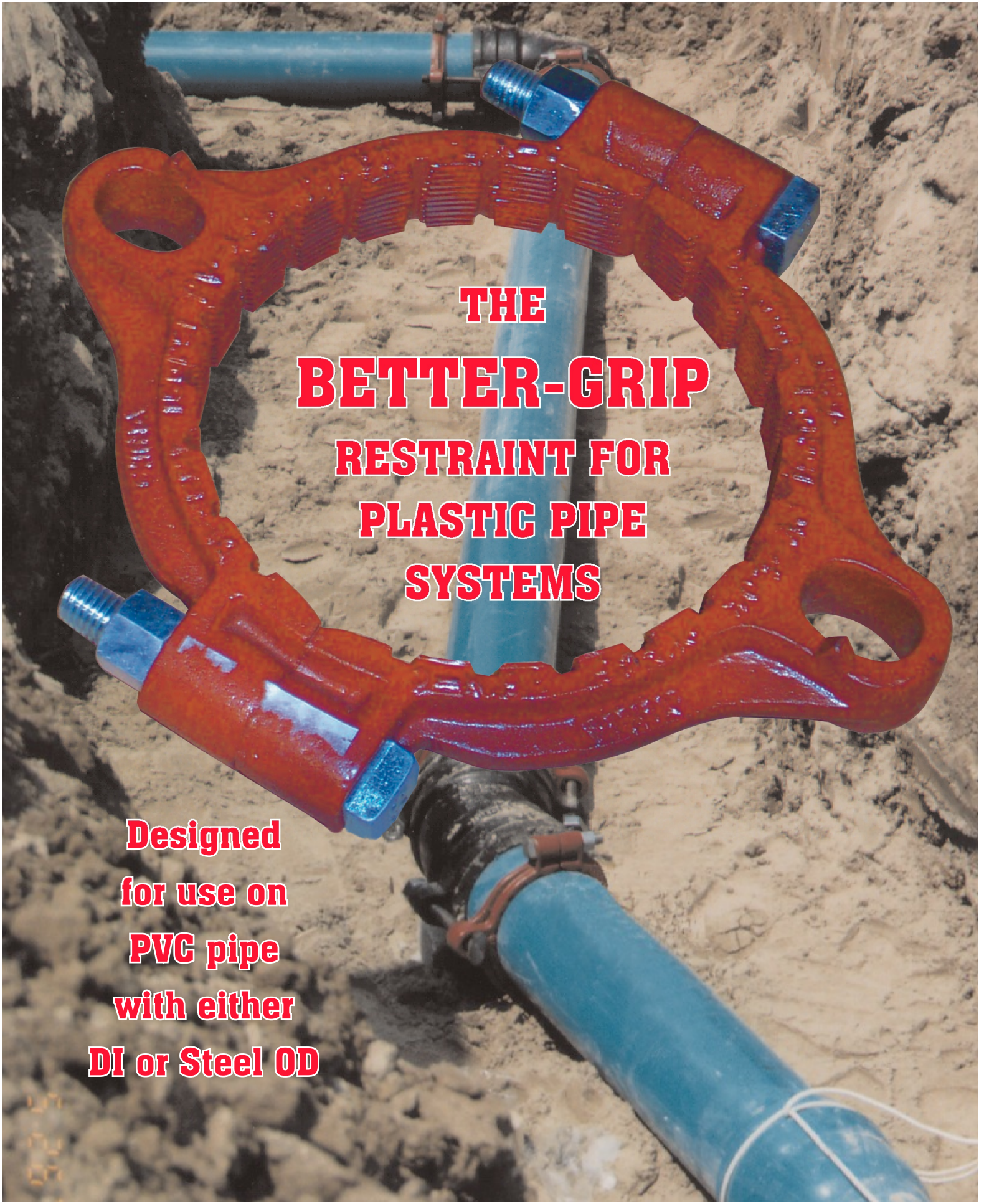
SIGMA

PV-LOK™



THE BETTER-GRIP RESTRAINT FOR PLASTIC PIPE SYSTEMS

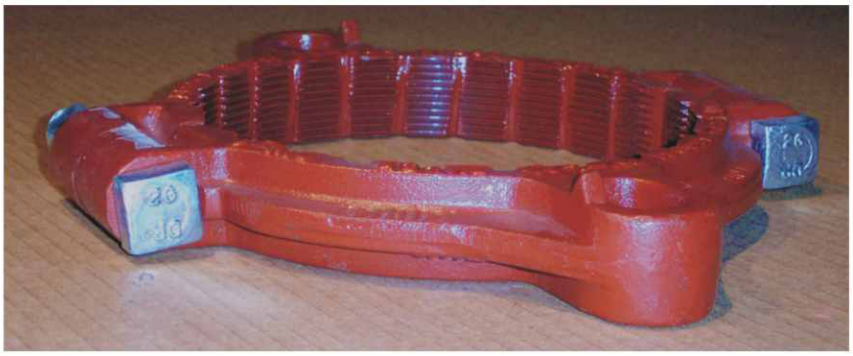
Designed for use on PVC pipe with either DI or Steel OD

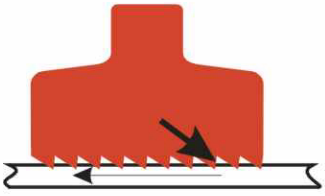
PV-LOK™

SIGMA

IMPROVED GRIPPING SURFACE

PV-LOK restrainers incorporate a series of machined (not as cast) interrupted 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.





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

HIGH STRENGTH CLAMPING RING

PV-LOK restrainers are high strength, heavy design ductile iron restraining rings that provide greater resistance to stress, pressure surges and water hammers in pressure-bearing PVC piping. They are designed to work on all classifications of PVC pipe and accommodate their full rated water working pressure.

VISUAL INSTALLATION INDICATORS

PV-LOK restrainers provide installation indicators that are cast on the clamping ring to simplify assembly and assure proper orientation of the directional serration-lock surface. We incorporate a "tab" on each restraining ear that faces the watermain fitting or additional clamping ring on pipe bell connections. In addition, we provide cast lettering