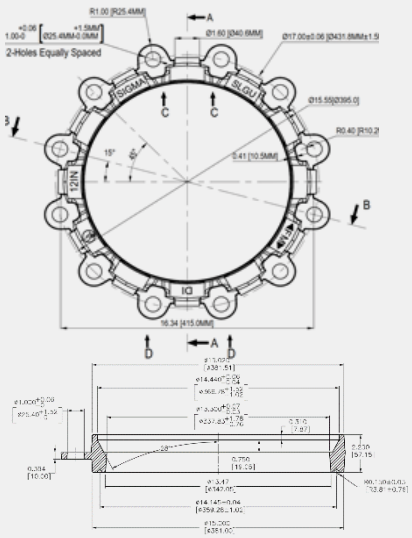
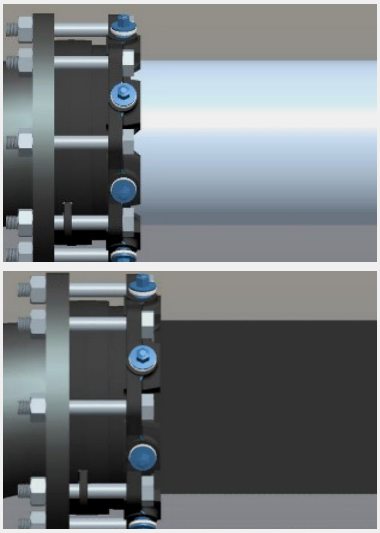
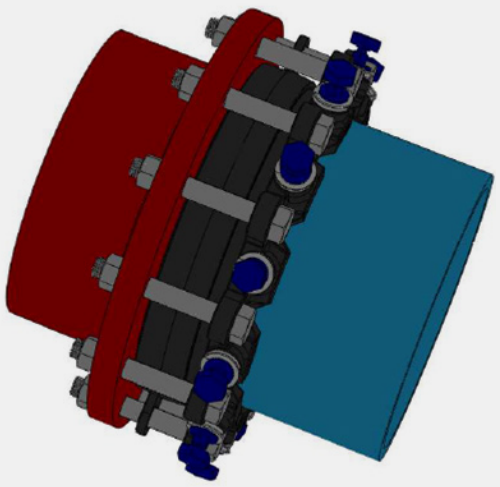
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SIGMAFLANGE™ Universal Joint for Flanged Fittings, Flanged Pipes & Valves







Deflection Chart

Nominal Size	Item No.	Deflection
3	SFUP3	5 deg
4	SFUP4	5 deg
6	SFUP6	5 deg
8	SFUP8	5 deg
10	SFUP10	5 deg
12	SFUP12	5 deg
14	SFUP14	3 deg
16	SFUP16	3 deg
18	SFUP18	2 deg
20	SFUP20	2 deg
24	SFUP24	1.5 deg
30	SFUP30	1.5 deg
36	SFUP36	1 deg

SIGMA Corporation's SIGMAFLANGE™ Universal Model SFUP is designed to connect plain-end ductile iron, steel, AWWA C900 PVC, C909 PVC, ASTM D2241 PVC and HDPE pressure pipes to a flanged fitting, pipe, valve and other flanged appurtenances. A ductile iron adapter ring provides proper sealing of the adjacent flange outlet using an O-ring gasket while accommodating necessary pipe-end restraint using a SIGMA ONE-LOK™ Model SLGU wedge-action gland for ductile iron, steel, C900 PVC, C909 PVC, IPS PVC, HDPE.

Features:

- Accommodates pipe misalignment.
- Easily disassembled for service and maintenance requirements.
- Provides a pressure rating equal to the pipe with a 2:1 factor of safety.
- No special tools required for installation or removal.
- O-ring on adapter ring for better compression and sealing.

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SIGMAFLANGE™ Universal Joint for Flanged Fittings, Flanged Pipes & Valves

Materials:

SIGMAFLANGE™ Universal adapter ring and restraint gland are manufactured of high strength ductile iron in accordance with ASTM A536, Grade 65-45-12.

