



General Information

Compare the ease of the Full Circle® method to split mechanical sleeves or replacing a section of pipe and you will be convinced Full Circle® is the best method!

Smith-Blair Full Circle Repair Clamps are flexible. Each clamp consists of one or more stainless steel bands with cast lugs securely attached to the bands. The lugs accommodate the bolts and nuts when mounting the clamp on the pipe.

Each clamp has a full encirclement, tapered, overlapping, gridded gasket with a flush mounted, bonded-in, stainless steel bridge plate that spans the band opening between the lugs and provides a full circumferential seal on the pipe.

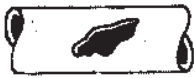
A Full Circle Repair Clamp is fast and simple to install and requires no special tools. The clamp is wrapped around the pipe, properly positioned over the area to be repaired or connected, and the bolts are then tightened. This installation compacts the rubber gasket tightly against the full circumference of the pipe wall forming a leak resistant seal.

Product Features

- Lower material and labor costs - Each size fits a range of pipe types within its range, and can be used for repair, joining or tapping.
- Less crew, equipment, excavation and scheduling complications once the damaged pipe is exposed; one man with a single wrench can easily make the repair.
- No need for extra pipe fittings; Flexible Full Circle Repair Clamps are able to conform to pipe irregularities and provide an efficient leak resistant seal.
- No need for complete line shutdown and possible contamination - Full Circle Repair Clamps can be installed quickly and easily. Tightening the centermost bolts will usually stop flow of gas and then the other bolts can be equally tightened.
- No special tools or skills required for installation.

The use of these clamps on PE pipe is not recommended!

Smith-Blair, Inc. Full Circle Repair Clamps solve these piping problems:



**Holes



***Cracks or splits



****Pin Holes



Pulled service connections or branch lines

**Holes should not exceed 1/3 the clamp width. When a section of pipe wall equal to 40-percent or more of the pipe's circumference is broken away, a section of sheet metal should be placed over the opening to provide a sealing surface for the gasket.

***Cracks and splits require a small hole be drilled at each end to prevent spreading . 1 inch of clamp width on both sides of the damaged area is required.

****Pin holes require 1 inch of clamp width on both sides of the damaged area.

Failures in gas piping both above and below ground present the operating gas utility with the problem of making repairs as rapidly as possible to remove the hazard. The use of Full Circle® Clamps permits utilities to perform fast and efficient repairs.

Leaks in cast iron, steel, or pvc pipe caused by corrosion, circumferential and longitudinal splits, porous weld, or punctures may be repaired economically with Full Circle® Clamps using only hand tools.

Both single and double band clamps are available. The selection of type is dependent upon which class of pipe is used by the utility. If the distribution system is primarily steel or cast iron, the single band clamp will meet most applications. Where both types of pipe are used, the double band clamp, which covers a wider O.D. range, is better suited. This clamp fits both kinds of pipe, thereby reducing the inventory required for emergencies.













Warning:

Full Circle® Repaired Clamps do not restrain axial pipe movement. Use of axial restraint device will be required.

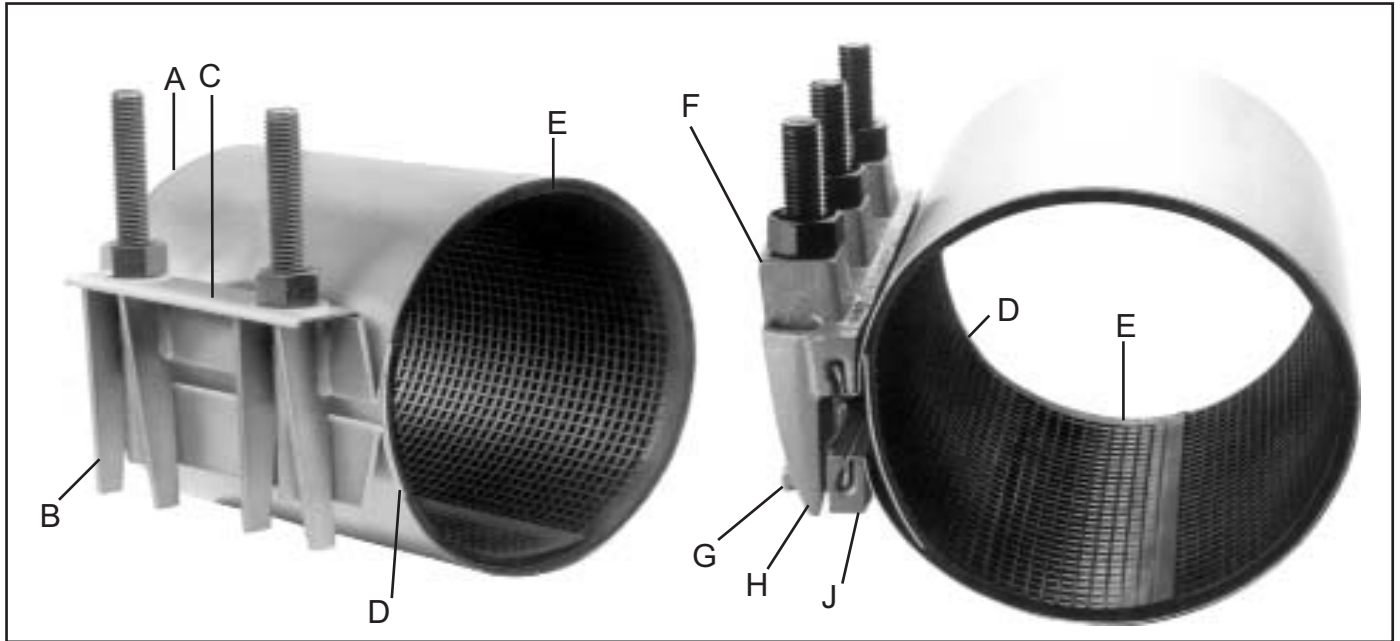
Note:

