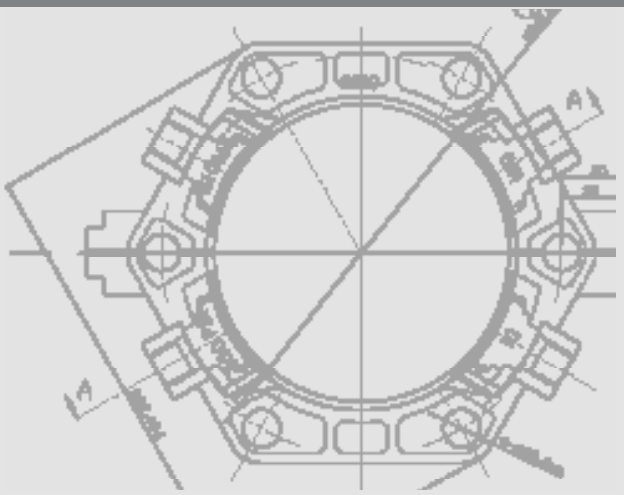
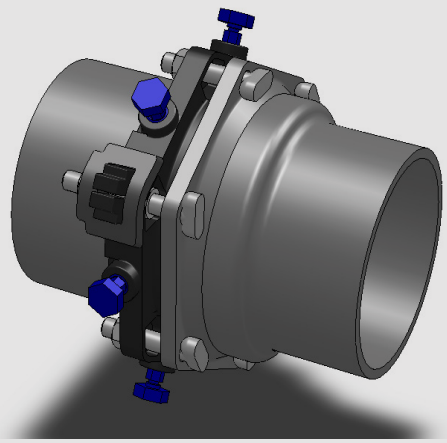
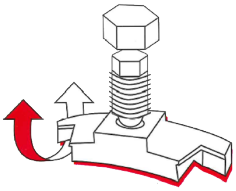
SIGMA™

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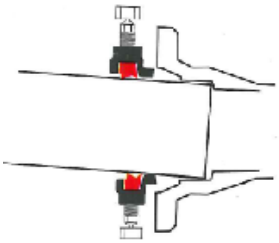
ONE-LOK™ Series SSLD Split Gland for DIP







ONE-LOK's unique cam action allows the restraining wedges to "rock," gripping the pipe wall more securely as thrust force increases.



ONE-LOK's cam action also accommodates deflection of the joint during installation, and also allows for subsidence, seismic or other forces after installation, up to the maximum allowed deflection.

Deflection Chart

Nominal Size	Item #	Deflection
4-12"	SSLD3-SSLD12	5 deg
14-16"	SSLD14-SSLD16	2 deg
18-24"	SSLD18-SSLD24	1.5 deg
30-48"	SSLD30-SSLD36	1 deg

Features & Advantages:

1) The SIGMA ONE-LOK™ Series SSLD split mechanical joint, wedge-action restraining gland provides all the advantages of the ONE-LOK restraint system with a split gland design for use with existing installations of ductile iron pipe and fitting assemblies.

2) The SIGMA ONE-LOK Series SSLD is a mechanical joint restraining gland that implements a series of individually activated wedges into the mechanical joint follower gland. When the wedge segment is engaged by the actuating bolt, the primary contact edges of each wedge segment lock onto the pipe wall. This action causes the primary contact edges to grip the pipe and effectively restrain all classifications of ductile iron pipe.

3) ONE-LOK SSLD precision contoured wedges provide proper contact and support of the ductile iron pipe wall. Each wedge is manufactured with an elongated contour that evenly matches the outside circumference of each nominal diameter of ductile iron pipe. This elongated contour also eliminates the concern of damage to both the pipe wall and the interior cement mortar lining caused by point loading, even on the thinner pressure classes of ductile iron pipe.

4) ONE-LOK SSLD wedge actuating bolt provides the installer with a visual torque indicator. The breakaway top ensures proper engagement of the wedge segment at the time of installation. Unlike other actuating bolts, the ONE-LOK SLDE is manufactured with a proprietary quality control system that ensures the breakaway tops will activate at the correct torque. The breakaway top is sized to match the same dimensions of the bolts and nuts used to assemble the mechanical joint fitting and follower gland, eliminating the need for special installation tools. Once engaged, the actuating bolt leaves a residual hex-head shank, allowing post-installation disassembly of the restrained joint, if necessary.