Mechanical joint gasket and O-ring gasket are manufactured of styrene butadiene rubber (SBR) per ANSI/AWWA C111/A21.11.

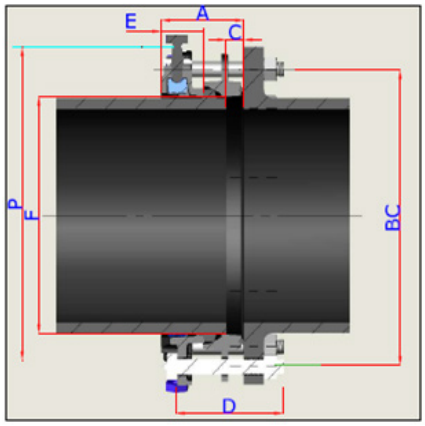
Coating: NSF61 approved Electro-deposition undercoating and Black Alkyd enamel top-coating on adapter ring. Black Alkyd enamel top-coating on restraint gland, using electro-deposition undercoating and Blue Alkyd enamel for the wedge segments and break-off top actuating bolts.

Hex bolts & nuts are manufactured of carbon steel as per ASTM A 307 and zinc-plated in conformance with ANSI/AWWA C111/A21.11

Pressure Rating & Approvals:

- Rated to a working pressure equal to the pressure rating of the pipe
- Safety factor of 2:1
- Underwriter Laboratories Listed on sizes 3” – 12” for use on Ductile Iron & Steel pipe – 350 psi
- Factory Mutual Approved on sizes 3” with IPS PVC Pipe and 4” – 12” on C900 PVC pipe
  DR 18 – 200 psi (4” – 12”)
  DR 14 – 250 psi (4”,6”), 200 psi (8”,10”,12”)

Size	Ductile Iron Pipe	Steel Pipe	PVC Pipe - C900 - CI OD				PVC Pipe - IPS OD		
			DR14	DR18	DR25	DR32.5	SDR17	SDR21	SDR26
3	350 psi	350 psi	----	----	----		250 psi	200 psi	160 psi
4	350 psi	350 psi	305 psi	235 psi	165 psi		250 psi	200 psi	160 psi
6	350 psi	350 psi	305 psi	235 psi	165 psi		250 psi	200 psi	160 psi
8	350 psi	350 psi	305 psi	235 psi	165 psi		250 psi	200 psi	160 psi
10	350 psi	350 psi	305 psi	235 psi	165 psi		250 psi	200 psi	160 psi
12	350 psi	350 psi	305 psi	235 psi	165 psi		250 psi	200 psi	160 psi
14	350 psi	----	305 psi	235 psi	165 psi	125 psi	----	----	----
16	350 psi	----	305 psi	235 psi	165 psi	125 psi	----	----	----
18	300 psi	----	----	235 psi	165 psi	125 psi	----	----	----
20	250 psi	----	----	235 psi	165 psi	125 psi	----	----	----
24	200 psi	----	----	235 psi	165 psi	125 psi	----	----	----
30	200 psi	----	----	235 psi	165 psi	125 psi	----	----	----
36	175 psi	----	----	235 psi	165 psi	125 psi	----	----	----



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Dimensional Chart:

