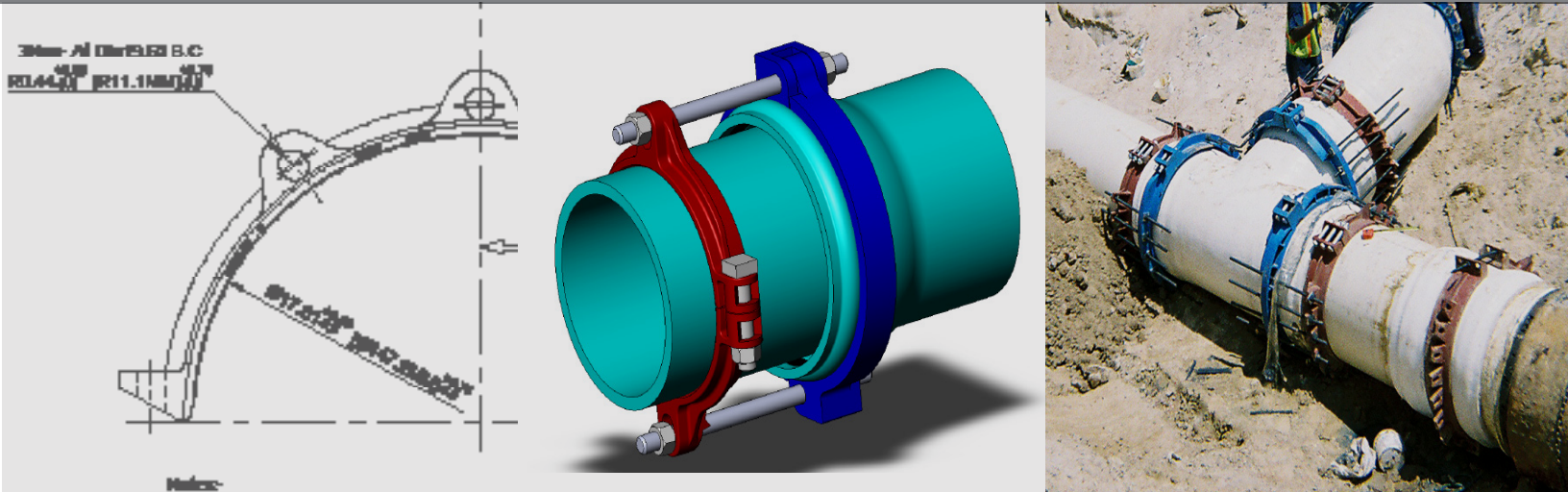


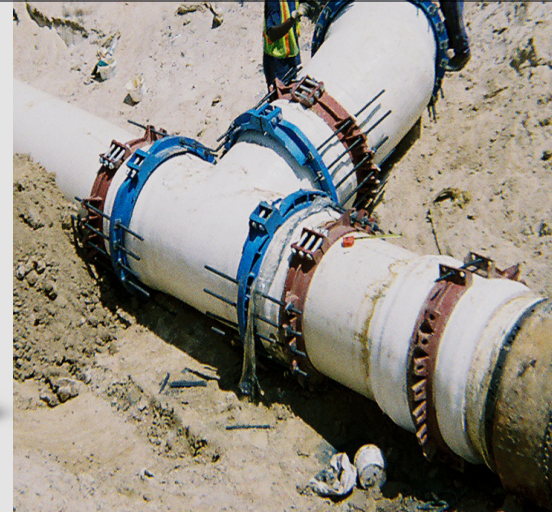
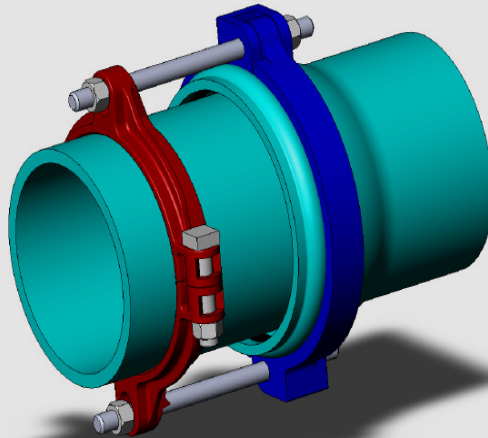
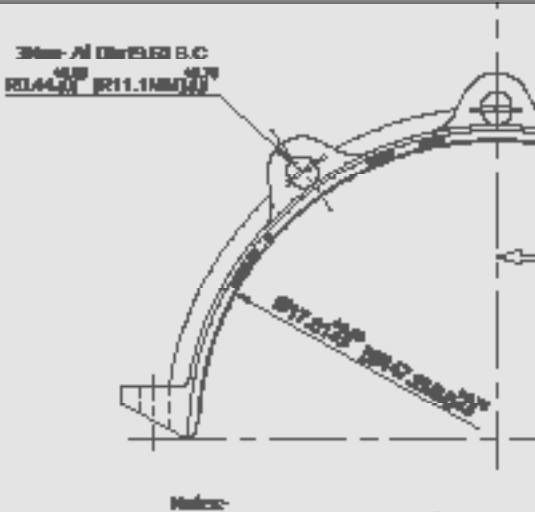
PV-LOK MODEL PWPF RESTRAINT FOR AWWA C900/905 PVC PIPE & PVC FITTING



