

ONE-LOK Series SLDE for Ductile Iron Pipe

Description

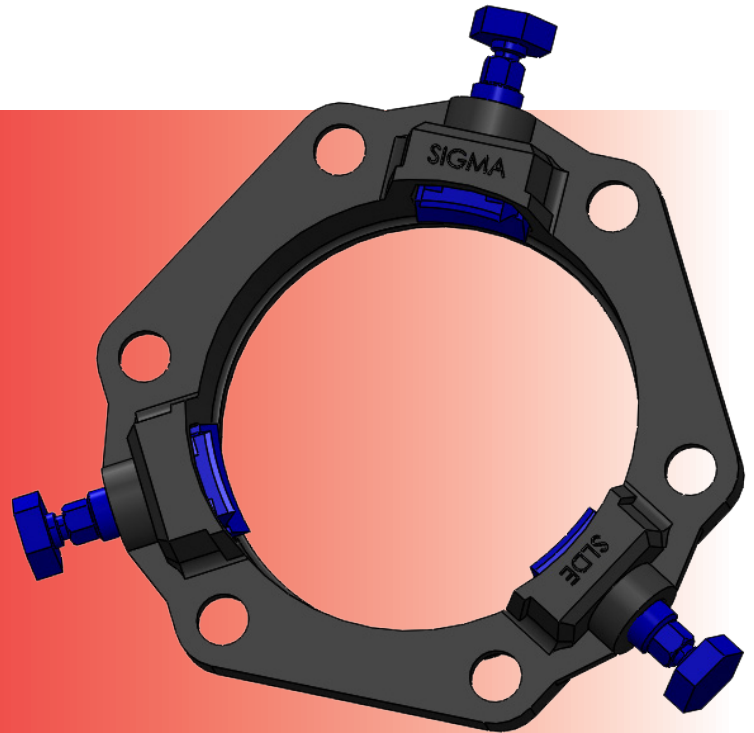
The SIGMA ONE-LOK Series SLDE is a mechanical joint restraining gland. It consists of individually activated wedges and bolts on a mechanical joint gland.

How it works

When the wedge segments are engaged by the appropriate bolt, the wedge locks firmly onto the pipe wall. When all segments are activated correctly then this gland effectively restrains all thickness and pressure classifications of ductile iron pipe.

Product Sizes Available

3-64 inches



Features

- › ONE-LOK SLDE's precision contoured wedges provide proper contact and support of the ductile iron pipe. This contour eliminates potential damage to the pipe wall or its interior cement lining that might be incurred during installation, even on thinner pressure classes of ductile iron pipe.
- › The wedge bolt provides the installer with a visual torque indicator to guide correct alignment.
- › The breakaway top to these bolts ensures proper engagement of the wedge segment during installation. Unlike other bolts, the ONE-LOK SLDE is manufactured to a proprietary standard that ensures the breakaway bolts activate at the correct torque.
- › The SLDE's unique wedge segment and bolt design uses a cam action principle, allowing wedge segments to rock and increase their grip on the pipe wall as thrust on the assembled joint increases. This design feature improves the product's resistance to subsidence, seismic forces, and other movement within the maximum deflection limitations of AWWA applicable standards.
- › No special installation tools are required.
- › Post-installation disassembly of the restrained joint, if required, is straightforward.
- › On sizes 30" and larger, the ONE-LOK SLDE features an innovative re-rounding capability that allows for immediate reconciliation of 'out of round' ductile iron pipes. This re-rounding feature ensures proper restrained joint assembly at time of installation.
- › SLDE 4-12" can be used on Steel Pipe Sch. 40 & above with Transition Gasket.

Materials

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

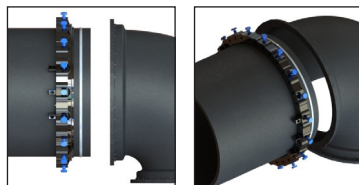


Installation Instructions

ONE-LOK Series SLDE for Ductile Iron Pipe



1. Clean the fitting socket & pipe end. Lubricate mechanical joint gasket & pipe end with soapy water or approved lubricant meeting AWWA C111/A21.11. (A transition gasket is required if using on steel OD pipe).