Size	Part #	Weight (Lbs)	Dimension							Hardware - Hex Bolts	
			A	BC	C	D	E	F	P	Qty	Size
3	SFUP3	13	4.10"	6.00"	0.70"	5.00"	2.37"	4.06"	8.88"	4	5/8 x 5 1/2
4	SFUP4	19	4.45"	7.50"	0.70"	5.50"	2.43"	4.90"	9.59"	8	5/8 x 5 1/2
6	SFUP6	28	4.68"	9.50"	0.80"	6.00"	2.45"	7.00"	11.69"	8	3/4 x 6
8	SFUP8	37	4.76"	11.75"	0.90"	6.00"	2.52"	9.15"	13.84"	8	3/4 x 6
10	SFUP10	58	4.77"	14.25"	1.00"	6.25"	2.52"	11.20"	16.23"	12	7/8 x 6 1/4
12	SFUP12	66	4.88"	17.00"	1.00"	6.25"	2.52"	13.30"	18.33"	12	7/8 x 6 1/4
14	SFUP14	80	5.15"	18.75"	1.30"	7.50"	2.53"	15.44"	20.58"	12	1 x 7 1/2
16	SFUP16	109	5.52"	21.25"	1.30"	7.50"	2.67"	17.54"	22.41"	16	1 x 7 1/2
18	SFUP18	124	5.52"	22.75"	1.30"	8.50"	2.96"	19.64"	24.70"	16	1 1/8 x 8 1/2
20	SFUP20	160	5.43"	25.00"	1.30"	8.50"	2.89"	21.74"	27.10"	20	1 1/8 x 8 1/2
24	SFUP24	209	5.41"	29.50"	1.30"	9.00"	2.95"	25.94"	31.26"	20	1 1/4 x 9
30	SFUP30	402	7.4"	36.00"	2.00"	11.00"	3.60"	32.00"	38.8"	28	1 1/4 x 11
36	SFUP36	583	7.14"	42.75"	2.00"	11.5"	3.60"	38.3"	46.6"	32	1 1/2 x 11 1/2

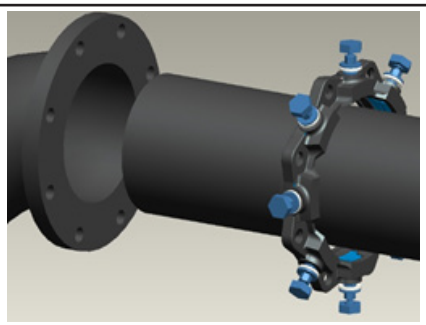
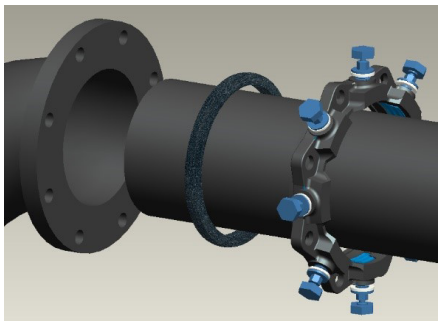
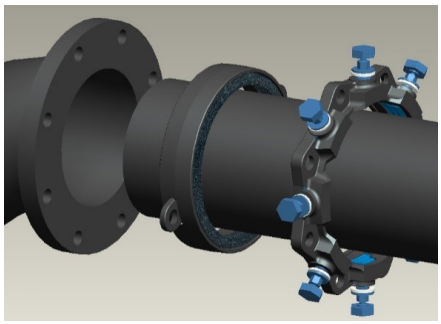
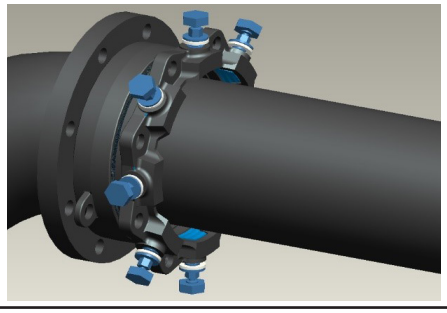
SIGMAFLANGE™ Universal Joint Pack - Weight

