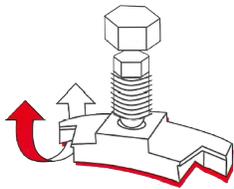
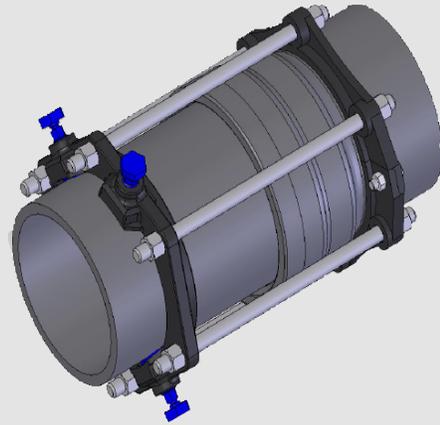
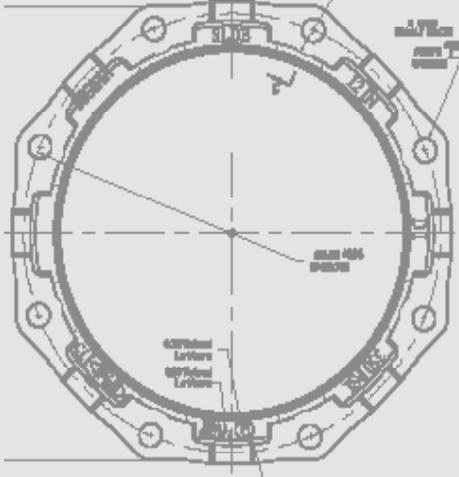
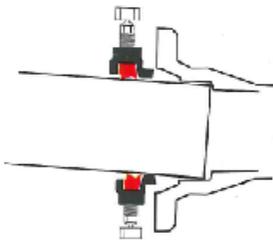


ONE-LOK™ Series SLDEH Harness for Ductile Iron Pipe



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.

Features & Advantages:

1) The SIGMA ONE-LOK Series SLDEH ductile iron pipe joint harness consists of Series SLDE mechanical joint, wedge-action restraining gland installed on the plain end of the pipe joint and incorporates high strength, low alloy, corrosion resistant restrainer rods connected to a standard mechanical joint follower split gland behind the shoulder of the bell end of the pipe joint. The SIGMA two piece back-up ring series SG has oblong ears to accommodate varying outside diameter of DI pipe bell.

2) The SIGMA ONE-LOK Series SLDEH 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 SLDEH's 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 SLDEH's 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.

Deflection Chart

Nominal Size	Item #	Deflection
3-12"	SLDEH3-SLDEH12	5 deg
14-16"	SLDEH14-SLDEH16	2 deg
18-24"	SLDEH18-SLDEH24	1.5 deg
30-48"	SLDEH30-SLDEH48	1 deg

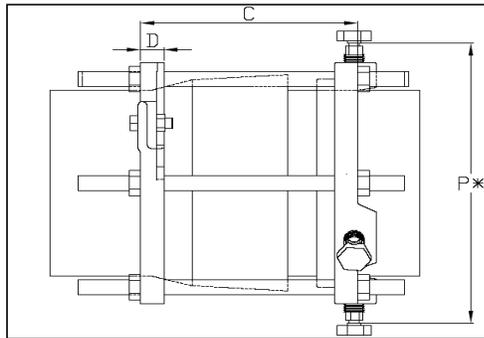
ONE-LOK™ Series SLDEH Harness for Ductile Iron Pipe

Sample Specification:

Restraint for push-on bells of ductile iron pipe shall consist of a contoured wedge-action retainer gland installed on the spigot (plain) end of the pipe, connected to a two-piece back-up ring (split follower gland) seated behind the pipe bell. The contoured wedge-action restrainer gland shall utilize multiple wedge segments that act against the pipe, increasing their resistance as line pressure increases. Restraining glands, 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. Breakaway tops shall be incorporated in the design of the actuating bolt 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 backing gland shall be manufactured of high strength ductile iron in accordance with AWWA C111/ANSI A21.11 and AWWA C153/ANSI 21.53. All connecting rods and nuts shall be of high strength, low alloy steel in accordance with AWWA C111/ANSI A21.11. The mechanical joint restraining devices shall have a water working pressure rating of 350psi for sizes 3-16 and 250psi for 18-36 minimum and provide a safety factor of not less than 2:1. Restraining harness shall be SIGMA ONE-LOK™ Series SLDEH or approved equal.

