Installation Instructions

411, 413, 415, 416, 417, 418, 441, 442, 461, 462, 481, & 482 Couplings

Pipe stiffeners are required when using these products on polyethylene (P.E. pipe).

Disassembly of 461 & 462 Quantum couplings are not required.

STEP 1
Clean working area of pipe end(s).

STEP 2
Place coupling flange(s) on pipe end(s). If installing an insulating coupling, place insulating boot(s) on pipe end(s).

STEP 3
Lubricate the pipe surface and gasket(s) using a soap and water solution (anti-freeze may be required). All lubricant solutions should meet the requirements of the water and pipe supplier. Slide gasket(s) over pipe end(s). Beveled edge of gasket(s) should face pipe end(s).

STEP 4
Position coupling sleeve over pipe end(s). See reverse for recommended pipe to pipe gap or stab depth.

STEP 5
Slide gasket(s) against sleeve followed by flange(s). Install the bolts and hand-tighten the nuts. If carriage bolts are furnished, alternate direction of the bolts.

STEP 6
Gradually tighten nuts to proper torque values listed below, alternating between opposite sides of the coupling to ensure flange(s) remain parallel. Tighten both nuts if studs are used.

STEP 7
Recheck torque after line pressurization.

Recommended Bolt Torque	
7/16” Bolts	25 ft-lb
1/2” Bolts	35 ft-lb
5/8” Bolts	70 ft-lb
3/4” Bolts	95 ft-lb

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

CORROSION & PRODUCT SELECTION NOTICE

Metal products are subject to corrosion, particularly when used outdoors and/or underground. A large number of factors and local conditions affect the rate of corrosion. Consult a local corrosion expert to determine the life expectancy of this product when used with your pipeline content, soil, and environment. Also, consult your system designer to determine the suitability of this product in your piping system. Failure to determine the suitability of this product in your application, soil, and/or environment can result in premature product failure. Smith-Blair will provide additional information about this product’s material specifications at your request. You may also obtain product information at www.smith-blair.com.

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Installation Instructions

411, 413, 415, 416, 417, 418, 441, 442, 461, 462, 481, & 482 Couplings

Recommended Pipe to Pipe Centerline Gaps*

Sleeve Length	Optimum Gaps		Maximum Gap
	Straight Run	Deflected Joints	
4”	1/2"	3/4"	1-1/2”
5” to 6”	1/2”	1”	2”
7” to 7-1/2”	1/2”	1-1/2”	3”
10”	1”	2-1/4”	4-1/2”
Longer Than 10”	1”	2-3/4”	"Sleeve Length" – 6”

**Pipe gap to be centered in coupling sleeve when applicable*

**See 415 Specification for Recommended Centerline Stab Depths*

**For 481 maintain at least 2” of stab depth; For 482 maintain at least 3” of stab depth*

Total Maximum Allowable Axial Pipe Movement per Coupling

Nominal Pipe Size	Allowable Movement
1/2" to ≤ 2"	1/8"
> 2" to ≤ 10"	1/4"
> 10”	3/8"

Pipe End Diameter Tolerances

Nominal Pipe Size	Minus Tolerance	Plus Tolerance
1/2" to ≤ 16"	-0.06	+0.06
> 16" to ≤ 24"	-0.08	+0.08
> 24" to ≤ 42"	-0.10	+0.10
> 42"	-0.06	+0.12

Maximum Angular Deflection per Coupling**

Nominal Pipe Size	Center Sleeve Length		
	5"	7"	10" and Larger
1/2" to ≤ 2"	7°	7°	7°
> 2" to ≤ 12"	4°	4-1/2°	4-1/2°
> 12" to ≤ 24"	2-1/2°	4°	4-1/2°
> 24" to ≤ 36"	-	3-1/2°	4°
> 36" to ≤ 42"	-	3°	3-1/2°
> 42" to ≤ 60"	-	2-1/2°	3°
> 60" to ≤ 80"	-	-	2-1/2°
> 80" to ≤ 100"	-	-	2°
> 100"	-	-	-

****418 Tee Maximum Angular Deflection per Coupling 4°**

****441 & 442 OMNI Maximum Angular Deflection per Coupling 4°**

****461 & 462 Quantum Maximum Angular Deflection per Coupling 3°**