Item #	Description	Adapter Ring			Restraint			Hex Bolts		Gasket		SFUP
		Qty	Item #	Wgt (lbs)	Qty	Item #	Wgt (lbs)	Qty	Wgt (lbs)	Item #	Qty	Wgt (lbs)
SFUP3	3 SIGMA Flg Unv JT Pack	1	SAR3	2	1	SLGU3	10	4	2.4	MGS3	1	14
SFUP4	4 SIGMA Flg Unv JT Pac	1	SAR4	4	1	SLGU4	10	8	5	MGS4	1	19
SFUP6	6 SIGMA Flg Unv JT Pac	1	SAR6	6	1	SLGU6	16	8	6.4	MGS6	1	28
SFUP8	8 SIGMA Flg Unv JT Pac	1	SAR8	10	1	SLGU8	21	8	6.4	MGS8	1	37
SFUP10	10 SIGMA Flg Unv JT Pack	1	SAR10	14	1	SLGU10	30	12	14.4	MGS10	1	58
SFUP12	12 SIGMA Flg Unv JT Pack	1	SAR12	17	1	SLGU12	34	12	14.4	MGS12	1	67
SFUP14	14 SIGMA Flg Unv JT Pac	1	SAR14	25	1	SLGU14	37	12	18	MGS14	1	80
SFUP16	16 SIGMA Flg Unv JT Pac	1	SAR16	30	1	SLGU16	47	16	32	MGS16	1	109
SFUP18	18 SIGMA Flg Unv JT Pac	1	SAR18	27	1	SLGU18	57	16	40	MGS18	1	124
SFUP20	20 SIGMA Flg Unv JT Pack	1	SAR20	32	1	SLGU20	68	20	60	MGS20	1	160
SFUP24	24 SIGMA Flg Unv JT Pack	1	SAR24	44	1	SLGU24	85	20	80	MGS24	1	209
SFUP30	30 SIGMA Flg Unv JT Pack	1	SAR30	89	1	SLGU30	153	28	135	MGS30	1	375
SFUP36	36 SIGMA Flg Unv JT Pack	1	SAR36	117	1	SLGU36	211	32	250	MGS36	1	577

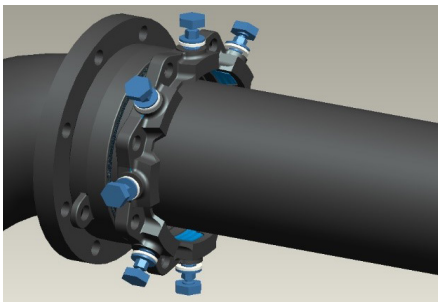
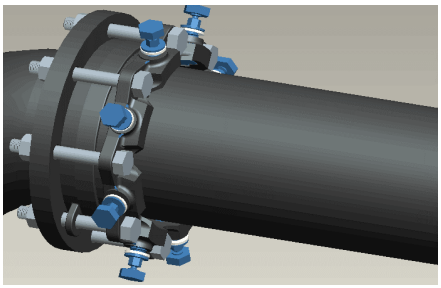
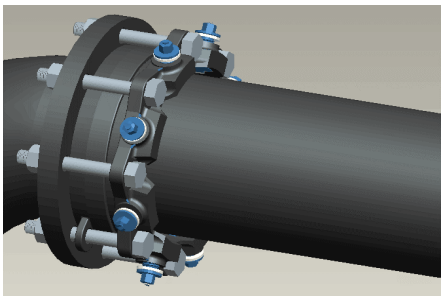
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SIGMAFLANGE™ Universal Joint for Flanged Fittings, Flanged Pipes & Valves

Installation Instructions:

