JCM 102 ExtendedUniversal Clamp Couplings

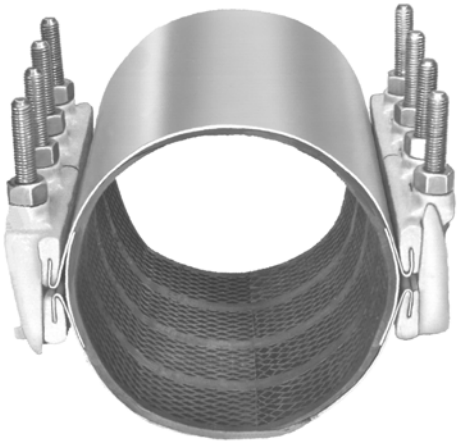
JCM 102 Extended Range Universal Clamp Coupling - Double/Multi-Band
JCM 102 Extended Range Universal Clamp Couplings are designed especially for systems with both asbestos-cement and cast iron pipe, or with oversized pipe. This extended range, multi-band clamp provides a full circumferential seal and extra wide range. Only 6 clamps are needed to fit all cast-iron and asbestos-cement pressure pipe in sizes 4” through 12”. Extra range and safety factor make this clamp particularly suited for pipe sizes 10” and larger.

JCM 102 Extended Range/Multi-Band clamps are designed to accommodate the working characteristics of large diameter pipe. In the repair applications to large diameter pipe, there are several factors to be considered to maintain pipe integrity and return to 100% service capacity. Factors which are critical to the application include: size and type of pipe, severity of damage, working pressure or service requirements, location or repair and time factor. JCM 102 UCC design criteria accommodate these factors by providing the following strength features...

Heavy Duty Lug - and positive fastener attachment provides the safety factor and solid platform to support the increased bolt torque levels required to compress the gasket and seal the damaged area.

Large Bolts - supply bolting power and high torque ability to fully compress the full circumferential gasket.

Thick Stainless Steel Band - increases pressure holding capability and provides even, consistent compression over the gasket area.



JCM 102 Extended Range Universal Clamp Couplings

Double Band Clamps

NOM. PIPE SIZE (IN.)	CLAMP O.D. RANGE (IN.)	WIDTH	CLAMP NUMBER	APPR. WT. EA. (LBS.)
4	4.44 - 5.24	6 7-1/2 12 15 18 30	102-0450- 6 102-0450- 7 102-0450-12 102-0450-15 102-0450-18 102-0450-30	16 20 32 40 48 80
4	4.74 - 5.57	6 7-1/2 12 15 18 30	102-0480- 6 102-0480- 7 102-0480-12 102-0480-15 102-0480-18 102-0480-30	16 20 32 40 48 80
6	6.62 - 7.42	6 7-1/2 12 15 18 30	102-0663- 6 102-0663- 7 102-0663-12 102-0663-15 102-0663-18 102-0663-30	16 20 32 40 48 80
6	6.84 - 7.64	6 7-1/2 12 15 18 30	102-0690- 6 102-0690- 7 102-0690-12 102-0690-15 102-0690-18 102-0690-30	16 20 32 40. 48 80
8	8.62 - 9.42	6 7-1/2 12 15 18 30	102-0863- 6 102-0863- 7 102-0863-12 102-0863-15 102-0863-18 102-0863-30	17 21 34 43 51 85
8	8.99 - 9.79	6 7-1/2 12 15 18 30	102-0905- 6 102-0905- 7 102-0905-12 102-0905-15 102-0905-18 102-0905-30	17 21 34 43 51 85
10	10.72 - 11.72	12 18 30	102-1075-12 102-1075-18 102-1075-30	53 80 132
10	11.04 - 12.24	12 18 30	102-1110-12 102-1110-18 102-1110-30	53 80 132
12	12.72 - 13.92	12 18 30	102-1275-12 102-1275-18 102-1275-30	55 80 138
12	13.14 - 14.34	12 18 30	102-1320-12 102-1320-18 102-1320-30	55 83 138
12	13.65 - 14.65	12 18 30	102-1365-12 102-1365-18 102-1365-30	55 83 138

Double Band Clamps

NOM. PIPE SIZE (IN.)	CLAMP O.D. RANGE (IN.)	WIDTH	CLAMP NUMBER	APPR. WT. EA. (LBS.)
14	15.20 - 16.20	12 18 30	102-1530-12 102-1530-18 102-1530-30	58 87 145
14 - 16	16.00 - 17.00	12 18 30	102-1600-12 102-1600-18 102-1600-30	59 89 148
16	17.20 - 18.20	12 18 30	102-1740-12 102-1740-18 102-1740-30	60 90 150
16 - 18	18.40 - 19.40	12 18 30	102-1846-12 102-1846-18 102-1846-30	62 93 155
18 - 20	19.40 - 20.40	12 18 30	102-1950-12 102-1950-18 102-1950-30	63 95 158
18 - 20	20.40 - 21.40	12 18 30	102-2050-12 102-2050-18 102-2050-30	64 97 161
20 - 22	21.40 - 22.40	12 18 30	102-2160-12 102-2160-18 102-2160-30	66 99 165
20 - 22	22.50 - 23.60	12 18 30	102-2260-12 102-2260-18 102-2260-30	67 101 168

