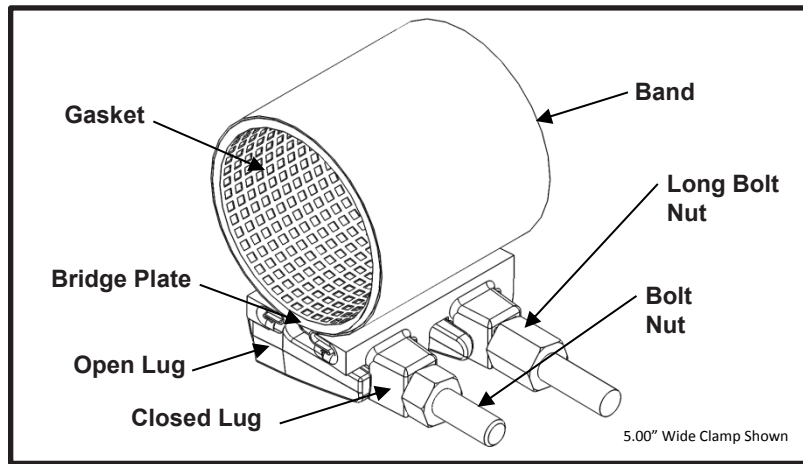




# SPECIFICATION

## FULL CIRCLE® REPAIR CLAMP

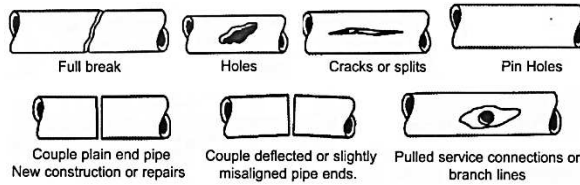
### MODEL 221



#### APPLICATIONS

- **Typical Uses**

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



- **Standard Pipe Sizes**

- 2" to 14" nominal

- **Standard Width**

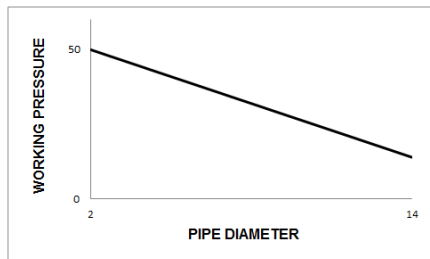
- 5.0"

- **Type of Pipe**

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

- **Working Pressure**

- Up to 50 psi depending on type of pipe, type of repair, pipe diameter, service conditions, and installation workmanship



# SPECIFICATION

## FULL CIRCLE<sup>®</sup> REPAIR CLAMP

### MODEL 221

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#### MATERIALS

- **Band**
  - Type 304 Stainless Steel per ASTM A240
  - Band Thickness: 24 gauge thick for clamps 4.50" diameter and smaller  
20 gauge thick for clamps 4.80" diameter and larger
  - Hemmed ends for lug removal in tight applications
- **Lugs**
  - Cast using Ductile Iron 80-55-06 per ASTM A536
  - Flexi-Coat<sup>®</sup> 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
  - Long interlocking fingers allow for up to 0.40 inches of range in clamp
  - 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: 0.192" thickness for clamps 4.50" diameter and smaller  
0.218" thickness for clamps 4.80" diameter and larger
  - 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
- **Bolt**
  - HSLA Carbon Steel per AWWA C111/A21.11
  - 5/8"-11UNC x 6.00" long, Track Head Oval Neck
  - Fe/Zn coated per ASTM F1941-10
  - Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish
  - Drop in replaceable bolts
- **Long Bolt**
  - HSLA Carbon Steel per AWWA C111/A21.11
  - 5/8"-11UNC x 6.88" long, Track Head Oval Neck
  - Fe/Zn coated per ASTM F1941-10
  - Rolled threads for improved physical characteristics, greater thread accuracy, and smooth surface finish
  - Used on clamps 4.50" diameter and smaller to facilitate the initial clamp installation
  - Drop in replaceable bolts
- **Nut**
  - HSLA Carbon Steel per AWWA C111/A21.11
  - 5/8"-11UNC, Heavy Hex Semi-Finished
  - Fe/Zn coated per ASTM F1941-10

# SPECIFICATION

## FULL CIRCLE<sup>®</sup> REPAIR CLAMP

### MODEL 221

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- **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