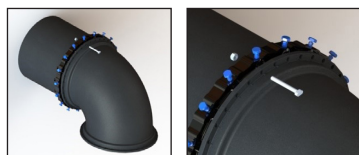
2. Insert the ONE-LOK SLDE Wedge Restraint on the pipe with the lip extension facing the pipe end followed by the gasket, tapered side toward end of the pipe.



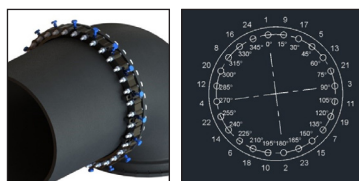
3. Insert the gasket along with the pipe into the fitting socket and seat the gasket firmly and evenly into the gasket cavity, keeping the joint straight.



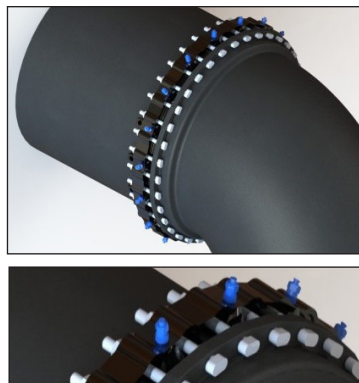
4. Push the ONE-LOK gland toward the fitting and center it around the pipe with the lip evenly against the gasket.



5. Insert the T-bolts with the T-head on the fitting side and nut on the restraint side, and hand tighten the nuts. Make the joint deflection as required, keeping the wedge restraint centered on the pipe before torquing the T-Bolts.



6. Tighten the nuts in an alternate method (STAR PATTERN) to the **recommended torque of 45-60 ft-lbs for 3", 75-90 ft-lbs for 4" – 24", 100-120 ft-lbs for 30", 36", 120 – 150 ft-lbs for 42", 48", 54", 60" & 64" sizes.** Use of a torque indicating wrench is recommended to confirm the applied torque.



7. Hand tighten each actuating bolt in a clockwise direction until contact is made between each wedge insert and the pipe OD. Continue tightening the actuating bolts in an alternate method (STAR PATTERN) until all the break-off tops have been removed. Never tighten actuating bolt more than 180 degrees before moving to the next bolt.
Recommended torque for actuating bolt – 75-90 ft-lbs for 3" – 24", 115 – 125 ft-lbs for 30", 36", 42", 48", 400 +/- 5 ft-lbs for 54", 60", 64".

Deflection Chart

Nominal Size	Item #	Deflection
3-12"	SLDE3-SLDE12	5 deg
14-16"	SLDE14-SLDE16	2 deg
18-30"	SLDE18-SLDE30	1.5 deg
36-64"	SLDE36-SLDE64	1 deg

Technical Details

ONE-LOK Series SLDE for Ductile Iron Pipe

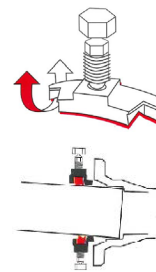


Sample Specification

Restraint for standard mechanical joint fittings shall be incorporated in the design of the 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 through 24" (latest revision). 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 (for sizes 3-16") and 250 psi (for sizes 18-64") minimum and provide no less than a safety factor of 2:1. Restraint shall be UL Listed and FM approved in applicable sizes. Restraining device shall be SIGMA ONE-LOK™ or approved equal.

Materials

- › Gland body, brackets, wedge segments and 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.

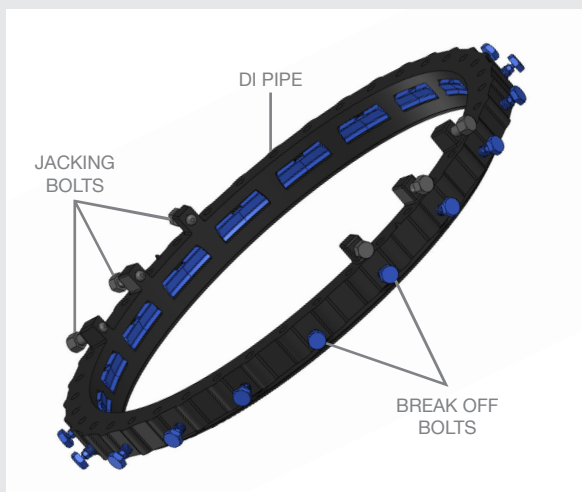


ONE-LOK's unique cam action allows the restraining wedges to "rock," gripping the pipe wall more securely as thrust force increases.