on the opposite side of the ear -"NUT SIDE" - indicating the location of the restraining nut. All packaged PV-LOK restrainers contain installation instructions which explain these features.

LOCKING HEAD BOLT DESIGN

PV-LOK restrainers are manufactured with an extended fitting rib along the outside surface of the clamping ring. This prevents the bolt head from rotating and allows the installer to secure the restrainer on the pipe with only ONE wrench. The anti-rotation feature makes installation of the PV-LOK faster and easier, especially on installations where access space is limited. The structural ribbing also increases the strength and performance of PV-LOK restrainers.

◀ FM ▶
APPROVED
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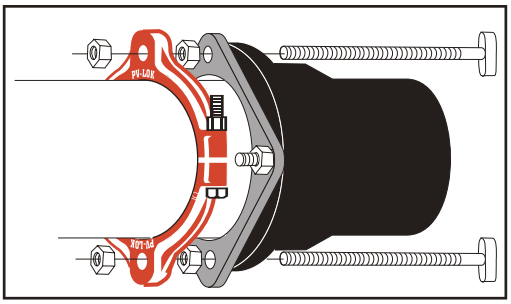
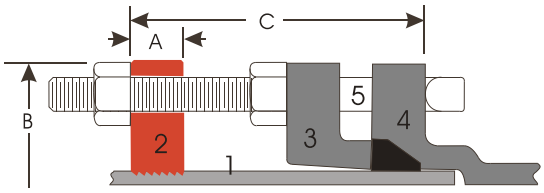
Restrain PVC Pipe to Mechanical Joint or Push-on (with Ear Lug) Watermain Fittings

SERIES PVM



16" Series PVM restrainers completing 45° vertical offset above ground for bridge crossing at Regional Municipality of Sudbury, Ontario, Canada



1. Plain end PVC pipe
2. Restrainer Clamp
3. Standard MJ Gland
4. Standard MJ Bell of Fitting, Valve, etc.
5. Extra Long T Bolt