#### 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.)
- Conductivity feature

#### NOTES

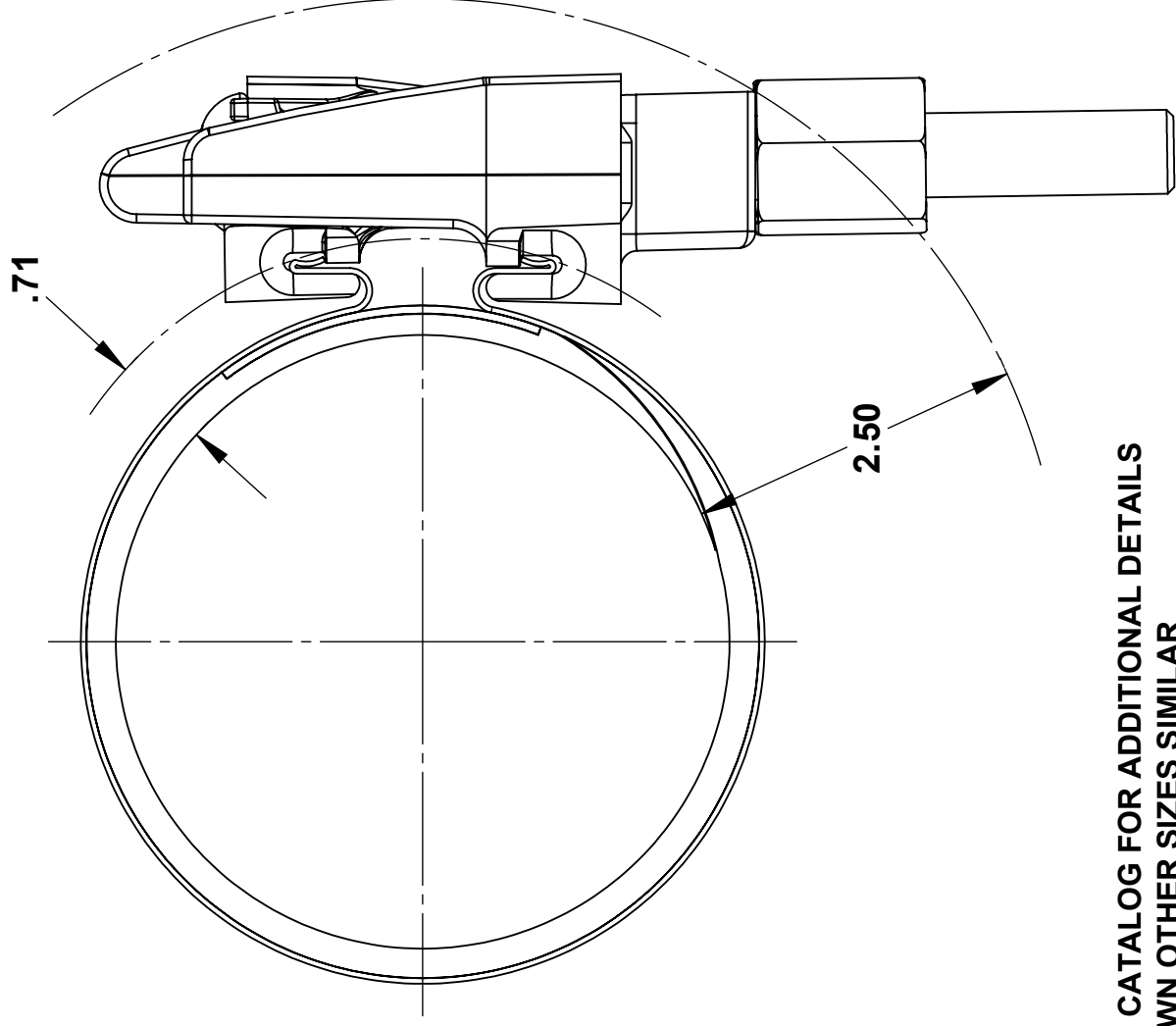
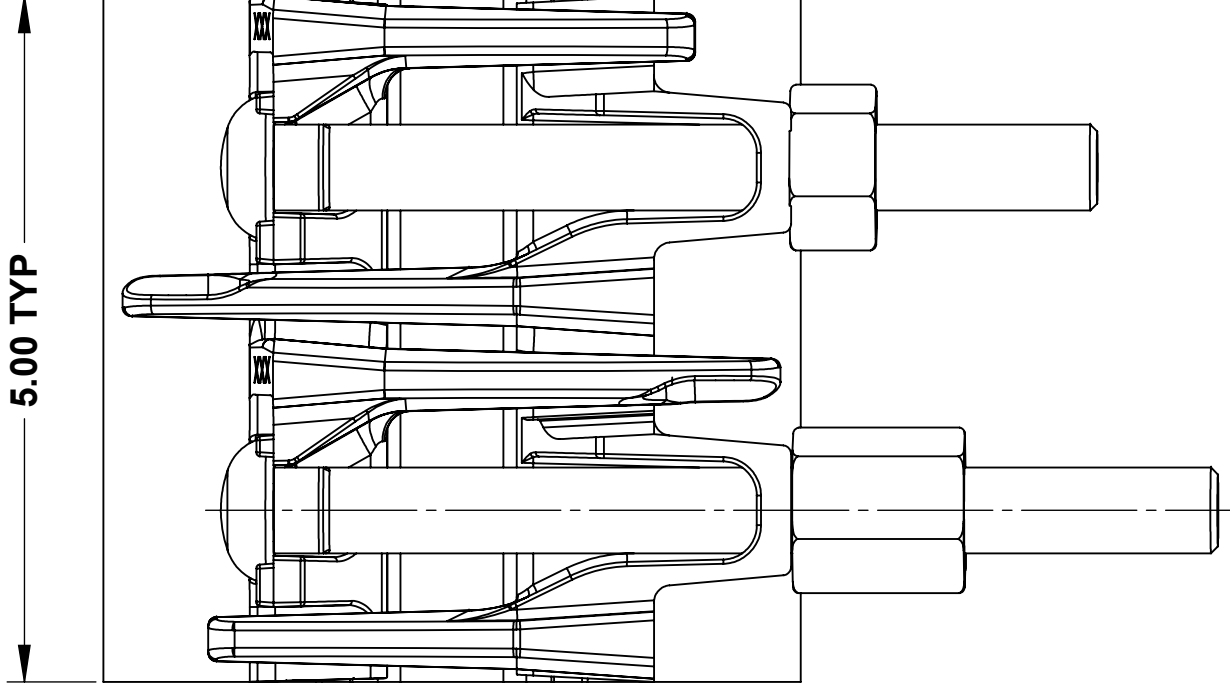
- This product **does not** restrain the pipe from pulling out of the fitting
- Pipe stiffeners **are required** when this product is used to join thin wall PVC pipe
- Full Circle<sup>®</sup> is a registered trademark of Smith-Blair Inc.
- These product specifications were correct at the time of publication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