PRODUCT SPECIFICATIONS

- MATERIAL:**
- Machine-serrated clamping ring and non-serrated, beveled back-up ring are manufactured of high strength ductile iron in accordance with ASTM A536, Grade 65-45-12.
 - Side clamping bolts and hex nuts are manufactured of high strength steel in accordance with ASTM A449 and zinc-plated to B663, Type III Sec.1 for corrosion resistance.
- SIZE RANGE:**
- 4" through 48"
- DIMENSION:**
- Manufactured in accordance with AWWA C900/905 PVC pipe and pressure fittings
- PRESSURE RATINGS:**
- Equal to the water working pressure rating of the pipe upon which it is installed with a minimum 2:1 factor of safety.
- COATING:**
- Red Alkyd paint
 - Electro-deposition "CORRSAFE™" available upon request. For further information, please refer to our CORRSAFE Product Information sheet at <http://www.sigmaco.com/pipe-restraint-product-coatings-linings/>
- APPROVALS:**
- Factory Mutual approved on sizes 4", 6" & 8"
- DEFLECTION:**
- Maintains the allowable nominal deflection within the PVC pipe manufacturer's recommendation for AWWA C900/905 PVC pipe to PVC fitting bell.
- TRACEABILITY:**
- Machine-serrated clamping ring and non-serrated, beveled back-up ring are individually cast with exact heat code information.
- INSTALLATION:**
- In accordance with manufacturer's recommendation and applicable AWWA standards.

PV-LOK™ Series PWPF for PVC Fitting Restraint (CIOD)



Features & Advantages:

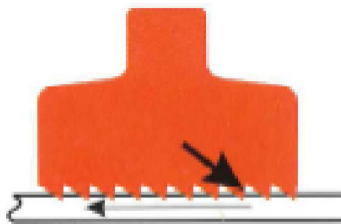
The PV-LOK™ Series PWPF restrainer incorporates a series of machined serrations that effectively engage PVC pipe walls, to provide positive joint security and full support of the pipe. The directional gripping action maximizes restraint during increased line pressures such as those resulting from surges and water hammers. The Series PWPF incorporates a PV-LOK clamping ring, restraining rods, and two piece beveled back up ring for the PVC fitting to provide the necessary joint restraint.

Sample Specification:

Restraint devices for joining plain end PVC pipe to gasketed PVC pressure fittings shall consist of a split clamping ring that incorporates a series of machined serrations (not “as cast”), providing positive restraint, exact fit and full support of the pipe wall. Restraining rods and nuts shall connect the restrained pipe end to a two-piece, beveled backup ring that seats comfortably behind the PVC gasketed fitting bell. In applicable sizes, the interlocking ear or two piece design on the back-up ring shall provide tongue-and-groove seating to eliminate flexing under increased pressure and surges. In applicable sizes, the multi-part back-up ring shall utilize side clamping bolts to assemble behind the fitting bell. Devices shall carry a minimum 2:1 safety factor and meet or exceed the recognized testing standards for restrained joints on PVC pressure pipe and offer factory certification and independent test results. Restraint devices for joining PVC pipe to PVC gasketed pressure fittings shall be SIGMA PV-LOK™ Series PWPF or approved equal.

Material:

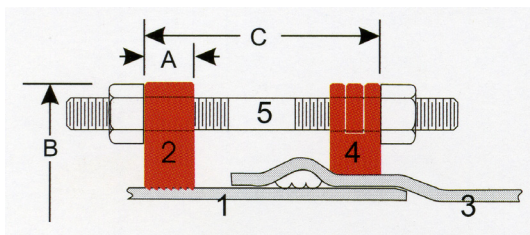
- Serrated Clamping Ring and beveled backup ring: ASTM A536 65-45-12 ductile iron.
- Side Clamping Bolts and Hex Nuts: ASTM A449 high strength steel, zinc-plated.
- Restraining Rods and Hex Nuts: High strength low alloy steel (AWWA/ANSI C111/A21.11) 45,000 psi yield / 60,000 psi tensile.



Cross Section of PV-LOK illustrates directional grip of serrations to maximize restraint of PVC pipe.



PV-LOK™ Series PWPF for PVC Fitting Restraint (CIOD)



1. Plain End PVC Pipe
2. PV-LOK Restrainer Clamp
3. PVC Fitting Bell
4. PVPF Beveled Back-up Ring
5. Restraining Rod

Dimensions in Inches, Weights in Pounds:

Size	For PVC Pipe with DI Pipe O.D.	DI Pipe OD	A	B	C (max)	Clamping Bolt Torque	Weight
	Item No.						
4	PWPF-C4	4.80	1.25	9.13	10	100	13.5
6	PWPF-C6	6.90	1.25	11.75	10	100	17.0
8	PWPF-C8	9.05	1.50	14.13	10	100	24.0
10	PWPF-C10	11.10	1.75	16.88	15	125	45.0
12	PWPF-C12	13.20	1.75	19.12	15	125	49.0
14	PWPF-C14	15.30	3.00	21.60	15	130	102.5

PV-LOK products are rated with a working pressure equal to that of the PVC pipe to which they are applied.