Material:

- Gland body, brackets, two piece back-up ring, wedge segments & actuating bolts are manufactured in accordance to ASTM A536, Grade 65-45-12 ductile iron.
- Restraining Rods & Nuts: High strength, low alloy steel meeting AWWA/ANSI C111/A21.11 with minimum 65,000 psi tensile strength and 45,000 psi yield strength.
- Side Clamping Bolts & Hex Nuts: ASTM A449 high strength steel.



Dimensions in Inches, Weights in Pounds:

Size	Item #	Pressure Rating	Max Pipe Bell OD Clearance	Dim C	Dim P*	Dim D	Harness Accessories					
							Size of Clamping Bolt and Nut (Size x Length)	Torque (ft-lb) for Split Gland Side Clamping Bolt	Restraining Rod Size X Length	# of Nuts Size	# of Washer (Size)	Wgt of SG+One-Lok SLDE + Rod (lb)
3	SLDEH3	350	5.44	14	9.40	0.62	1/2 x 1.5 - 2	65	5/8 x 17 - 4	8 - 5/8	NA	12.9
4	SLDEH4	350	6.62	14	10.24	0.75	1/2 x 1.5 - 2	65	3/4 x 17 - 4	8 - 3/4	NA	18.9
6	SLDEH6	350	8.62	14	12.34	0.88	1/2 x 1.5 - 2	65	3/4 x 17 - 6	12 - 3/4	NA	29.5
8	SLDEH8	350	10.88	14	14.32	1.00	1/2 x 1.5 - 2	65	3/4 x 17 - 6	12 - 3/4	NA	36.9
10	SLDEH10	350	13.12	20	16.54	1.00	1/2 x 1.5 - 2	65	3/4 x 24 - 8	16 - 3/4	NA	52
12	SLDEH12	350	15.38	20	18.80	1.50	3/4 x 3 - 2	65	3/4 x 24 - 8	16 - 3/4	NA	76
14	SLDEH14	350	17.88	22	21.20	3.00	7/8 x 6 1/4 - 4	130	3/4 x 24 - 6	12 - 3/4	6 (7/8 x 2 x 2 x 1/4)	95
16	SLDEH16	350	20.12	22	23.74	3.50	7/8 x 6 1/4 - 4	130	3/4 x 24 - 6	12 - 3/4	6 (7/8 x 2 x 2 x 1/4)	115
18	SLDEH18	250	22.38	22	25.84	4.25	1 x 6 1/4 - 4	130	3/4 x 24 - 8	16 - 3/4	8 (7/8 x 2 x 2 x 1/4)	144
20	SLDEH20	250	24.62	22	27.94	5.00	1-1/4 x 6 - 4	130	3/4 x 24 - 8	16 - 3/4	8 (7/8 x 2 x 2 x 1/4)	201
24	SLDEH24	250	29.12	26	32.14	3.00	1 x 5 - 4	130	3/4 x 30 - 10	20 - 3/4	10 (7/8 x 2 x 2 x 1/4)	223
30	SLDEH30	250	35.75	26	39.30	3.00	1 x 5 - 4	130	1 x 30 - 10	20 - 1	10 (1 1/8 x 2.5 x 2.5 x 5/16)	360
36	SLDEH36	250	42.62	26	46.07	3.00	1 x 5 - 4	130	1 x 30 - 12	24 - 1	12 (1 1/8 x 2.5 x 2.5 x 5/16)	508
42	SLDEH42	250	49.37	30	53.25	4.10	1 1/4 x 6	130	1 1/4 x 48 - 12	24 - 1 1/4	12 (3 x 3 x 3/8)	835
48*	SLDEH48	250	56.12	30	59.55	3.00	NA	NA	1 1/4 x 48 - 28	56 - 1 1/4	NA	1351

* Note: SLDEH48 is offered with C110 MJ Gland for the backup ring and all other sizes are with Split gland

