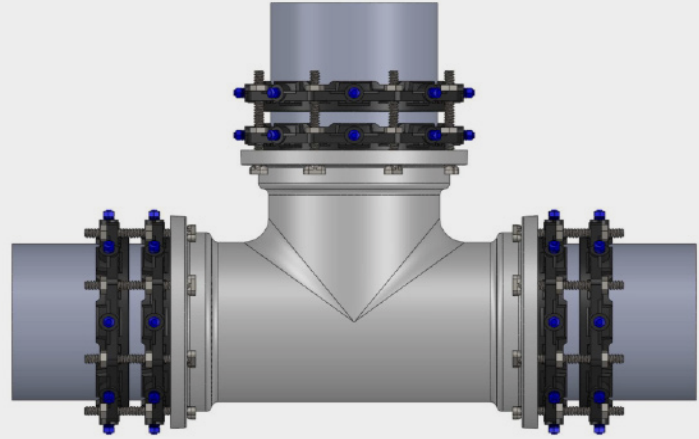
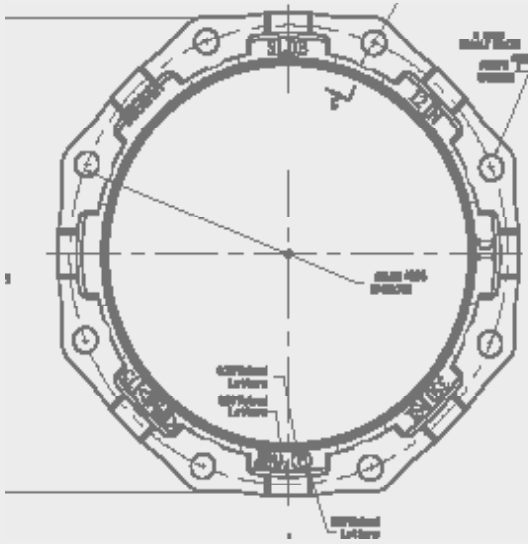


## ONE-LOK™ Tandem T-SLDE Restraint for High Pressure Ductile Iron Pipe



### **ONE-LOK Model T-SLDE**

*Tandem Wedge-Action Restraint for High Pressure for Mechanical Joint Connections to Ductile Iron Pipes*

#### **Features & Advantages:**

- 1) Available in sizes 4" through 48" for ductile iron pipe.
- 2) Provides high pressure ductile iron pipeline capacity.
- 3) Incorporates machined break-off top actuating bolts for precise and consistent fracture.
- 4) SigmaSeal™ mechanical joint gaskets provided with each nominal restraint assemblies to accommodate the pressure ratings and applicable safety factors.
- 5) Minimum 2:1 factor of safety on all nominal sizes.
- 6) Uses high strength, low alloy t-head bolts and threaded restraining rods with heavy hex nuts in accordance with AWWA/ANSI A21.11/C111 – latest revision.

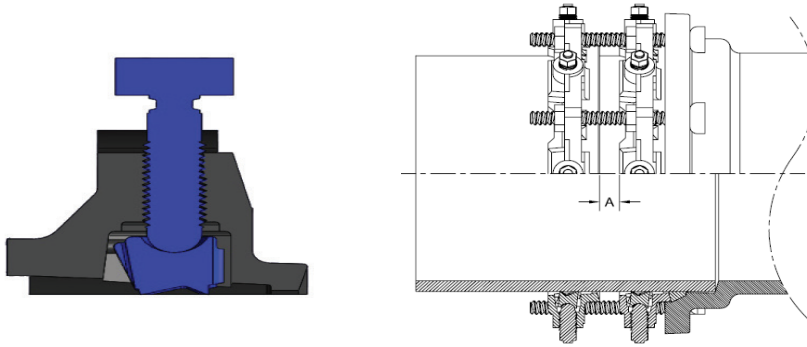
# ONE-LOK™ Tandem T-SLDE Restraint for High Pressure Ductile Iron Pipe

## Sample Specification:

Proper restraint of high pressure ductile iron pipelines shall consist of two wedge-action restraining glands used to secure the ductile iron plain-end pipe to a mechanical joint fitting or appurtenance. The restraining glands, wedge segments and break-off top actuating bolts shall be manufactured in accordance with ASTM A536, grade 65-45-12. Wedge segments shall be heat-treated to a minimum hardness of 370 BHN. The restraining glands shall incorporate the required extra-long t-head bolts/heavy hex nuts or threaded restraining rods/heavy hex nuts in accordance with AWWA/ANSI A21.11/C111. The restraining glands shall provide a minimum 2 to 1 factor of safety and be Sigma Tandem Series T-SLDE or approved equal.

