



Top Bolts

Featuring Double-Acting Bolt Technology



24"

**ALL DOUBLE-ACTING
MODELS USE STANDARD
DEPTH SOCKETS!**



16"



6" - 12"

Effects Of Friction, Heat and Galling Are Mitigated With Patented Double-Acting Bolts.



(Left) In a laboratory test, conventional bolt tightening generated friction resulting temperature of 239°F, while Smith-Blair's Double-Acting bolt (Right) tightened the same way, reached only 107°F. The Double-Acting Bolt closes at twice the rate of a conventional bolt/nut system. That means faster installations, less frictional heat and reduced opportunities for galling.

Armor Ridges and Grooves Add Up To Smooth



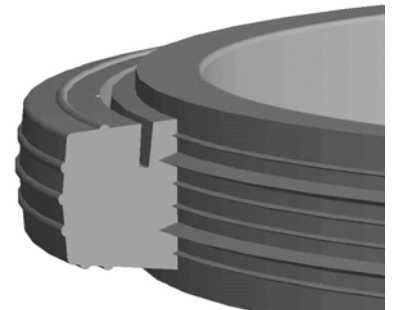
Friction can be an absolute killer between gasket surfaces and armor.

That is why Smith-Blair's unique corrugated armor was designed. It reduces friction to make gasket seating smoother and easier. As importantly, it can

prevent gouging of epoxy coated surfaces so rust can't get a starting point.

Patented Interlocking Gasket Makes Pipe Ranging Errors—Well—Irrelevant.

We are proud of our unique, patented interlocking gasket channels that can easily be removed to increase range and put back if there is a miscalculation on the job and who doesn't have those? No additional tools required.



Not Just Talk, Top Bolt's U. S. Patented Technologies

- 8,528,945 is for Corrugated Armor (All Top Bolts)
- 8,789,832 is for Removable Gasket (All Top Bolts)
- 8,776,351 is for Split Ring Gland (2"-12")
- 9,791,077 is for Double-Acting Bolt (6" and up)

Material Specifications (subject to change)

SLEEVE: Carbon Steel
FLANGES: Carbon Steel
ARMOR: Quarter Hard 304 Stainless Steel
GASKET: Nitrile (Buna N)
BOLTS: Type 304 Stainless with Anti-Gall Coating
NUTS: Type 304 Stainless or Equivalent
FINISH: Flexi-Coat Fusion Bonded Coating



For complete details about the new Top Bolts With Double-Acting Bolt Technology, visit:

www.smith-blair.com



Top Bolt Wide-Range Couplings

Now Featuring Double-Acting Bolt Technology (in 6" & greater)

421

422

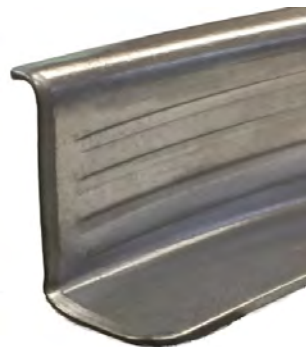
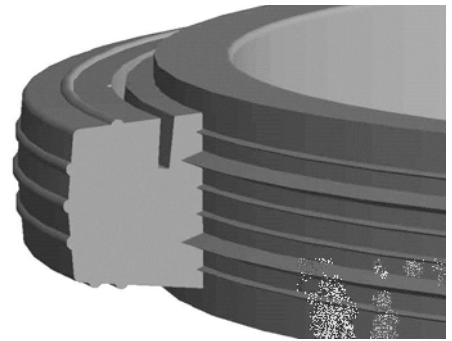
921

The perfect combination of patented solutions for the not so perfect worlds of water and wastewater applications.



Double-Acting Bolt

**Removable/
Replaceable Gasket**



Corrugated Armor

**Split Ring Glands
(Select Models)**



Top Bolt Quick Facts

Description:	A family of sophisticated coupling products featuring four United States Patents for its double-acting bolt system, corrugated armor, split ring gland (select sizes) and removable/replaceable channeled inner gasket making Top Bolt the most advanced rapid pipeline coupling system available in the water and wastewater markets.
Applications:	Joining plain-end pipe of the same or different outside diameters or to replace split excessively damaged pipe.
Standard Sizes:	421 Coupling : 2"-12" nominal; 10" & 12" Oversize; 16" & 24" available 422 Long Sleeve Coupling: 2"-12" nominal 921 FCA: 2"- 12" nominal
Working Pressures:	421 Coupling : 2"-12" nominal 260 PSI; 16" & 24" DI Size Pipe 260 PSI; 16" & 24" IPS Size Pipe 150 PSI 422 Long Sleeve Coupling: 2"-12" nominal 260 PSI 921 FCA: 2"- 12" nominal 175 PSI
Pipe Applications:	Steel, PVC, Ductile Iron, Asbestos-Cement, and Copper Tube sizes
Key Features:	Double Acting Bolt System: Counter rotating threads at each end of bolt close simultaneously causing flanges to close at twice the rate of other systems. The system also reduces friction and heat to reduce opportunities for galling. Removable/Replaceable Gasket: Channeled inner gasket is easily removed by hand (no special tools required) to get to upper range. If a ranging mistake is made, the inner channel may be re-inserted to return the coupling to its lower range without having to install a new gasket. Corrugated Armor: The ridges and grooves of the corrugated armor reduces friction and heat and provides for smooth flange tightening. Split Ring Gland: If flanges need to be opened and inspected, Top Bolt's unique split ring flange (on select sizes) make taking flanges down into parts and allows easy reassembly after inspections Stab Fit Pipe Insertion: Easy slide stab fitting makes Top Bolt the easiest coupling products for quick, trouble-free installations.
Materials Specifications:	Sleeve: Carbon Steel Flanges: Carbon Steel Armor: Quarter Hard 304 Stainless Steel Gasket: Nitrile (Buna N) Bolts: Type 304 Stainless Steel Nuts: Type 304 Stainless Steel Finish: Flexi-Coat Fusion Bonded Epoxy
U. S. Patents:	8,528,945; 8,776,351; 8,789,832; 9,791,077
Certifications:	UL Certified NSF/ANSI 61 & 372
Warnings:	Products do not restrain pipe movement; proper anchoring required. Read all installation instructions before installing Top Bolt or any other Smith-Blair product. Visit smith-blair.com for details.