SIGMA Corporation

700 Goldman Drive
Cream Ridge, NJ 08514

800 999 2550 p
609 758 1163 f
crmcsr@sigmaco.com

www.sigmaco.com

ONE-LOK™ Series SSLD Split Gland for DIP

Sample Specification:

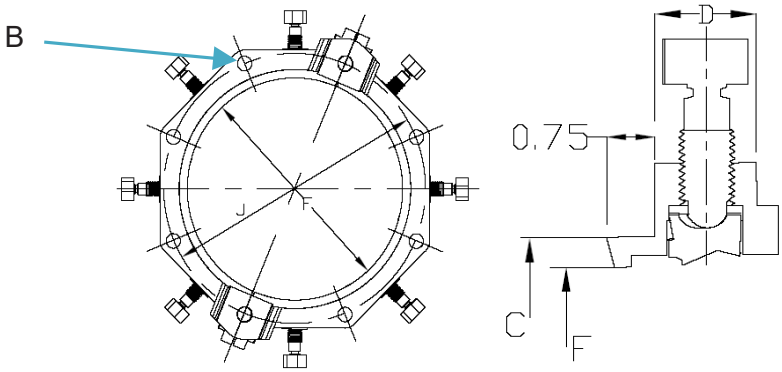
Restraint for standard mechanical joint fittings over existing installations of ductile iron pipe shall be incorporated in the design of the split follower gland and shall utilize multiple wedge segments that act against the pipe, increasing their resistance as the line pressure increases. The assembled joint shall maintain the maximum flexibility and deflection of all nominal pipe sizes after burial. Restraining gland, wedge segments, and actuating bolts shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536, Grade 65-45-12. Wedge segments shall be heat treated to a hardness of 370 BHN minimum. Dimensions shall be compatible with standardized mechanical joints conforming to the requirements AWWA C111/ANSI A21.11 and AWWA C153/ANSI 21.53. Breakaway tops shall be incorporated in the design of the actuating bolts to visually ensure proper torque. The manufacturing of the actuating bolt must incorporate a quality control procedure that is deemed acceptable by the specifier and positively assures precise and consistent operating torque of the breakaway top. The mechanical joint restraining devices shall have a working pressure rating of 350psi minimum and provide no less than a safety factor of 2:1. Restraining device shall be SIGMA ONE-LOK™ Series SSLD or approved equal.

Materials:

- Gland body, brackets, 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.



ONE-LOK™ SSLD series split gland design includes bracket with extra long T-bolts to secure the gland halves.



Dimensions in Inches, Weights in Pounds

Nominal Pipe Size	Item #	Weight (lbs)	Ductile Iron Pipe OD	Dimensions					Break-Off Bolts and Inserts			Pressure Rating (PSI)	T-Bolts					Gasket	
				C	F	D	B	J	Qty	Size	Torque (Ft Lbs)		No	Size	No	Size	Torque ft-lbs	No	Item #
4	SSLD4	19.00	4.80	5.92	5.00	1.58	0.875	7.50	2	7/8	75 - 90	350	2	3/4 x 5	2	3/4 x 3.5	75 - 90	1	MGS4
6	SSLD6	25.00	6.90	8.02	7.10	1.58	0.875	9.50	3	7/8	75 - 90	350	2	3/4 x 5	4	3/4 x 3.5	75 - 90	1	MGS6
8	SSLD8	32.00	9.05	10.17	9.25	1.63	0.875	11.75	4	7/8	75 - 90	350	2	3/4 x 6	4	3/4 x 4.0	75 - 90	1	MGS8
10	SSLD10	40.00	11.10	12.22	11.30	1.58	0.875	14.00	6	7/8	75 - 90	350	2	3/4 x 6	6	3/4 x 4.0	75 - 90	1	MGS10
12	SSLD12	45.00	13.20	14.32	13.40	1.58	0.875	16.25	8	7/8	75 - 90	350	2	3/4 x 6	6	3/4 x 4.0	75 - 90	1	MGS12
14	SSLD14	62.17	15.30	16.40	15.55	1.58	0.875	18.75	10	7/8	75 - 90	350	4	3/4 x 6	6	3/4 x 4.5	75 - 90	1	MGS14
16	SSLD16	97.11	17.40	18.50	17.54	1.77	0.875	21.00	12	7/8	75 - 90	350	4	3/4 x 6	8	3/4 x 4.5	75 - 90	1	MGS16
18	SSLD18	99.94	19.50	20.60	19.64	1.77	0.875	23.25	12	7/8	75 - 90	250	4	3/4 x 6	8	3/4 x 4.5	75 - 90	1	MGS18
20	SSLD20	110.04	21.60	22.70	21.74	1.87	0.875	25.50	14	7/8	75 - 90	250	4	3/4 x 6	10	3/4 x 5.0	75 - 90	1	MGS20
24	SSLD24	162.71	25.80	26.88	25.95	1.92	0.875	30.00	16	7/8	75 - 90	250	4	3/4 x 6	12	3/4 x 5.0	75 - 90	1	MGS24
30	SSLD30	293.41	32.00	33.29	32.17	2.13	1.125	36.88	20	1.00	115-125	250	4	1 x 7	16	1 x 6.5	100 - 120	1	MGS30
36	SSLD36	388.50	38.30	39.59	38.47	3.15	1.125	43.75	24	1.00	115-125	250	4	1 x 7	20	1 x 6.5	100 - 120	1	MGS36
42*	SSLD42	440.00	44.50	45.79	44.67	3.56	1.38	50.62	28	1 1/4	115-125	200	---	---	28	1 1/4 x 8.0	120 - 150	1	MGS42
48*	SSLD48	597.00	50.80	52.09	50.97	3.81	1.38	57.50	32	1 1/4	115-125	175	---	---	32	1 1/4 x 8.0	120 - 150	1	MGS48