## Materials:

- Gland body, brackets, or restraining rods & nuts, wedge segments & actuating bolts: ASTM A536 65-45-12 ductile iron.
- Wedge segments are heat treated to a minimum hardness of 370BHN
- T-head bolts & nuts: High strength, low alloy steel meeting AWWA/ANSI C111/A21.11 with minimum 65,000psi tensile strength and 45,000psi yield strength.



## Dimensions in Inches, Weights in Pounds

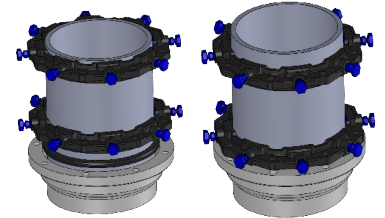
NOMINAL PIPE SIZE	PART #	WEIGHT/ LBS	PIPE OD	DIMENSION "A" (IN)	INSERTS			T-BOLTS & NUTS ***			Pressure Rating	
					NO	SIZE	TORQUE	SIZE (IN)	QTY	SIZE		QTY
4	T-SLDE 4	13	4.80	1.0	4	7/8	80 -90 ft-lbs	3/4 x 7	4	3/4"	8	700 PSI
6	T-SLDE6	20	6.90	1.0	6	7/8	80 -90 ft-lbs	3/4 x 7	6	3/4"	12	700 PSI
8	T-SLDE 8	29	9.05	1.0	8	7/8	80 -90 ft-lbs	3/4 x 7	6	3/4"	12	700 PSI
10	T-SLDE 10	46	11.10	1.0	12	7/8	80 -90 ft-lbs	3/4 x 7	8	3/4"	16	700 PSI
12	T-SLDE 12	58	13.20	1.0	16	7/8	80 -90 ft-lbs	3/4 x 7	8	3/4"	16	700 PSI
14	T-SLDE 14	79	15.30	1.0	20	7/8	80 -90 ft-lbs	3/4 x 7	10	3/4"	20	700 PSI
16	T-SLDE 16	99	17.40	1.0	24	7/8	80 -90 ft-lbs	3/4 x 9	12	3/4"	24	700 PSI
18	T-SLDE 18	121	19.50	1.0	24	7/8	80 -90 ft-lbs	3/4 x 9	12	3/4"	24	400 PSI
20	T-SLDE 20	138	21.60	1.0	28	7/8	80 -90 ft-lbs	3/4 x 9	14	3/4"	28	400 PSI
24	T-SLDE 24	207	25.80	1.0	32	7/8	80 -90 ft-lbs	3/4" x 11"	16	3/4"	48	400 PSI
30	T-SLDE 30	317	32.00	1.0	40	1	115-125 ft-lbs	1" x 13"	20	1"	60	350 PSI
36	T-SLDE 36	469	38.30	1.0	48	1	115-125 ft-lbs	1" x 13"	24	1"	72	350 PSI
42	T-SLDE 42	688	44.50	1.0	56	1 1/4	115-125 ft-lbs	1 1/4" x 15"	28	1 1/4"	84	350 PSI
48	T-SLDE 48	912	50.80	1.0	64	1 1/4	115-125 ft-lbs	1 1/4" x 15"	32	1 1/4"	96	350 PSI

*Sigma Seal gasket is provided for high pressure applications*

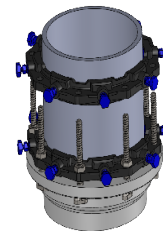
*\*\*\* Threaded Rods are provided for Sizes 24" - 48" in place of T-Bolts*

