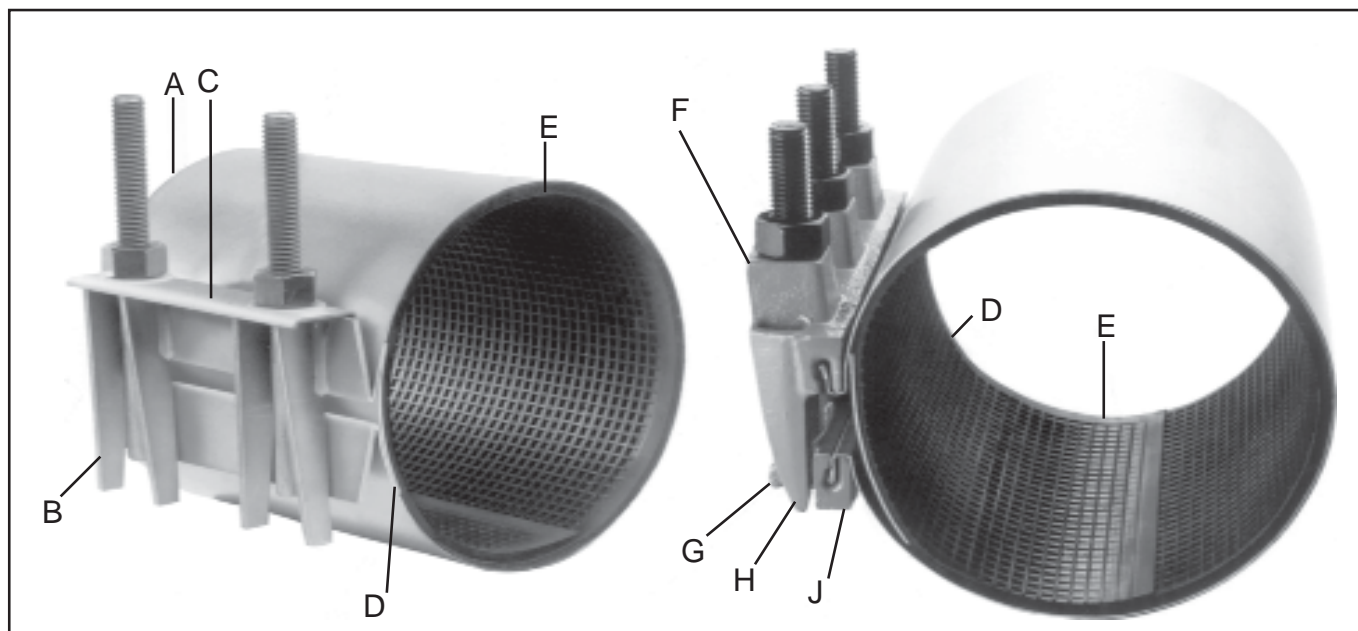


## General Information



**A** Full circumference single or multiple section stainless steel bands are available in 7 1/2", 10", 15", 20" and 30" widths to fit virtually all types and sizes of pipe up to 12" in diameter.

**B** All weldments including studs, sidebars and fingers are constructed of premium grade stainless steel to minimize the possibility of corrosion.

**C** Smith-Blair's exclusive "C" shaped keeper bar permits fast run-down of nuts against the clamps weldments while equalizing tension along the full length of the clamp.

**D** Bridge plate flush mounted and bonded to the gasket assures even distribution of gasket pressure and prevents crimping.

**E** Gridded, tapered, overlapping gasket design offers

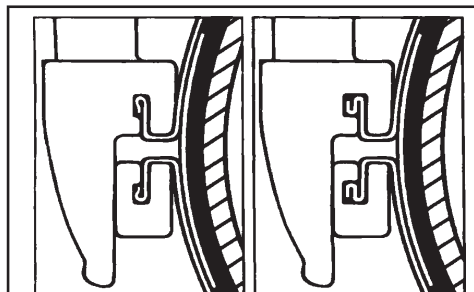
excellent full circumference sealing and full adjustment to rough pipe surfaces.

**F** A special high-strength ductile iron alloy lug utilizes a strength efficient computer-aided design that's not only stronger, but also lighter and easier to install. Lugs are Flexi-Coat epoxy coated.