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.

ONE-LOK SLDE 30-64" Re-rounding Feature

SIGMA offers an additional re-rounding feature on its larger-sized pipe restraint products (30" and above). This feature has been developed to help the waterworks industry re-round ductile iron pipe without the use of any external equipment during restraint installation. By using this feature the installer or contractor is able to bring the out-of-round pipe to a near round shape, which enables the spigot end of the pipe to fit into the MJ Bell of a fitting or bell. This feature consists of six lugs for 42" – 64" restraint products, and four lugs for 30" and 36" products with threads to accommodate hex bolts. The bolts are located opposite each other. See diagram below for detailed installation instructions.



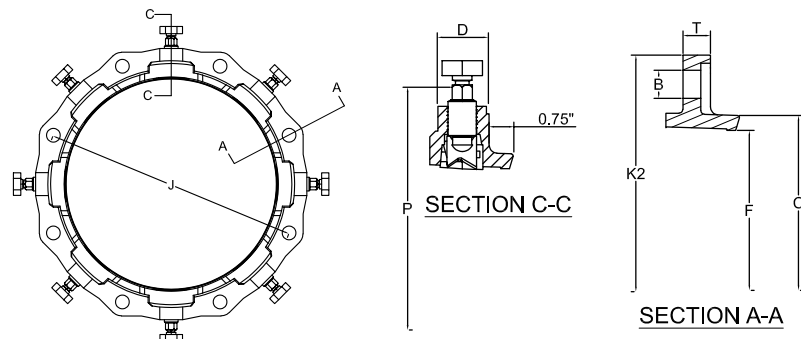
Directions for Installing SIGMA's Re-rounding Feature:

1. Measure the OD of the pipe and identify the minimum & maximum diameter.
2. Insert the SLDE onto the pipe with the lugs positioned on the maximum diameter side.
3. Using the bolts provided in the lugs tighten them in alternating method until the diameter averages out and the pipe can be inserted on to the bell.
4. Once the pipe is inserted on to the bell the bolts can be backed off.
5. 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.
6. These bolts can be either removed from the gland, or left, as these will be only used for re-rounding the pipe and will not be used during the installation of the SLDE.
7. Recommended installation instructions provided in the installation tag to be followed for installing the SLDE.