**SIGMA One-Lok Series T-SLDE Tandem Restraint Installation Instructions:**

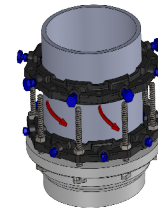
1.) Clean fitting socket and pipe end. Lubricate gasket and pipe end with soapy water or approved pipe lubricant meeting AWWA C111. Install both Sigma One-Lok Model SLDE wedge –action restraining glands onto the end of the plain-end pipe so that the frontal lips of both glands face the pipe end. Follow the glands with a SigmaSeal™ gasket. Insert the pipe end into the socket and press the SigmaSeal™ gasket firmly and evenly into the gasket recess in the mechanical joint fitting cavity, while maintaining a straight joint throughout the installation.



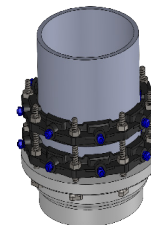
2.) Slide the wedge gland closest to the pipe end up against the gasket with the frontal lip and insert the extra-long t-head bolts or threaded restraining rods with heavy hex nuts. Hand-tighten the t-head bolts or restraining rods evenly and make any necessary deflection after joint assembly but prior to tightening the bolts. Tighten the bolts in an alternate manner (star pattern) around the gland to the recommended torque (3 inch 45-60 ft-lbs., 4-24 inch 75-90 ft-lbs., 30-36 inch 100-120 ft-lbs. and 42-48 inch 120-150 ft-lbs). Maintain an even distance between the restraint gland and fitting face throughout the tightening of the bolts or restraining rods. The use of a torque-indicating wrench is recommended, keeping in mind that 30-48 inch assemblies may require repeated repetitions to ensure proper torque.



3.) Hand-tighten the break-off top actuating bolts until contact is made between each wedge insert and the pipe wall. Continue tightening the break-off bolts in an alternate manner (star pattern) until all of the break-off tops have been fractured. Slide the 2nd wedge restraint gland up and rotate accordingly to allow the t-head bolts or restraining rods to pass through the corresponding bolt holes, keeping a 1" space (dimension A in technical chart) between the two wedge-action restraint glands.



4.) Install an additional heavy hex nut on the backside of the second gland, hand-tighten and then snug each nut ½-1 turn with a wrench. Hand-tighten each break-off top actuating bolt until contact is made between the wedge insert and the pipe wall. Continue tightening the break-off bolts in an alternate manner (star pattern) until all of the break-off tops have been fractured.



## LOCATIONS

### Northeast Region

#### Cream Ridge, New Jersey (HQ)

700 Goldman Drive  
 Cream Ridge, NJ 08514  
 Phone (800) 999-2550  
 Fax (609) 758-1158  
 crmcsr@sigmaco.com

### REPCO

970 DE LA Bastican  
 Victoriaville, Quebec G6T 1Y2  
 Phone (888) 744-6262  
 Fax (819) 758-1153  
 jboucher@repco.ca

### Concord Supply

2353 Bowman Street  
 Innisfil, Ontario L9S 3V6  
 Phone (877) 436-3800  
 Fax (705) 436-6338  
 tanya@concordsupply.ca

### Midwest Region

#### Sauk Village, Illinois

21699 Torrence Avenue  
 Sauk Village, IL 60411  
 Phone (888) 999-0420  
 Fax (708) 758-6790  
 chicsr@sigmaco.com

### Southeast Region

#### Alexander City, Alabama

1500 Highway 22 W  
 Alexander City, AL 35010  
 Phone (800) 824-4513  
 Fax (256) 234-4956  
 alxcsr@sigmaco.com

### Southwest Region

#### Houston, Texas

5000 Askins Lane  
 Houston, TX 77093  
 Phone (800) 999-0109  
 Fax (281) 987-0200  
 htncsr@sigmaco.com

### Western Region

#### Ontario, California

4652 E. Guasti Road  
 Ontario, CA 91761  
 Phone (800) 688-6230  
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 ontcsr@sigmaco.com

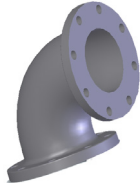
### Auburn, Washington (Branch)

902 W Main Street  
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 Phone (800) 688-6230  
 Fax (909) 391-2033  
 ontcsr@sigmaco.com

[www.sigmaco.com](http://www.sigmaco.com)

Terms and Conditions of Sales available at our website.