Multi-Band Clamps

24	23.80 - 25.00	12 18 30	102-2400-12 102-2400-18 102-2400-30	88 132 220
24	25.50 - 26.70	12 18 30	102-2580-12 102-2580-18 102-2580-30	90 135 225
24	27.90 - 29.10	12 18 30	102-2800-12 102-2800-18 102-2800-30	93 140 233
24 - 30	29.80 - 31.00	12 18 30	102-3000-12 102-3000-18 102-3000-30	96 144 240
30	31.70 - 32.90	12 18 30	102-3200-12 102-3200-18 102-3200-30	98 147 245
36	37.85 - 39.20	12 18 30	102-3830-12 102-3830-18 102-3830-30	117 175 292

JCM Universal Clamp Couplings

WIDTH SELECTION - 101 & 102 UNIVERSAL CLAMP COUPLINGS

JCM Universal Clamp Couplings are available in a great many widths. Because these clamps utilize a heavier gasket and bolting arrangement than most comparable clamps, when you use JCM Universal Clamp Couplings significant savings are possible. The following general recommendations are offered to assist you in taking advantage of the design benefits of these clamps. Specific circumstance may require widths other than these general recommendations.

6” Width:	Best and most economical width to repair most beam breaks and to connect pipe in sizes 4” and smaller. Short length with thicker gasket give outstanding deflection capability. Recommend 2” of gasket on both sides of the break.
7-1/2” Width:	Best for Asbestos Cement coupling replacements, beam breaks and connection of pipe in sizes 6” and larger.
12” Width:	Best for longer breaks, repairs on working pressure above 150 PSI and for larger sizes of pipe.
15, 18, 24, 30” and longer widths:	Best for long splits and heavily damaged pipe. For best performance the separation between pipe ends should be no more than 1/2”. If the space is larger, or a large hole is being repaired, use a sheet of stainless steel over the hole under the gasket or a spacer to fill gap between pipe ends.

MATERIAL SPECIFICATIONS - JCM 102 Universal Clamp Couplings

BAND:	Type 304 Stainless Steel
LUGS:	Ductile Iron ASTM A-536
BOLTS:	Corrosion resistant low alloy per AWWA C-111, ANSI A21.11. Optional Stainless Steel 18-8 Type 304.
GASKET:	Compounded for use with water, salt solutions, mild acids and bases. Other gaskets available upon request.

JCM 101 and 102
Universal Clamp Couplings
Typical Specifications

JCM 101 Universal Clamp Couplings - JCM 102 Multi-Band Clamps (sizes 4” through 8”)

All full circumferential single and multi-band repair clamps 1-1/2” and larger shall have a minimum material standard of certifiable prime 304 Stainless Steel band; heavy duty, low profile Ductile Iron Lugs (ASTM A536) with mutually supporting sliding fingers; 5/8” corrosion resistant alloy bolts, per AWWA Standard C-111, ANSI 21.11, (or Stainless Steel 18-8 Type 304 bolts) and 1/4” thick gridded gasket with tapered lap joint ends and a 304 stainless steel quarter hardened bridge plate molded flush into the gasket. To provide extra tightening capability, the band shall be permanently attached to the lugs by crimping the lug and locking it in place with a minimum of three stainless welds per lug. Clamp shall be similar to JCM 101 Universal Clamp Coupling, JCM 102 Universal Clamp Coupling or approved equal.

JCM 101 Universal Clamp Couplings - JCM 102 Multi-Band Clamps (sizes 10” and larger)

All full circumferential single and multi-band repair clamps 10” and larger shall have a minimum material of 17 gauge certifiable prime 304 Stainless Steel band; heavy duty Ductile Iron Lugs (ASTM A536) with mutually supporting sliding fingers; 3/4” corrosion resistant alloy bolts, per AWWA Standard C-111, ANSI 21.11, (or Stainless Steel 18-8 Type 304 bolts) and a 1/4” thick gridded gasket with tapered lap plate molded flush into the gasket. To provide extra tightening capability, the band shall be permanently attached to the lugs. The attachment shall withstand a minimum of 100 ft. lbs. of torque per bolt. Clamp shall be similar to JCM 101 Universal Clamp Coupling, JCM 102 Universal Clamp Coupling or approved equal.

JCM 100 Series Universal Clamp Couplings are ANSI/NSF Standard 61 Certified.

JCM Industries, Inc./P. O. Box 1220 / Nash, TX 75569-1220

JCM 101 and 102
Universal Clamp Couplings
Material Specifications

JCM UNIVERSAL CLAMP COUPLINGS

BAND: Type 304 Stainless Steel

LUGS: Ductile Iron ASTM A-536

BOLTS: Corrosion resistant low alloy per AWWA C-111, ANSI A21.11.
Optional Stainless Steel 18-8 Type 304.