Smith-Blair Full Circle® Clamps comply with D.O.T. 192.717. When making repairs, the user should refer to D.O.T. 192 for recommended procedures.

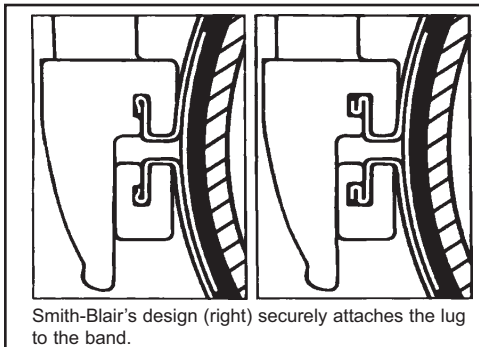
Selection Guide & Index

Clamp Type	Description	Metric Normal Sizes MM	Nominal Pipe Size	Working Press	Temp. Range	Page Number
 225	<i>Single Band</i> Band: Stainless Steel Lugs: Ductile Iron Gasket: Nitrile (Buna N) Bolts: Low Alloy	50 thru 350	2" thru 12" Over 12"	125 PSIG *100 PSIG	-20° F. To +180° F.	6-8
 225	<i>Double Band Super Range</i> Band: Stainless Steel Lugs: Ductile Iron Gasket: Nitrile (Buna N) Bolts: Low Alloy	80 thru 300	3" thru 12"	125 PSIG	-20° F. To +180° F.	9-10
 234	<i>Single Band</i> Band: Stainless Steel Lugs: Ductile Iron Gasket: Nitrile (Buna N) Bolts: Low Alloy Taps: NPT	80 thru 200	3" thru 8"	125 PSIG	-20° F. To +180° F.	11-12
 235	<i>Double Band Super Range</i> Band: Stainless Steel Lugs: Ductile Iron Gasket: Nitrile (Buna N) Bolts: Low Alloy Taps: NPT	100 thru 300	4" thru 12"	125 PSIG	-20° F. To +180° F.	12-13
 258	<i>Single Band</i> Band: Stainless Steel Lugs: Cast Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	50 thru 300	2" thru 12"	125 PSIG	-20° F. To +180° F.	15-16
 259	<i>Double Band Super Range</i> Band: Stainless Steel Lugs: Cast Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	80 thru 300	3" thru 12" Over 12"	125 PSIG *100 PSIG	-20° F. To +180° F.	17
 266	<i>Single Band</i> Band: Stainless Steel Lugs: Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	50 thru 300	2" thru 12"	100 PSIG	-20° F. To +180° F.	18-21
 266	<i>Double Band Super Range</i> Band: Stainless Steel Lugs: Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	80 thru 300	3" thru 12"	100 PSIG	-20° F. To +180° F.	22-23
 266	<i>Single Band</i> Band: Stainless Steel Lugs: Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel Taps: NPT	80 thru 200	3" thru 8"	100 PSIG	-20° F. To +180° F.	23-24
 266	<i>Double Band Super Range</i> Band: Stainless Steel Lugs: Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel Taps: NPT	100 thru 300	4" thru 12"	100 PSIG	-20° F. To +180° F.	25
 267	<i>Single Band</i> Band: Carbon Steel Lugs: Carbon Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	100 thru 600	4" thru 24"	4.50-14.25 225 PSI 15.30-25.80 150 PSI	-20° F. To +180° F.	26-28
 268	<i>Single Band</i> Band: Stainless Steel Lugs: Stainless Steel Gasket: Nitrile (Buna N) Bolts: Stainless Steel	100 thru 600	4" thru 24"	4.50-14.25 225 PSI 15.30-25.80 150 PSI	-20° F. To +180° F.	26-28
*Catalog sizes only.		Polywrap Kit Selection and Application Tips	Page 10 Page 32	Installation Instructions	Pages 29-31	

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 circumferential 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.