## AWWA Ductile Iron Fittings



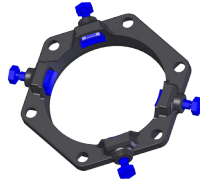
- 2-64" C153 Ductile Iron Mechanical Joint Class 350
- 2-48" C110 Full Body Mechanical Joint
- 2-64" C110 Cast Iron/Ductile Iron Flanged Fittings
- 3-24" C153 TRIM TYTON® Compact Push On Fittings
- 4-24" C110 Full Body Push On Fittings
- C116 Fusion Bonded Epoxy lining available
- PROTECTO 401® ceramic epoxy lining available

## Mechanical Joint Accessories



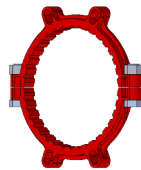
- Prepackaged and loose mechanical joint accessories
- SIGMASEAL™ improved mechanical joint gasket
- Snap-on multi-purpose gasket for ductile iron or PVC pressure pipes
- Ductile iron set screw retainer glands
- OMNI-SLEEVE™ improved wall penetration sleeve
- Specialty bolts and nuts for mechanical joint assemblies

## ONE-LOK™ Wedge Action Restraints



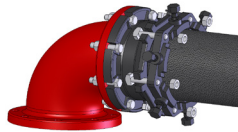
- 3-48" ONE-LOK SLDE restraint for ductile iron pipe (import or domestic)
- 54"-60"-64" ONE-LOK SLDE restraint for ductile iron pipe (import)
- 3-36" ONE-LOK SLCE restraint for PVC pipe (import or domestic)
- 3-36" ONE-LOK SLDEH bell joint harness for ductile iron pipe
- 4-12" / 20" ONE-LOK SLDM restraint for oversized cast iron pipe
- 4-36" ONE-LOK SSLD split restraint for existing ductile iron pipe
- 4-36" ONE-LOK SSLDH split restraint harness for existing ductile iron pipe
- 3-12" ONE-LOK SLCEH bell joint harness for PVC pipe

## PV-LOK™ Serration Lock Restraints



- 4-48" PV-LOK PWM Restraint for MJ Fitting to PVC pipe
- 4-48" PV-LOK PWP Restraint for PVC bell joint restraint
- 4-12" PV-LOK PWP Restraint for PVC bell joint restraint (domestic)
- 4-48" PV-LOK PVPF Restraint for PVC fitting to PVC pipe
- 4-12" PV-LOK PWH PVC bell joint harness
- 2-12" PV-LOK PVM Restraint for MJ Fitting to IPS PVC pipe
- 2-12" PV-LOK PVP Restraint for IPS PVC pipe bell joint
- 4-8" PV-LOK PVPF Restraints for IPS PVC pressure fitting

## Flange Adapters



- 3-36" SIGMAFLANGE SFA flange adapter sleeve for PVC and DIP
- 2-48" ZIP FLANGE set screw style flange adapter

## Municipal Construction Castings



- Manhole Rings and Covers
- Curb and Meter Boxes
- Frames and Grates
- Storm Inlets
- Valve Boxes, Risers, and Extensions

## Products for the Ductile Iron Fabricator



- 3-64" High Hub Threaded Flanges
- 3-48" Tapped High Hub Threaded Flanges
- 3-36" Extra Heavy 250lb Drilled Threaded Flanges
- 3-48" Threaded MJ Bell Adapters
- 3-48" MJ x PE Bell adapter (2ft)
- 3-48" Anchor Flanges
- 3-16" Filler Flanges

## Extended Range Products



- FLANGE-PAK™ prepackaged flange accessory sets
- Polyethylene encasement for ductile iron pipe
- Copper tubing products
- Tracer wire & detectable/non-detectable marking tape
- Pipe joint lubricant & hydraulic cement
- Socket clamps and tie rod accessories
- BOXLOK Valve Box Alignment Device
- Cast Iron Companion Flanges