Technical Details ONE-LOK Series SLDE for Ductile Iron Pipe

Dimensions in Inches, Weights in Pounds

Nom Pipe Size	Item #	Wgt	DI Pipe OD	Steel Pipe OD	Dimensions							Bolts & Inserts			Pressure Rating	T-bolts			Gasket		
					C	F	D	T	P*	B	J	K2	No	Size		Torque	No	Size	Torque	No	Item #
3	SLDE3	5.50	3.96	---	4.84	4.16	1.58	0.55	9.40	0.750	6.19	7.69	2	7/8	75-90	350	4	5/8 x 3.0	45-60	1	TG-3
4	SLDE4	6.50	4.80	4.50	5.92	5.00	1.58	0.55	10.24	0.875	7.50	9.12	2	7/8	75-90	350	4	3/4 x 3.5	75-90	1	MG-4
6	SLDE6	10.00	6.90	6.625	8.02	7.10	1.58	0.60	12.34	0.875	9.50	11.12	3	7/8	75-90	350	6	3/4 x 3.5	75-90	1	MG-6
8	SLDE8	14.50	9.05	8.625	10.17	9.25	1.63	0.75	14.32	0.875	11.75	13.37	4	7/8	75-90	350	6	3/4 x 4.0	75-90	1	MG-8
10	SLDE10	23.00	11.10	10.75	12.22	11.30	1.58	0.85	16.54	0.875	14.00	15.62	6	7/8	75-90	350	8	3/4 x 4.0	75-90	1	MG-10
12	SLDE12	29.00	13.20	12.75	14.32	13.40	1.58	0.85	18.80	0.875	16.25	17.88	8	7/8	75-90	350	8	3/4 x 4.0	75-90	1	MG-12
14	SLDE14	39.60	15.30	---	16.40	15.55	1.58	1.125	21.20	0.875	18.75	20.25	10	7/8	75-90	350	10	3/4 x 4.5	75-90	1	MG-14
16	SLDE16	49.67	17.40	---	18.50	17.54	1.77	1.21	23.74	0.875	21.00	22.50	12	7/8	75-90	350	12	3/4 x 4.5	75-90	1	MG-16
18	SLDE18	60.33	19.50	---	20.60	19.64	1.77	1.25	25.84	0.875	23.25	24.75	12	7/8	75-90	250	12	3/4 x 4.5	75-90	1	MG-18
20	SLDE20	69.00	21.60	---	22.70	21.74	1.87	1.25	27.94	0.875	25.50	27.00	14	7/8	75-90	250	14	3/4 x 5.0	75-90	1	MG-20
24	SLDE24	103.67	25.80	---	26.88	25.95	1.92	1.47	32.14	0.875	30.00	31.50	16	7/8	75-90	250	16	3/4 x 5.0	75-90	1	MG-24
30	SLDE30	158.67	32.00	---	33.29	32.17	2.13	1.65	39.30	1.125	36.88	39.12	20	1.00	115-125	250	20	1 x 6.5	100-120	1	MGS-30
36	SLDE36	234.50	38.30	---	39.59	38.47	3.15	1.75	46.07	1.125	43.75	46.00	24	1.00	115-125	250	24	1 x 6.5	100-120	1	MGS-36
42	SLDE42	344.00	44.50	---	45.79	44.67	3.56	2.25	53.25	1.38	50.62	53.38	28	1 1/4	115-125	250	28	1 1/4 x 8.0	120-150	1	MGS-42
48	SLDE48	456.00	50.80	---	52.09	50.97	3.81	2.25	59.55	1.38	57.5	60.26	32	1 1/4	115-125	250	32	1 1/4 x 8.0	120-150	1	MGS-48
54	SLDE54	1045.00	57.56	---	58.85	57.73	6.00	4.50	70.43	1.375	63.20	67.50	18	1 1/2	400 +/- 5	250	36	1 1/4 x 11.0	120-150	1	MGS-54
60	SLDE60	1136.00	61.61	---	62.90	61.78	6.00	4.50	74.52	1.375	67.72	72.00	18	1 1/2	400 +/- 5	250	36	1 1/4 x 11.0	120-150	1	MGS-60
64	SLDE64	1258.00	65.67	---	66.96	65.84	6.00	4.50	78.68	1.375	71.86	76.00	19	1 1/2	400 +/- 5	250	38	1 1/4 x 11.0	120-150	1	MGS-64



*Product is provided with SIGMASEAL™ improved mechanical joint gasket.

ONE-LOK SLDE was previously referred to as model SLD.
P* Dim shows OD after head is broken/removed.



- ▶ Sizes 3"-12" is approved for thinnest class of DI pipe
- ▶ Sizes 3" - 14" are UL listed for 350 psi on DI Pipe
- ▶ SLDE 4" - 12" can be used on Steel Pipe - Sch 40 & above with Transition Gasket
- ▶ Sizes 4" - 12" are FM approved for 175 psi on DI pipe
- ▶ Size 16" are UL listed for 300 psi on DI Pipe
- ▶ Sizes 18" - 30" are UL listed for 250 psi on DI Pipe
- ▶ Size 36" are UL listed for 200 psi on DI Pipe
- ▶ Sizes 42" and 48" are pressure rated at 250 psi on DI Pipe
- ▶ Sizes 54", 60" and 64" are pressure rated at 250 psi on DI Pipe