GASKETS: Compounded for use with water, salt solutions, mild acids and bases. Other gaskets available upon request.

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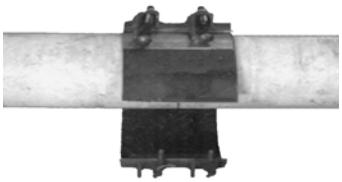
JCM

JCM UNIVERSAL CLAMP COUPLINGS
Installation Instructions
(101, 102, 103, 104)

1. Clean and scrape pipe. Remove any dirt or debris that would interfere with the complete sealing of the gasket around the pipe. Lubricate the pipe with soapy water. **Do not use oil base pipe lubricant.** *Trick of the Trade: Place a mark on the pipe to each side of the damaged area equal to the width of the clamp. This presents a visual mark to center the repair clamp over the damage area (1/2 of this distance is center).*

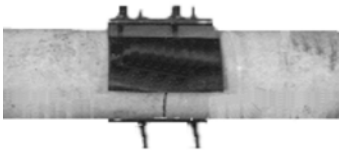
2. Inspect pipe for integrity, size and outside diameter. Confirm the proper size and range of repair clamp.

   For Models 101, 103 - Place clamp on pipe and center over damaged area.



101, 103

   For Models 102, 104 - Place clamp half without bolts on pipe so that gasket flap is on top facing you.

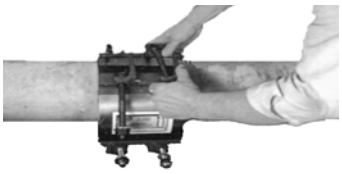


102, 104

3. **For Models 101, 103** - Tuck tapered gasket in place, mesh finger lugs and rotate clamp in direction of arrow to smooth tapered gasket flap. Engage bolts and tighten finger tight to hold in place.

101, 103

   For Models 102, 104 - Take half with bolts and turn gasket side up so that bolts slide back out of the way of fingers. Feed bottom tapered gasket end into place, mesh top lug fingers and engage bolts. Rotate clamp in direction of arrow to smooth gasket flaps Engage remaining bolts and tighten finger tight to hold in place. NOTE: Gaps between lugs should be approximately even on both sides.



102, 104

4. Tighten all bolts evenly to the following torque values:

   5/8" Bolts to 70 Foot Pounds
   3/4" Bolts to 90 Foot Pounds

5. Complete installation of fitting and confirm minimum bolt torque levels have been maintained. For JCM 103 and 104 Tapped Clamps, proceed with tapping process.

Universal Clamp Coupling Installation “Tricks of the Trade

Years of field experience, special applications and product testing have revealed many subtleties regarding application and installation of repair clamps. For maximum performance under adverse conditions take advantage of the JCM “Tricks of the Trade.”

- Always clean and lubricate pipe with water or soapy water. This will help overcome friction when rotating the clamp to smooth the gasket. Do not use oil base pipe lubricant.
- Place a reference mark on the pipe back from the damaged area to help in centering clamp over break. Clamp provide maximum performance when centered over damage area.
- Breaks involving deflected pipe require a wider clamp. JCM lugs will articulate, permitting clamp to better conform to pipe.
- Damage involving large holes or massive pitted areas - use stainless steel or galvanized metal plate over large holes (under repair clamp) to provide the gasket something to seal against.
- Drill holes in the ends of splits or cracks to relieve forces which could cause splits to continue.
- Clamp performance drops when gap between pipe ends is larger than 1/2”. Use a stainless steel spacer to fill or to place over gap.
- Leave sufficient pressure on a broken line to prevent intrusion of foreign matter to prevent excessive line contamination.
- With pressure reduced, spraying water will cease as soon as water level rises above break.
- Lubricating clamp bolts will ease clamp installation and assure proper torquing of bolts.

Making Larger Clamp From Smaller Clamps

Longer than normal gasket tapers permit joining of Universal Clamp Couplings of like width and type to make a larger clamp. For instance, a 6” and 8” clamp can be joined to make a 14” clamp. This provide you with “on hand” capability to make repairs on larger pipe sizes.

- Determine which clamps are available to make needed clamp, usually 2 or 3 clamps are sufficient. It is recommended that clamps to be joined be not more than one nominal size apart. Join clamps with ranges that when combined include O.D. of pipe to be repaired. For Example: Required clamp is 14” to fit 16.44 O.D. Combining a 101-0905-12 (range 8.99 to 9.39) and a 101-0690-12 (range 6.84 to 7.25) will make a clamp with a range of 15.84 to 16.64.
- Prior to joining clamps, reduce the curvature of the recessed bridge plate (as shown in photo) to slightly less than curvature of pipe to be repaired. This is done by laying bridge plate between two 2” x 4”’s and hitting with a small sledge hammer.
- Install as a multi-band clamp, making sure to tighten bolts evenly keeping gaps between lugs approximately even.