Electrical Conductivity Buttons

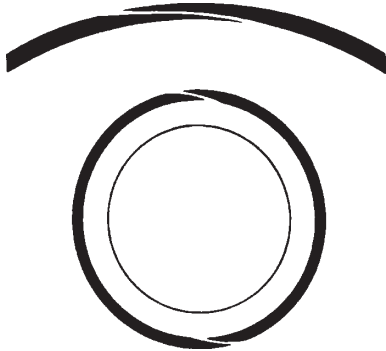
Copper electrical conductor buttons are available for most 200 series Full Circle Repair Clamps for Gas Service. Factory installed conductor buttons are glued between the gasket and the stainless steel band with contact buttons protruding through specially prepared gaskets to accommodate cathodic protection.

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.

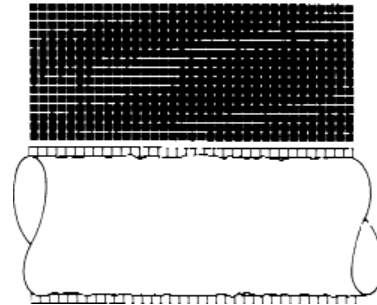
Smith-Blair Repair Clamps seal positively and effectively

Tapered and Lapped Gaskets



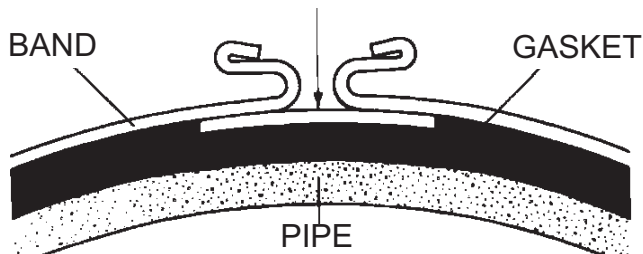
Smith-Blair tapered, lapped gaskets provide a continuous and uniform seal over the full O.D. range of the clamp.

Finely Grided Gasket



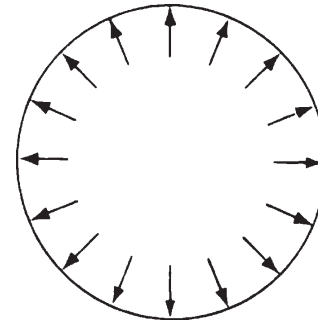
Smith-Blair finely grided gaskets have 16 grids to the square inch; form a series of dams to conform to irregularities on the pipe surface; and seal effectively against rough or pitted surfaces to prevent development of a leak path.

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 surface, which insures a 100% encirclement of uniform gasket pressure. A dependable method of sealing.

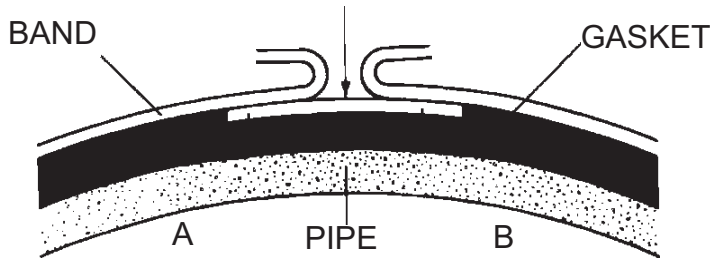
Uniform Distribution of Gasket Pressure



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

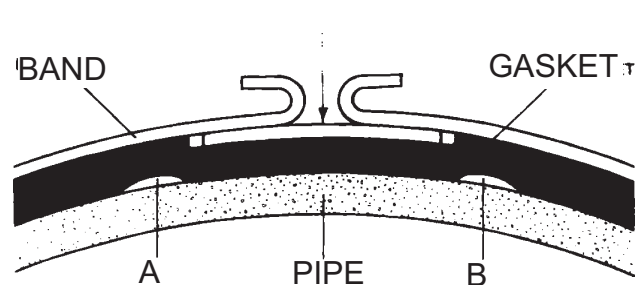
Other Methods of Bridge Plate

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.