PVM SERIES (for PVC Pipe to Mechanical Joints)

Pipe Size	Item No.	PVC Pipe w/DI Pipe O.D.	Item No.	PVC Pipe w/STEEL Pipe O.D.	A	B	C (max)	Restraining Rods		Clamping Bolts			Wt
								No.	Size	No.	Size	Min. torque	
2	-	-	PVM-S2	2.38	1.25	6.25	4.0	2	5/8x5	2	5/8x4	85	5
3	-	-	PVM-S3	3.50	1.25	7.69	4.0	2	5/8x5	2	5/8x4	85	6
4	PVM-C4	4.80	PVM-S4	4.50	1.25	9.13	6.0	2	3/4x7	2	5/8x4	100	8
6	PVM-C6	6.90	PVM-S6	6.63	1.25	11.75	6.0	2	3/4x7	2	5/8x4	100	10
8	PVM-C8	9.05	PVM-S8	8.63	1.50	14.13	6.0	2	3/4x7	2	3/4x4-1/2	100	15
10	PVM-C10	11.10	PVM-S10	10.75	1.75	16.88	8.0	4	3/4x9	2	7/8x5	125	24
12	PVM-C12	13.20	PVM-S12	12.75	1.75	19.25	8.0	4	3/4x9	2	7/8x5	125	27
14	PVM-C14	15.30	-	-	4.00	22.00	15.0	6	3/4x18	4	7/8x6-3/4	150	60
16	PVM-C16	17.40	-	-	4.00	24.20	15.0	6	3/4x18	4	7/8x6-3/4	150	70
18	PVM-C18	19.50	-	-	5.00	26.50	15.0	8	3/4x18	4	1x6- 3/4	150	98
20	PVM-C20	21.60	-	-	6.00	28.60	22.0	8	3/4x24	4	1-1/4x8-1/2	175	140
24	PVM-C24	25.80	-	-	6.00	32.50	22.0	12	3/4x24	4	1-1/4x8-1/2	175	176
30	PVM-C30	32.00	-	-	9.00	42.75	22.0	14	1x24	6	1-1/4 x8-1/2	200	400
36	PVM-C36	38.30	-	-	9.00	50.25	22.0	14	1x24	6	1-1/4 x8-1/2	200	450
42	PVM-C42	44.50	-	-	10.98	57.07	32.0	16	1-1/4x36	12	1-1/2x9	225	758
48	PVM-C48	50.80	-	-	10.98	63.37	32.0	16	1-1/4x36	12	1-1/2x9	225	790

Dimensions in inches, Weights in pounds, Torques in foot-pounds

Material:

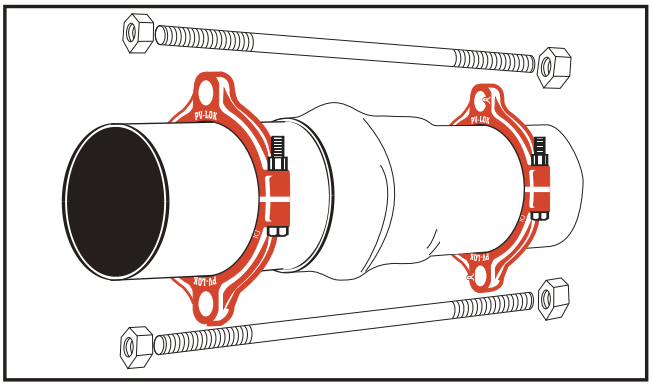
- Clamping ring is manufactured of high strength ductile iron in accordance with ASTM A536, grade 65-45-12.
- Side clamping bolts and hex nuts are high strength steel in accordance with ANSI A449 and zinc-plated to ASTM B633, Type III Sc.1 for corrosion resistance.
- Extra long T-head bolts and nuts are high strength, low alloy steel in accordance with AWWA/ANSI C111/A21.11. Restraining rods and heavy hex nuts are of high strength, low alloy steel in accordance with AWWA/ANSI C111/A21.11. T-head bolts and restraining rods provide a minimum 45,000 psi yield and 60,000 psi tensile strength.