Pressure Rating:

Nominal Pipe Size	Item #	Pressure Rating												
		C900			ASTM D2241			C905						
		DR14	DR18	DR25	SDR17	SDR21	SDR26	DR18	DR21	DR25	DR32.5	DR41	DR51	DR14
4	PWPF-4	305	235	165	250	200	160	-	-	-	-	-	-	-
6	PWPF-6	305	235	165	250	200	160	-	-	-	-	-	-	-
8	PWPF-8	305	235	165	250	200	160	-	-	-	-	-	-	-
10	PWPF-10	305	235	165	250	200	160	-	-	-	-	-	-	-
12	PWPF-12	305	235	165	250	200	160	-	-	-	-	-	-	-
14	PWPF-14	-	-	-	-	-	-	235	200	165	125	100	-	305
16	PWPF-16	-	-	-	-	-	-	235	200	165	125	100	-	305
20	PWPF-20	-	-	-	-	-	-	235	200	165	125	100	80	-
24	PWPF-24	-	-	-	-	-	-	235	200	165	125	100	80	-
30	PWPF-30	-	-	-	-	-	-	-	-	165	125	100	80	-
36	PWPF-36	-	-	-	-	-	-	-	-	165	125	100	80	-
42	PWPF-42	-	-	-	-	-	-	-	-	-	-	-	-	-
48	PWPF-48	-	-	-	-	-	-	-	-	-	-	-	-	-

Contact Sigma for sizes 18"-48"

Installation Instructions:

1. Assemble plain-end PVC pipe and PVC pressure fitting according to pipe manufacturer's recommendations.
2. Install the non-serrated, two-piece interlocking ring set behind the gasketed bell of the PVC fitting. The bevel of this ring set should face the end of the fitting, allowing the retainer ring to seat evenly against the fitting bell.
3. Insert the restrainer rods through the retainer ear back toward the pipe and mark a reference line approximately 2 inches in from the rod end. Install the serrated clamping ring at this mark, making sure the protrusions on the restrainer ears face toward the fitting bell to insure proper direction of the angled serrations. Tighten the side clamping bolts to recommended torque.
4. Insert the restrainer rods provided and snug the retaining nuts behind the ears on both the clamping ring (against the flat surface) and back-up ring. Do not over-tighten retaining nuts, approximately one turn with a wrench.

LOCATIONS

Northeast Region

Cream Ridge, New Jersey (HQ)

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

REPCO

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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
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Alexander City, AL 35010
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Fax (256) 234-4956
alxcscr@sigmaco.com

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5000 Askins Lane
Houston, TX 77093
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Fax (281) 987-0200
htncscr@sigmaco.com

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Ontario, CA 91761
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Fax (909) 391-2033
ontcsr@sigmaco.com

Auburn, Washington (Branch)

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Auburn, WA 98001
Phone (800) 688-6230
Fax (909) 391-2033
ontcsr@sigmaco.com

www.sigmaco.com

Terms and Conditions of Sales available at our website.

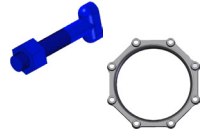
AWWA Ductile Iron Fittings



- 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
- 4-12" Ductile Iron Mechanical Joint Connector
- C116 Fusion Bonded Epoxy Lining Available
- PROTECTO 401® Ceramic Epoxy Lining Available

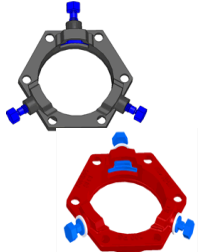
Visit our website for available special coatings. <http://www.sigmaco.com/fittings-coatings-linings/>

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

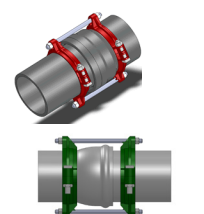


- 3-48" ONE-LOK D-SLDE Domestic Wedge Restraint for Ductile Iron Pipe
- 3-64" ONE-LOK SLDE Wedge Restraint for Ductile Iron Pipe (Import)
- 4-48" ONE-LOK T-SLDE Tandem Wedge Restraint for High Pressure Ductile Iron Pipe
- 3-36" ONE-LOK D-SLCE Domestic Wedge Restraint for PVC Pipe
- 3-36" ONE-LOK SLCE Wedge Restraint for PVC Pipe (Import)
- 3-36" ONE-LOK SLDEH Wedge Harness Restraint for Ductile Iron Pipe
- 4-12" / 20" ONE-LOK SLDM Wedge Restraint for Oversized Cast Iron Pipe
- 3-36" 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

Visit our website for available special coatings.

<http://www.sigmaco.com/pipe-restraint-product-coatings-linings/>

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
- 4-48" 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
- 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

Visit our website for available special coatings.

<http://www.sigmaco.com/pipe-restraint-product-coatings-linings/>

Flange Adapters



- 3-36" SIGMAFLANGE Flange Adapter Sleeve for PVC and Ductile Iron Pipe
- 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
- 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