**G** Drop-in, self-securing bolts eliminate loose parts, save time and make installation possible with only one wrench.

**H** Lugs with mutually supporting sliding fingers to assure proper bolt alignment while tightening. Permits maximum torque without bending of bolts.

**J** The band locking system uses a unique lug core design and a band hemming process that resists pull-out and provides maximum band retention.



Smith-Blair's design (right) securely attaches the lug to the band.



EXAMPLES:

### Electrical Conductivity Buttons

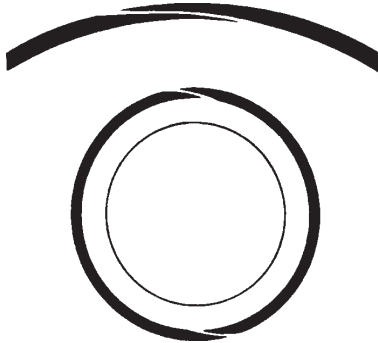
Copper electrical conductor buttons are available for most 200 series Full Circle® Repair Clamps for Gas Service. Factory installed conductor buttons are glued between the gasket and the stainless steel band with contact buttons protruding through specially prepared gaskets to accommodate cathodic protection.

When ordering clamps with factory installed conductor buttons, change the first digit of the last three digits in the catalog number to a 7.

XXX-XXXXXX-700 Conductor buttons and low alloy bolts.  
 XXX-XXXXXX-701-Conductor buttons and stainless steel bolts.  
 XXX-XXXXXX-099 Extra nut for anode attachment.  
 XXX-XXXXXX-799 Conductor strips and extra nut.

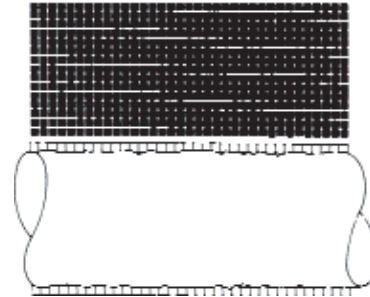
# Smith-Blair Repair Clamps seal positively and effectively

## Tapered and Lapped Gaskets



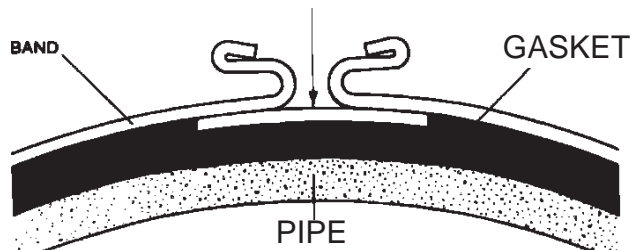
Smith-Blair tapered, lapped gaskets provide a continuous and uniform seal over the full O.D. range of the clamp.

## Finely Grided Gasket



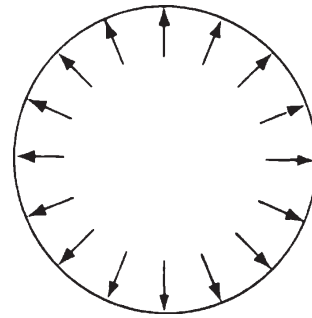
Smith-Blair finely grided gaskets have 16 grids to the square inch; form a series of dams to conform to irregularities on the pipe surface; and seal effectively against rough or pitted surfaces to prevent development of a leak path.

## Smith-Blair Recessed Bridge Plate Bonded-In Recessed Bridge Plate



Smith-Blair® bridge plates are precision set, flush mounted and securely bonded into the gasket during the molding operation. This provides a smooth gasket surface, which insures a 100% encirclement of uniform gasket pressure. A dependable method of sealing.

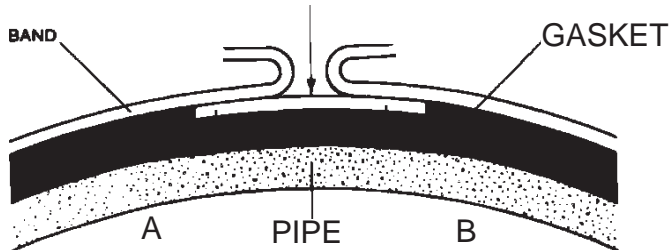
## Uniform Distribution of Gasket Pressure



There is a uniform distribution of gasket pressure over the entire circumference of the pipe.