Suggested Specification:

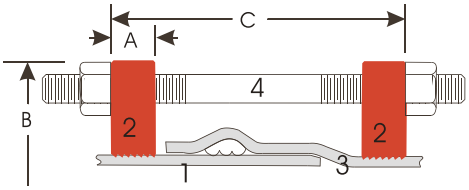
Restraint devices for joining plain end PVC pipe to either mechanical joint or push-on joint with ear lug watermain fittings shall consist of a split retainer ring that incorporates a series of machined serrations that provide positive restraint, exact fit and full support of the pipe wall. The restraint device shall provide the necessary bolts and nuts to complete the watermain fitting assembly. Devices shall meet or exceed the recognized testing for restrained joints on PVC presssure pipe and offer factory certification and independent test results. Restraint devices for securing PVC pipe to mechanical joint/push-on joint watermain fittings shall be SIGMA Series PVM or approved equal.

Restrain PVC Pipe Bell and Spigot Joints

SERIES PVP



8" Series PVP restrainer installed by Kenborough Contracting on AWWA C-900 DR 18 PVC pipe in the Town of Markham, Ontario, Canada.



1. Plain end PVC pipe
2. Restrainer Clamp
3. Bell End PVC Pipe
4. Restraining Rod

PVP SERIES (for PVC Bell & Spigot Joints)

Pipe Size	Item No.	PVC Pipe w/DI Pipe O.D.	Item No.	PVC Pipe w/STEEL Pipe O.D.	A	B	C (max)	Restraining Rods		Clamping Bolts			Wt
								No.	Size	No.	Size	Min. torque	
2	-	-	PVP-S2	2.38	1.25	6.25	10.0	2	5/8x12	4	5/8x4	85	10
3	-	-	PVP-S3	3.50	1.25	7.69	10.0	2	5/8x12	4	5/8x4	85	12
4	PVP-C4	4.80	PVP-S4	4.50	1.25	9.13	13.0	2	3/4x18	4	5/8x4	100	17
6	PVP-C6	6.90	PVP-S6	6.63	1.25	11.75	13.0	2	3/4x18	4	5/8x4	100	21
8	PVP-C8	9.05	PVP-S8	8.63	1.50	14.13	13.0	2	3/4x18	4	3/4x4-1/2	100	31
10	PVP-C10	11.10	PVP-S10	10.75	1.75	16.88	16.0	4	3/4x24	4	7/8x5	125	51
12	PVP-C12	13.20	PVP-S12	12.75	1.75	19.25	22.0	4	3/4x24	4	7/8x5	125	57
14	PVP-C14	15.30	-	-	4.00	22.00	22.0	6	3/4x30	8	7/8x6-3/4	150	113
16	PVP-C16	17.40	-	-	4.00	24.20	22.0	6	3/4x30	8	7/8x6-3/4	150	133
18	PVP-C18	19.50	-	-	5.00	26.50	22.0	8	3/4x30	8	1x6-3/4	150	187
20	PVP-C20	21.60	-	-	6.00	28.60	22.0	8	3/4x36	8	1-1/4x8-1/2	175	264
24	PVP-C24	25.80	-	-	6.00	32.50	22.0	12	3/4x36	8	1-1/4x8-1/2	175	328
30	PVP-C30	32.00	-	-	9.00	42.75	38.0	14	1x40	12	1-1/4 x8-1/2	200	735
36	PVP-C36	38.30	-	-	9.00	50.25	38.0	14	1x40	12	1-1/4 x8-1/2	200	830
42	PVP-C42	44.50	-	-	10.98	57.07	46.0	16	1-1/4x48	24	1-1/2x9	225	1,400
48	PVP-C48	50.80	-	-	10.98	63.37	46.0	16	1-1/4x48	24	1-1/2x9	225	1,460

Dimensions in inches, Weights in pounds, Torques in foot-pounds

Material:

- Clamping ring is manufactured of high strength ductile iron in accordance with ASTM A536, grade 65-45-12.
- Side clamping bolts and hex nuts are high strength steel in accordance with ASTM 449 and zinc-plated to B633,Type III Sc. 1 for corrosion resistance.
- Restraining rods and hex nuts are of high strength, low alloy steel in accordance with AWWA/ANSI C111/A21.11 and provide a minimum 45,000 psi yield and 60,000 psi tensile strength.

