



SIP Industries

Quality Manufacturers Since 1960

EZ GRIP®

JOINT RESTRAINT FOR PVC PIPE

The EZ GRIP®

Joint Restraint is a proven design, offering an efficient, reliable, and inexpensive method of restraining PVC Pipe with Mechanical Joint Pipe or appurtenances, by integrating a series of gripping wedges into a Mechanical Joint follower gland.



ADVANTAGES, BENEFITS, FEATURES

- The EZ GRIP® Joint Restraint eliminates clamps, tie rods, cables, and thrust blocks.
- The EZ GRIP® Joint Restraint performs optimally with all mechanical joint sockets of the ANSI/AWWA C111/A21.11, C110/A21.10, and C153/A21.53 Standards and may be used with 4" - 36" AWWA C900 (PVC), C906 (HDPE)*, C909 (PVCO) or 3"-12" ASTM D2241 IPS PVC Pipe.
- The EZ GRIP® Joint Restraint will allow joint deflection, and maintain the seal and restraint while under pressure, and while subjected to ground movements
- The EZ GRIP® Joint Restraint shall have a pressure rating equal to that of the PVC pipe and shall have a minimum safety factor of at least 2 to 1.
- The contoured wedges provide greater circumferential contact with the pipe wall and increase the grip as the hydrostatic pressure increases.
- The hex head of the actuating screw is the same size as a standard T-bolt nut (1 1/4"), and requires no tool other than the tool required to install a standard Mechanical Joint T-Bolt and Nut.
- The hex head of the torque control screw is designed to shear at a preset limit, assuring proper installation and to prevent damage to the PVC pipe.
- When the actuating screw is rotated in the correct direction (clockwise) the torque control head breaks off, exposing a 5/8" hex head, indicating proper deployment of the wedge.
- After removing the 1-1/4" torque control hex head, a 5/8" hex head remains for multiple disassembly and re-installation, if necessary.
- EZ GRIP® Joint Restraints offers 5° deflection up to sizes 12", 3° on 14"-24", 2° on 30"-36"
- The gland, wedges, and screws are manufactured from high strength Ductile Iron in compliance with the ASTM A536 Standard, Grade 65-45-12.
- The EZ GRIP® Joint Restraint is designed to perform optimally for potable and recycled water, and for wastewater applications.
- The EZ GRIP® Joint Restraint for PVC Pipe is provided with a coating that is compatible with most field applied coatings
- The standard color for the EZ GRIP® for PVC Pipe is red.
- Approved by Factory Mutual (FM) for sizes 4"-12" at 250psi for AWWA C900 Class 305 DR-14 pipe and at 200psi on AWWA C900 Class 235 DR-18 pipe. Listed with Underwriters Laboratories (UL) for sizes 4"-12" at 235psi on AWWA C900 Class 235 DR-18 pipe. Tested and approved for ASTM F1674 standard by UL.



Available:  Import

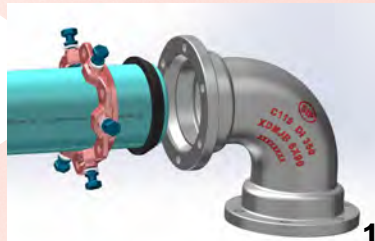
* AWWA C906 HDPE Pressure Pipes up to 12" by using internal pipe stiffeners. Contact SIP for further assistance.

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Installation Procedure

Installation Procedure for restraining mechanical joint appurtenances on PVC pipe



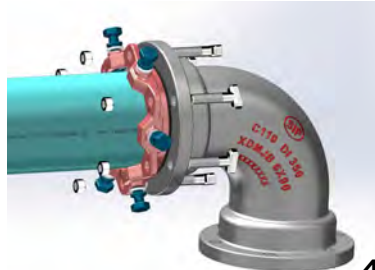
1



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5



6

1 Establish the type and diameter of the PVC pipe. If the PVC pipe is AWWA C900 or C909 then the spacer/washers on the actuating screws should remain. If the PVC pipe is IPS (Steel OD) then the spacer/washers should be removed and a Transition Gasket is required for proper sealing.