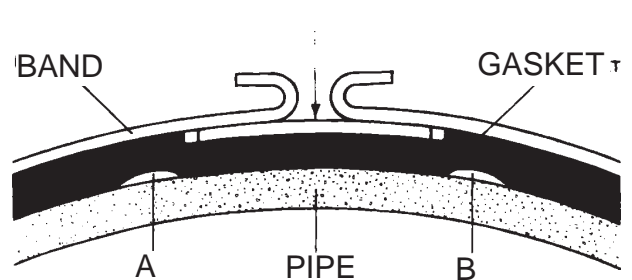
## Other Methods of Bridge Plate

### Bridge Plate Glued on Top of Gasket



Bridge plates attached to the clamp band or glued to the outside of the gasket have exposed metal edges that hold the band away from the gasket, setting up low pressure points as in "A" and "B" above, which are potential leak paths. The exposed metal edge can also hang up on the clamp band and impede tightening of the clamp.

### Bridge Plate Glued in Molded Recess



Bridge plates that are glued into recesses formed in the gasket during molding, may not fit the recess properly. There may be void spaces that create low pressure points, as at "A" and "B" above which are potential leak points.



## 234 Tapped Full Circle® Repair Clamp Single Band



### 1 1/4", 1 1/2" and 2" NPT Taps - Low Alloy Bolts and Nuts

| Standard         |                        |                  |               | Catalog Number                   |                                  |                                  | Metric       |                    |            |              |
|------------------|------------------------|------------------|---------------|----------------------------------|----------------------------------|----------------------------------|--------------|--------------------|------------|--------------|
| Nom. Size Inches | O.D. Range Inches      | Width Inches     | Wt. Each Lbs. | 1 1/4" NPT/32 MM                 | 1 1/2" NPT/40 MM                 | 2" NPT/50 MM                     | Nom. Size MM | O.D. Range MM      | Width MM   | Wt. Each Kg. |
|                  |                        |                  |               | 4                                | 4.45-4.73<br>4.74-5.14           | 12 1/2<br>12 1/2                 |              |                    |            |              |
| 6                | 6.56-6.96<br>6.84-7.24 | 12 1/2<br>12 1/2 | 19.2<br>19.2  | 234-066312-010<br>234-069012-010 | 234-066312-012<br>234-069012-012 | 234-066312-014<br>234-069012-014 | 150<br>200   | 174-183<br>217-227 | 317<br>317 | 8.7<br>8.7   |
| 8                | 8.54-8.94<br>8.99-9.39 | 12 1/2<br>12 1/2 | 21.4<br>21.4  | 234-086312-010<br>234-090512-010 | 234-086312-012<br>234-090512-012 | 234-086312-014<br>234-090512-014 | 200<br>200   | 229-238<br>229-238 | 317<br>317 | 9.7<br>9.7   |

NOTE: NOT recommended for PE pipe applications.

## 235 Tapped Full Circle® Repair Clamp Super Range Double Band



Smith-Blair 235 Double Tapped Full Circle® Repair Clamps provide a fast, economical means of repairing a damaged or broken pipe at broken or torn out service connections, or branch lines. The repairs can be made and the service connection or branch line restored in one operation. The clamps can also be used for new installations of service connections or branch lines.

The stainless steel outlet is welded to the band and is available with NPT threads. The double band configuration enables the clamp to have a greater size range than single band clamps. A single clamp will fit a variety of the types and classes of pipe in each nominal pipe size, 4 inch through 12 inch.

Full Circle® Repair Clamps feature a lap type gasket with molded tapered ends to provide efficient equalized sealing at the lap joint on any pipe within the clamp's range. The gasket has a finely gridded surface with the resilience to easily conform to irregularities on rough pipe surfaces or pitted areas, providing an effective seal all around the pipe.

A stainless steel bridge plate spans the opening of the lugs and is bonded flush into the gasket to prevent wrinkling in the lug area, providing even gasket pressure at all points around the full circumference of the pipe.