Suggested Specification:

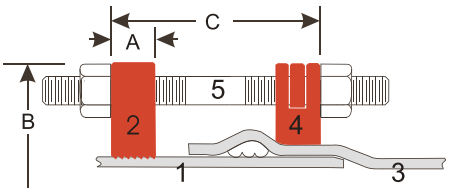
Restraint devices for bell and spigot joints of PVC pipe shall consist of two split retainer rings. One clamping ring shall be installed on the spigot pipe, and with the necessary restraining rods and nuts, connected to a second clamping ring located on the pipe barrel behind the gasketed bell. Restraint devices shall incorporate a series of machined serrations that provide positive restraint, exact fit and full support of the pipe wall.

The restraint device shall provide the necessary bolts and nuts to complete the PVC pipe bell assembly. Devices shall meet or exceed the recognized testing for restrained joints on PVC presssure pipe and offer factory certification and independent test results. Restraint devices for securing PVC pipe bell assemblies shall be SIGMA Series PVP or approved equal.

Restrain PVC pipe to PVC gasketed pressure fittings

Series PVPF
Fast, Versatile & Reliable

Manufactured to the dimensional requirements for joining AWWA C-900 PVC pipe to AWWA C-907/905 PVC pressure fittings and ASTM D2241 PVC pipe to ASTM D1784 PVC pressure fittings.



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

Series PVPF offers fast and easy assemblies when joining PVC pipe and PVC pressure fittings. Unlike conventional gland and gasketed mechanical joints, a quick two-bolt connection secures the self-compressing gasketed fitting. SIGMA's two-piece retaining ring fits *EVERY* manufactured fitting *WITHOUT ANY MODIFICATION,* thus avoiding job-site installation difficulties and delays.

PVPF Series (for joining PVC Pipe to PVC Pressure Fittings)

Pipe Size	For PVC Pipe with DI Pipe O.D.		For PVC Pipe with IPS Pipe O.D.		A	B	C (max)	Restraining Rods		Clamping Bolts			Wt.
	Item No.	Diameter	Item No.	Diameter				No.	Size	No.	Size	Min. Torque	
4	PVPF-C4	4.80	PVPF-S4	4.50	1-1/4	9-1/8	10	2	3/4x12	2	5/8x4	100	13.5
6	PVPF-C6	6.90	PVPF-S6	6.625	1-1/4	11-3/4	10	2	3/4x12	2	5/8x4	100	17.0
8	PVPF-C8	9.05	PVPF-S8	8.625	2	14-1/8	10	2	3/4x12	2	3/4x4-1/2	100	24.0
10	PVPF-C10	11.10			2	16-7/8	15	4	3/4x17	2	7/8x5	125	45.0
12	PVPF-C12	13.20			2	19-1/4	15	4	3/4x17	2	7/8x5	125	49.0

Dimensions in inches, Weights in pounds, Torques in foot-pounds

NOTE: Check Factory for 14" through 48" availability

Material:

- Serrated clamping ring and two-piece, 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 high strength steel in accordance with ASTM A449 and zinc-plated to B633, Type III Sc. 1 for corrosion resistance.
- Restraining rods and hex nuts are of high strength, low alloy steel in accordance with AWA/ANSI C111/A21.11 and provide a minimum of 45,000 psi yield and 60,000 psi tensile strength.

Suggested 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 provided shall connect the restrained pipe end to a two-piece, beveled back-up ring that seats comfortably behind the PVC gasketed fitting bell. Interlocking ear design on the back-up ring shall provide tongue-and-groove seating to eliminate flexing under increased pressure and surges. In applicable sizes, the two-piece back-up ring shall utilize side clamping bolts to assemble behind the fitting bell. Devices shall 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 Series PVPF or approved equal.