1. Identify the type of pipe being used. Sigma Flange Universal joint, sizes 3" – 36", is designed to work on ductile iron pipe, AWWA C900 C909 PVC, and ASTM D2241 "IPS" PVC pipe and steel pipe. For use on ductile iron pipe or AWWA C900 PVC pipe, the restraints should be installed as received. If the pipe is ASTM D2241 "IPS" or steel pipe, REMOVE THE WHITE PLASTIC SPACERS from the break-off top actuating bolts on the restraint gland before assembly. The 3" Universal Joint is designed for use on ductile iron and "IPS" PVC pipe and do not have spacers.	
2. Cut the pipe to the required length, clean the end of the pipe for the length that needs to be inserted using a wire brush if needed to remove all excess paint, debris & foreign material. Also clean the opposing flange face to be connected to the Sigma Universal joint. Slide the restrainer gland on to the cleaned end of the pipe with the lip facing the plain end.	
3. Lubricant the plain-end of pipe and gasket, then slide the Sigma Seal gasket onto the pipe. **(Transition gasket needs to be used for Steel & IPS OD PVC pipe.)**	
4. Insert the O-Ring into the groove of the Adapter ring if this is provided separately, if not make sure the O-Ring is in the correct position in the groove. Slide the Adapter Ring on the pipe with the O-Ring facing the plain end of the pipe and the gasket recess facing either the Sigma Seal gasket or transition gasket and restrainer gland.	
5. Join the pipe-end and flange together within the maximum assembled deflection and maximum allowable gap "C" to the flange face. Slide the adapter ring, gasket and restrainer gland until contact is made with the opposing flange.	

Installation Instructions (Continued):

6. Insert and hand-tighten all hex bolts in corresponding bolt holes. Torque the hex bolts in an alternating manner (star pattern) to the recommended requirements. Make any necessary adjustments for joint deflection before the break off bolts actuating bolts are tightened. Make sure the gap "C" is maintained to the specified dimension to ensure the end of the pipe is not separated from the joint.	
7. Hand-tighten the break-off bolts in an alternating manner (star pattern) until all wedges are in contact with the pipe surface. Tighten the heads in an alternating manner (star pattern) until the heads are sheared off.	
8. If removal is necessary, loosen the actuating wedge bolts using the remaining hex shank. To re-install the joint, repeat steps 2 through 7 and torque the hex shanks to the specified value.	

NOTE: WHEN USING SIGMA FLANGE UNIVERSAL JOINT WITH HDPE PIPE A PIPE STIFFENER/INSERT IS RECOMMENDED TO BE USED AND PLACED DIRECTLY BELOW THE POSITION OF THE WEDGE RESTRAINING GLAND.

Nominal Pipe Size	Hex Bolt Torque	Break-off Head Torque
3"	45 - 60 ft-lbs	55 - 65 ft-lbs
4"	75 - 90 ft-lbs	70 - 80 ft-lbs
6"		
8"	90 - 110 ft-lbs	
10"		
12"		
14"		
16"		
18"		
20"		
24"		
30"	120 ft-lbs	100 ft-lbs
36"	120 ft-lbs	100 ft-lbs

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Line Card

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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

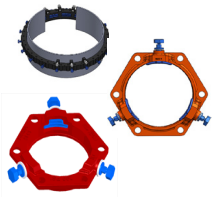
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Mechanical Joint Accessories



- Prepackaged and Loose Mechanical Joint Accessories
- SIGMASEAL™ Improved Mechanical Joint Gasket
- Snap-On Multi-Purpose Gasket for Ductile Iron or PVC Pressure Pipes
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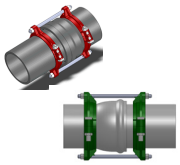
ONE-LOK™ Wedge Action Restraints



- 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
- 3-12” ONE-LOK Series SLO

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- 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
- 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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- Storm Inlets
- Valve Boxes, Risers, and Extensions

Products for the Ductile Iron Fabricator



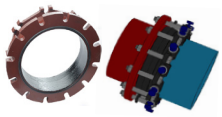
- 3-64” High Hub Threaded Flanges
- 3-48” Tapped High Hub Threaded Flanges
- 3-36” Extra Heavy 250lb Drilled Threaded Flanges
- 3-48” Threaded MJ Bell Adapters
- 3-48” MJ x PE Bell adapter
- 3-48” Anchor Flanges
- 3-16” Filler Flanges

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
- 2-12” ZIP FLANGE Set Screw Style Flange Adapter
- 3-36” SIGMAFLANGE Universal Joint for Flanged Fittings, Flanged Pipes & Valves

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