The band is made of stainless steel, selected to meet the necessary corrosion resistance, flexibility and strength requirements. Lugs are securely attached to the stainless steel band and have mutually supporting stabilizing fingers to permit maximum torquing of the bolts. The lug design includes a drop-in bolt feature that eliminates loose parts, saves time and aids installation under adverse conditions.

The bolts and nuts are low alloy steel with rolled threads, double radius heads and a generous shoulder to prevent bolt rotation under maximum torque loading.

#### Material Specifications

|                      |  |
|----------------------|--|
| <b>Band:</b>         | Stainless Steel Type 304   |
| <b>Lugs:</b>         | Ductile Iron ASTM A536, 65-45-12.  |
| <b>Gasket:</b>       | Nitrile (Buna N). Specially compounded NBR rubber to resist oil, acids alkalies, most (aliphatic) hydro-carbon fluids, water and many chemicals. Nominal temperature range from -20°F to 180°F.<br>Consult manufacturer for specific applications or other service temperatures. |
| <b>Bridge Plate:</b> | Stainless steel recessed flush and bonded into gasket.   |
| <b>Bolts:</b>        | High strength low-alloy steel (ANSI A21.11) with heavy semi-finished hexagon nuts ASTM A563. Optional 304 stainless steel bolts with fluoropolymer coated nuts to prevent galling.   |

Material specifications are subject to change.

| Band Width Inches | Number of Bolts | Bolt Sizes               |
|-------------------|-----------------|--------------------------|
| 7 1/2             | 6               | Drop-in lug 5/8" x 6"    |
| 12 1/2            | 10              | Closed lug 5/8" x 6 7/8" |



# 235 Tapped Full Circle® Repair Clamp

## Super Range Double Band



### 3/4" and 1" NPT Taps - Low Alloy Bolts and Nuts

| Standard         |                   |              |               | Catalog Number |                | Metric       |               |          |              |
|------------------|-------------------|--------------|---------------|----------------|----------------|--------------|---------------|----------|--------------|
| Nom. Size Inches | O.D. Range Inches | Width Inches | Wt. Each Lbs. | Catalog Number |                | Nom. Size MM | O.D. Range MM | Width MM | Wt. Each Kg. |
|                  |                   |              |               | 3/4" NPT/20 MM | 1" NPT/25 MM   |              |               |          |              |
| 4                | 4.44-5.24         | 7 1/2        | 18.6          | 235-045007-006 | 235-045007-008 | 100          | 113-133       | 190      | 8.4          |
|                  | 4.44-5.24         | 12 1/2       | 31.0          | 235-045012-006 | 235-045012-008 |              | 113-133       | 317      | 14.1         |
| 6                | 6.62-7.42         | 7 1/2        | 20.3          | 235-066307-006 | 235-066307-008 | 150          | 168-188       | 190      | 9.2          |
|                  | 6.62-7.42         | 12 1/2       | 33.9          | 235-066312-006 | 235-066312-008 |              | 168-188       | 317      | 15.4         |
|                  | 6.84-7.64         | 7 1/2        | 20.3          | 235-069007-006 | 235-069007-008 |              | 174-194       | 190      | 9.2          |
|                  | 6.84-7.64         | 12 1/2       | 33.9          | 235-069012-006 | 235-069012-008 |              | 174-194       | 317      | 15.4         |
| 8                | 8.62-9.42         | 7 1/2        | 22.0          | 235-086307-006 | 235-086307-008 | 200          | 219-239       | 190      | 10.0         |
|                  | 8.62-9.42         | 12 1/2       | 36.0          | 235-086312-006 | 235-086312-008 |              | 219-239       | 317      | 16.3         |
|                  | 8.99-9.79         | 7 1/2        | 22.0          | 235-090507-006 | 235-090507-008 |              | 229-248       | 190      | 10.0         |
|                  | 8.99-9.79         | 12 1/2       | 36.0          | 235-090512-006 | 235-090512-008 |              | 229-248       | 317      | 16.3         |
| 10               | 10.75-11.55       | 10           | 31.2          | 235-107510-006 | 235-107510-008 | 250          | 273-293       | 254      | 14.2         |
|                  | 10.75-11.55       | 15           | 47.4          | 235-107515-006 | 235-107515-008 |              | 273-293       | 381      | 21.5         |
|                  | 11.10-11.90       | 10           | 33.5          | 235-111010-006 | 235-111010-008 |              | 282-302       | 254      | 14.2         |
|                  | 11.10-11.90       | 15           | 42.5          | 235-111015-006 | 235-111015-008 |              | 282-302       | 381      | 21.5         |
| 12               | 12.75-13.55       | 12 1/2       | 33.0          | 235-127510-006 | 235-127510-008 | 300          | 324-344       | 254      | 15.0         |
|                  | 12.75-13.55       | 12 1/2       | 49.6          | 235-127515-006 | 235-127515-008 |              | 324-344       | 381      | 22.5         |
|                  | 13.20-14.00       | 12 1/2       | 34.5          | 235-132010-006 | 235-132010-008 |              | 335-355       | 254      | 15.0         |
|                  | 13.20-14.00       | 12 1/2       | 49.9          | 235-132015-006 | 235-132015-008 |              | 335-355       | 381      | 22.5         |