** - Pipe Re-Rounding Feature available*

- SSLD to be used with Split Sigma Seal Gasket

Installation Instructions for ONE-LOK™ SSLD

1. Disassemble the existing ductile iron pipe and fitting joint. Remove and clean any existing joint problems in the line.

2. If it is necessary to replace the existing gasket, remove and follow by thoroughly cleaning and lubricating the pipe wall and enclosed SIGMASEAL™ gasket with an approved pipe joint lubricant meeting AWWA/ANSI C111/A21.11. Field cut the gasket at a 45 degree angle and insert firmly into the fitting.

3. Remove the brackets from each side of the ONE-LOK SSLD restrainer gland. Position both halves of the gland around the pipe, making certain that the frontal lip faces the gasket and reinstall the brackets. Hand-tighten the T-head bolts and nuts, making sure to use the extra long bolts through the side bracket areas, connecting the ONE-LOK SSLD restrainer gland and pipe fitting. Beginning with one T-head bolt positioned adjacent to one of the connecting brackets, alternately and evenly tighten all T-bolts to the torques recommended by AWWA/ANSI C111/A21.11.

4. Hand tighten the ONE-LOK SSLD actuating bolts until all wedge segments have come in contact with the pipe, ensuring the pipe is properly centered in the fitting cavity.

5. Tighten all ONE-LOK SSLD actuating bolts alternately in a star pattern until each of the break off tops have been fractured.

6. Instructions for using re-rounding feature:

a) Measure the OD of the pipe and identify the minimum & maximum diameter.
b) Insert the SSLD in to the pipe with the lugs positioned on the maximum diameter side.
c) Using the bolts provided in the lugs tighten them in alternating method till the diameter averages out and the pipe can be inserted in to the bell.
d) Once the pipe is inserted in to the bell the bolts can be backed off.
e) Please exercise caution that these bolts are normal Hex bolts and are painted BLACK to distinguish between the break off bolts which are painted BLUE.
f) These bolts can be either removed from the gland or left as these will be only used for re-rounding the pipe and not to be used during the installation of the SSLD.
g) Recommended installation instructions provided in the installation tag to be followed for installing the SSLD.

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
395 Boul. Labbé Nord
Victoriaville, Qc G6P 1B1
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
Fax (909) 391-2033
ontcsr@sigmaco.com

Auburn, Washington (Branch)
902 W Main Street
Auburn, WA 98001
Phone (800) 688-6230
Fax (909) 391-2033
ontcsr@sigmaco.com

www.sigmaco.com

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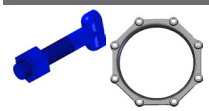
AWWA Ductile Iron Fittings