Top Bolt Couplings

With Double-Acting Bolt Technology (6" and larger)

PATENT NO. 8,528,945 / 8,776,351 / 8,789,832

421



Double-acting bolts close in two directions at once, lowering installation times.



THIS PRODUCT DOES NOT RESTRAIN PIPE MOVEMENT. Proper anchoring is required to prevent pipe pullout. Failure to anchor or improper anchoring can result in dangerous pipe content escape, property damage, serious injury, or death. Read the product installation instructions prior to installing this product.

Description: Two bolt, stab fit coupling featuring removable/replaceable inner gaskets to expand range of product and reduce number of SKUs that must be stocked.

Application: Joining plain end pipe

Key Features:

- Double-acting bolt technology closes flange in two directions at once, lowering installation times
- Removable inner gasket for larger O.D.s
- Bi-directional inner gasket can be reinstalled
- Corrugated armor — reduces friction between gasket and armor, thus allowing better gasket seating; prevents armor from gouging flange finish, thus reducing possible corrosion point
- Wide range - Up to 1.31 inches
- Reduces inventory by having wide range
- Deflection 4° per end
- Lightweight
- Stab insertion of pipe ends
- Corrosion resistant Flexi-Coat® Epoxy Finish
- Coated 304 Stainless Steel hardware and fluoropolymer coated nuts to reduce galling
- Connectors available for additional corrosion protection using anodes
- Easily disassembled when necessary

Materials Specifications (subject to change)

SLEEVE: Carbon Steel

FLANGES: Carbon Steel

ARMOR: Half hard 304 Stainless Steel

GASKET: Nitrile (Buna N)

BOLTS: Type 304 Stainless Steel with Flexi-Coat® Fusion Bonded Epoxy Finish

NUTS: Heavy hex Type 304 Stainless Steel with fluoropolymer finish to prevent galling

FINISH: Flexi-Coat® Fusion Bonded Epoxy Finish

Working Pressure: Up to 260 PSI

Pipe Applications: Steel, PVC, Ductile Iron, Asbestos Cement, Copper tube and HDPE (with stiffener).

Sizes (in inches): 2, 3, 4, 6, 8, 10, 12, 10 oversize and 12 oversize, 16, 24



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Standard

NOM SIZE (IN)	CATALOG NUMBER	OVERALL RANGE	LOWER RANGE (IN)	UPPER RANGE (IN)	WIDTH (IN)	HEIGHT (IN)	SLEEVE LENGTH (IN)	LAYING LENGTH (IN)	MAXIMUM GAP (IN)	APPROX. WEIGHT (LBS)
2	421-02130295-031	2.13-2.95	2.13-2.60	2.50-2.95	5.38	7.25	4	7.50	1	9
3	421-03100420-031	3.10-4.20	3.10-3.56	3.70-4.20	6.88	8.38	6	9.50	2	12
4	421-04460560-031	4.46-5.60	4.46-5.05	5.00-5.60	8.75	10.00	6	9.75	2	19
6	421-06560760-031	6.56-7.60	6.56-7.05	7.00-7.60	10.88	12.13	8	11.75	4	27
8	421-08540985-031	8.54-9.85	8.54-9.15	9.15-9.85	13.13	14.38	8	11.75	4	34
10	421-10641183-031	10.64-11.83	10.64-11.18	11.13-11.83	15.50	16.50	8	11.75	4	40
12	421-12621367-031	12.62-13.67	12.62-13.06	13.10-13.67	17.63	18.75	8	11.75	4	47
10 OS*	421-10641220-031	10.64-12.20	10" Side: 10.64-11.18	10" Side: 11.13-11.83	16.13	17.25	8	11.75	4	42
			10 OS Side: 11.05-11.56	10 OS Side: 11.56-12.20						
12 OS*	421-12621440-031	12.62-14.40	12" Side: 12.62-13.06	12" Side: 13.10-13.67	18.50	19.38	8	11.75	4	49
			12 OS Side: 13.14-13.78	12 OS Side: 13.73-14.40						
16	421-16001785-031	16.00-17.85	16.00-16.50	17.35-17.85	22.00	24.00	9	12.63	4	80
24	421-24002632-031	24.00-26.32	24.00-24.80	25.25-26.32	30.31	33.00	9	12.63	4	120

*OS sizes show two different lower and upper ranges: the range on top shows the range of the standard coupling end and the range on bottom shows the range of the oversized coupling.