INSTALLATION INSTRUCTIONS – ONE-LOK™ SERIES SLDEH HARNESS FOR DUCTILE IRON PIPE

1. Install the split back-up ring behind the ductile iron pipe bell by tightening the assembly bolts to the recommended torque specification outlined in the below chart.
2. Slide the Sigma One-Lok wedge-action restrainer gland onto the plain end of the connecting pipe, placing the lip extension toward the end.
3. Assemble the push-on ductile iron pipe per manufacturer's recommendations.
4. Position the One-Lok SLDE restrainer on the spigot so that the rod holes are in alignment with the split follower gland and the distance between the restrainer and split gland will accommodate the length of the restraining rods.
5. Install the restraining rods and nuts where required in each of the bolt holes keeping the glands spaced evenly apart. **Note: washer plates are provided for sizes 14" - 48" and placed behind each restraining ear on the split back-up ring.**
6. Hand-tighten the actuating bolts on the SLDE restrainer in a clockwise manner until each wedge segment comes in contact with the pipe wall. To activate the SLDE, continue to tighten each actuating bolt in a STAR sequence, alternating between the actuating bolts until all the break-off tops have been sheared away. Never tighten an actuating bolt more than 180 degrees before moving to the next bolt.
7. Tighten all the nuts on the connecting rod until the mechanical joint split back-up ring is seated firmly against the back of the pipe bell. Alternately tighten the break-off top bolts in a STAR pattern until the heads fracture, locking the wedge-action restraining gland against the pipe wall. Snug both retaining nuts to ensure a sound assembly.

Size	Item #	Torque (ft-lb) for Split Gland Side Clamping Bolt
4	SLDEH4	65
6	SLDEH6	65
8	SLDHE8	65
10	SLDEH10	65
12	SLDEH12	65
14	SLDEH14	130
16	SLDEH16	130
18	SLDEH18	130
20	SLDEH20	130
24	SLDEH24	130
30	SLDEH30	130
36	SLDEH36	130
42	SLDEH42	130
48	SLDEH48	N/A



Sizes 3" - 14" are UL listed for 350 psi on DI Pipe
 Sizes 16" are UL listed for 300 psi on DI Pipe
 Sizes 18" - 30" are UL listed for 250 psi on DI Pipe
 Sizes 36" are UL listed for 200 psi on DI Pipe
 Sizes 42" and 48" are pressure rated at 250 psi on DI Pipe
 Sizes 4" - 12" are FM approved for 175 psi on DI pipe.

LOCATIONS

Northeast Region

Cream Ridge, New Jersey (HQ)

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

REPCO

51 Rue Gingras
Warwick, QC J0A 1M0
Phone (888) 744-6262
jbourcher@repco.ca

Concord Supply

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

Midwest Region

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21699 Torrence Avenue
Sauk Village, IL 60411
Phone (888) 999-0420
chicrs@sigmaco.com

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22700 I-76 Frontage Rd
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Phone (888) 999-0420
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1500 Highway 22 W
Alexander City, AL 35010
Phone (800) 824-4513
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5000 Askins Lane
Houston, TX 77093
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4652 E. Guasti Road
Ontario, CA 91761
Phone (800) 688-6230
ontcsr@sigmaco.com

Auburn, Washington (Branch)

902 W Main Street
Auburn, WA 98001
Phone (800) 688-6230
ontcsr@sigmaco.com

www.sigmaco.com

Terms and Conditions of Sales available at our website.

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

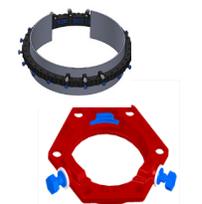
Visit our website for available special coatings. <https://www.sigmaco.com/project/fittings-coatings-linings/>

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

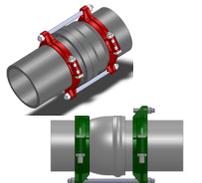
ONE-LOK™ Wedge Action Restraints



- 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
- 4-48" 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

Visit our website for available special coatings. <https://www.sigmaco.com/download/corsafe-alternative-coating-for-enhanced-exterior-corrosion-protection-on-wedge-and-serration-type-restrainers/>

PV-LOK™ Serration Lock Restraints



- 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 PVPF 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
- 2-8" 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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- Rotational Molded Meter Boxes & Pits
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- Extensive Nationwide Inventory
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Municipal Construction Castings



- Manhole Rings and Covers
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- Storm Inlets
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Products for the Ductile Iron Fabricator



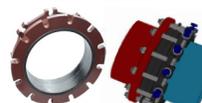
- 3-64" High Hub Threaded Flanges
- 3-48" Tapped High Hub Threaded Flanges
- 3-36" Extra Heavy 250lb Drilled Threaded Flanges
- 3-48" Threaded MJ Bell Adapters
- 3-48" MJ x PE Bell adapter
- 3-48" Anchor Flanges
- 3-16" Filler Flanges

Extended Range Products



- 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

Flange Adapters



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