- 2-64” C153 Ductile Iron Mechanical Joint Fittings
- 2-48” C110 Ductile Iron Mechanical Joint Fittings
- 2-64” C110 Ductile Iron Flanged Fittings
- 3-24” C153 Ductile Iron Push-On Fittings
- 4-24” C110 Ductile Iron Push-On Fittings
- 3-36” Ductile Iron Mechanical Joint Connector
- C116 Fusion Bonded Epoxy Lining Available
- PROTECTO 401® Ceramic Epoxy Lining Available

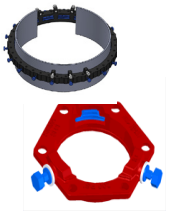
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Mechanical Joint Accessories



- Prepackaged and Loose Mechanical Joint Accessories
- SIGMASEAL™ Improved Mechanical Joint Gasket
- Snap-On Multi-Purpose Gasket for Ductile Iron or PVC Pressure Pipes
- OMNI-SLEEVE™ Improved Wall Penetration Sleeve
- Specialty Bolts and Nuts for Mechanical Joint Assemblies

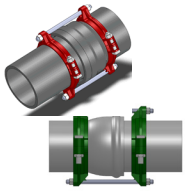
ONE-LOK™ Wedge Action Restraints



- 3-48” ONE-LOK D-SLDE Domestic Wedge Restraint for Ductile Iron Pipe
- 3-64” ONE-LOK SLDE Wedge Restraint for Ductile Iron Pipe (Import)
- 4-48” ONE-LOK T-SLDE Tandem Wedge Restraint for High Pressure Ductile Iron Pipe
- 3-36” ONE-LOK D-SLCE Domestic Wedge Restraint for PVC Pipe
- 3-12” ONE-LOK SLC Wedge Restraint for PVC Pipe (Import)
- 3-60” ONE-LOK SLCE Wedge Restraint for PVC Pipe (Import)
- 3-42” ONE-LOK SLDEH Wedge Harness Restraint for Ductile Iron Pipe
- 4-12” /16” /20” ONE-LOK SLDM Wedge Restraint for Oversized Cast Iron Pipe
- 4-36” ONE-LOK SSLD Split Wedge Restraint for Installed Ductile Iron Pipe & Fitting
- 4-36” ONE-LOK SSLDH Split Wedge Harness Restraint for Installed Ductile Iron Pipe
- 4-12” ONE-LOK SLCEH Wedge Harness Restraint for AWWA C900 PVC Pipe

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- 4-48” PV-LOK PWM Serrated Restraint for Ductile Iron Fitting & AWWA C900/905 PVC Pipe
- 4-48” PV-LOK PWP Serrated Bell Joint Restraint for AWWA C900/905 PVC Pipe
- 4-12” PV-LOK D-PWP Domestic Serrated Bell Joint Restraint for AWWA C900 PVC Pipe
- 4-12” PV-LOK PWPF Restraint for AWWA C900/905 PVC Pipe & PVC Fitting
- 4-12” PV-LOK PWH Serrated Harness Restraint for AWWA C900 PVC Pipe
- 2-12” PV-LOK PVM Serrated Restraint for Ductile Iron & IPS OD PVC pipe
- 2-12” PV-LOK PVP Serrated Bell Joint Restraint for IPS OD PVC Pipe
- 4-8” PV-LOK PVPF Serrated Restraint for IPS OD PVC Pipe & PVC Fitting
- 4-12” PV-LOK PWP Serrated Bell Joint Restraint for Ductile Iron Pipe

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Products for the Ductile Iron Fabricator



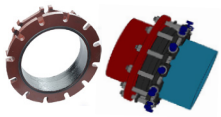
- 3-64” High Hub Threaded Flanges
- 3-48” Tapped High Hub Threaded Flanges
- 3-36” Extra Heavy 250lb Drilled Threaded Flanges
- 3-48” Threaded MJ Bell Adapters
- 3-48” MJ x PE Bell adapter
- 3-48” Anchor Flanges
- 3-16” Filler Flanges

Extended Range Products



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- Polyethylene Encasement for Ductile Iron Pipe
- Copper Tubing Products
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- Socket Clamps and Tie Rod Accessories
- Boxlok Valve Box Alignment Device
- Cast Iron Companion Flanges

Flange Adapters



- 3-36” SIGMAFLANGE Flange Adapter Sleeve for PVC and Ductile Iron Pipe
- 2-48” ZIP FLANGE Set Screw Style Flange Adapter
- 3-24” SIGMAFLANGE Universal Joint for Flanged Fittings, Flanged Pipes & Valves

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