### 1 1/4", 1 1/2" and 2" NPT Taps - Low Alloy Bolts and Nuts

| Standard         |                   |              |               | Catalog Number   |                  |                | Metric       |               |          |              |
|------------------|-------------------|--------------|---------------|------------------|------------------|----------------|--------------|---------------|----------|--------------|
| Nom. Size Inches | O.D. Range Inches | Width Inches | Wt. Each Lbs. | Catalog Number   |                  |                | Nom. Size MM | O.D. Range MM | Width MM | Wt. Each Kg. |
|                  |                   |              |               | 1 1/4" NPT/32 MM | 1 1/2" NPT/40 MM | 2" NPT/50 MM   |              |               |          |              |
| 4                | 4.45-5.24         | 12 1/2       | 31.0          | 235-045012-010   | 235-045012-012   | 235-045012-014 | 100          | 113-133       | 317      | 14.1         |
| 6                | 6.62-7.42         | 12 1/2       | 33.9          | 235-066312-010   | 235-066312-012   | 235-066312-014 | 150          | 168-188       | 317      | 15.4         |
|                  | 6.62-7.42         | 12 1/2       | 33.9          | 235-069012-010   | 235-069012-012   | 235-069012-014 |              | 174-194       | 317      | 15.4         |
| 8                | 8.62-9.42         | 12 1/2       | 36.0          | 235-086312-010   | 235-086312-012   | 235-086312-014 | 200          | 219-239       | 317      | 16.3         |
|                  | 8.99-9.79         | 12 1/2       | 36.0          | 235-090512-010   | 235-090512-012   | 235-090512-014 |              | 229-248       | 317      | 16.3         |
| 10               | 10.75-11.55       | 10           | 31.2          | 235-107510-010   | 235-107510-012   | 235-107510-014 | 250          | 273-293       | 254      | 14.2         |
|                  | 10.75-11.55       | 15           | 47.4          | 235-107515-010   | 235-107515-012   | 235-107515-014 |              | 273-293       | 381      | 21.5         |
|                  | 11.10-11.90       | 10           | 33.5          | 235-111010-010   | 235-111010-012   | 235-111010-014 |              | 282-302       | 254      | 15.2         |
|                  | 11.10-11.90       | 15           | 47.5          | 235-111015-010   | 235-111015-012   | 235-111015-014 |              | 282-302       | 381      | 21.5         |
| 12               | 12.75-13.55       | 10           | 33.0          | 235-127510-010   | 235-127510-012   | 235-127510-014 | 300          | 324-344       | 254      | 15.0         |
|                  | 12.75-13.55       | 15           | 49.6          | 235-127515-010   | 235-127515-012   | 235-127515-014 |              | 324-344       | 381      | 22.5         |
|                  | 13.20-14.00       | 10           | 34.5          | 235-132010-010   | 235-132010-012   | 235-132010-014 |              | 335-355       | 254      | 15.6         |
|                  | 13.20-14.00       | 15           | 49.9          | 235-132015-010   | 235-132015-012   | 235-132015-014 |              | 335-355       | 381      | 22.6         |

NOTE: NOT recommended for PE pipe applications.