36 Hudson Rd  
Sudbury MA 01776



800-225-4616  
[www.tisales.com](http://www.tisales.com)



- NOTES:**
1. SEE SMITH-BLAIR CATALOG FOR ADDITIONAL DETAILS
  2. 4.50" CLAMP SHOWN OTHER SIZES SIMILAR
  3. LONG OVAL NECK BOLTS ONLY PROVIDED ON CLAMPS 4.50" DIAMETER AND SMALLER

**CERTIFIED TO NSF/ANSI 61-G & 372**

NOMINAL SIZE	APPROX. WT. (LB)	BOLT QUANTITY			SOCKET SIZE
		SHORT	LONG	TOTAL	
2.00	6				
2.25	6				
2.50	6	2	1	2	
3.00	6				
4.00	7				
5.00	7				1-1/16"
6.00	8				
8.00	9	2	NA	2	
10.00	10				
12.00	10				
14.00	11				

TOLERANCES U.N.O. XX= ±.03 XXX= ±.015 FRACTIONS= 1/16 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	CHD
			DATE
			5/18/15

**TITLE**  
**SPECIFICATION**  
**FULL CIRCLE® REPAIR CLAMP**  
**MODEL 221**

<b>SMITH-BLAIR, Inc.</b> TEXARKANA, ARKANSAS	P/N	N/A
	DWG. NO.	<b>SPEC_221.DRW</b>
	1 OF 1 SHEET	2/19/16 REV.