2 Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and the plain end with soapy water or an approved pipe lubrication meeting the requirement of ANSI/AWWA C111/A21.11, just prior to slipping the gasket onto the plain end for joint assembly. Place the gland on the plain end with lip extension toward the plain end, followed by the gasket.

NOTE: In cold weather it is preferable to warm the gasket to facilitate assembly of the joint.

3 Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.

4 Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Make deflection after joint assembly but before tightening bolts.

5 Tighten the bolts to the normal range of torque as per AWWA C600 (see table below), while at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolt first, then top bolt, next the bolts at either side, finally the remaining bolts. Repeat the process until all bolts are within the appropriate range of torque. The use of a torque-indicating wrench will facilitate this procedure. Over-tightening T-Head Bolts can damage the PVC pipe. Do not over-tighten the T-Head Bolts

6 Tighten the torque control hex heads clockwise until all the wedges are in firm contact with the pipe wall.

Tighten a torque control hex head ½ turn, and then continue tightening each torque control hex head 180° opposite the previously tightened hex head until all torque control hex heads have been twisted off.

If it is necessary to disassemble, a 5/8" hex head is provided on the wedge screws.

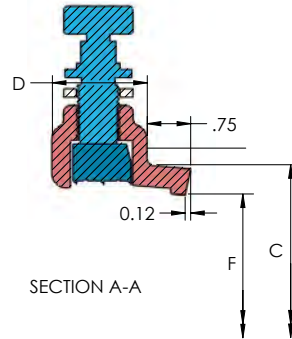
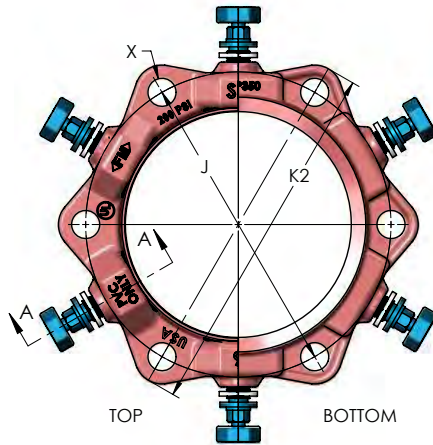
For re-installation, first confirm that all wedges are in their sockets, and then follow the installation instructions, using a torque indicating wrench to tighten the 5/8" hex head to 70 ft-lbs for sizes 3"-12", 80 ft-lbs for sizes 14"-24" and to 90 ft-lbs for sizes 30"-36".

BREAK-AWAY HEX NUT TORQUE RANGES	
SIZE (IN)	RANGE OF TORQUE (FT-LBS)
3 - 12	55 - 75
14 - 24	65 - 85
30 - 36	75 - 95

RECOMMENDED TORQUE (T-HEAD BOLTS & NUTS)*		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE OF TORQUE (FT-LBS)
3	5/8	45 - 60
4 - 24	3/4	75 - 90
30 - 36	1	100 - 120

* Requirement of AWWA C600

Technical Data



EZ-GRIP PVC RESTRAINTS SPECIFICATIONS

NOMINAL PIPE SIZE	SERIES NUMBER	C	D	F	X	J	K2	BOLT QTY	WEDGE QTY	APPROX. WEIGHT (LBS)
3	EZPVC03	4.84	1.60	4.06	3/4	6.19	7.96	4	4	7.50
4	EZPVC04	5.92	1.76	4.90	7/8	7.50	9.16	4	4	7.75
6	EZPVC06	8.02	1.75	7.00	7/8	9.50	11.12	6	6	11.40
8	EZPVC08	10.17	2.26	9.15	7/8	11.75	13.75	6	6	16.49
10	EZPVC10	12.22	2.32	11.20	7/8	14.00	15.91	8	8	22.10
12	EZPVC12	14.32	2.39	13.30	7/8	16.25	18.23	8	8	29.63
14	EZPVC14	16.40	2.29	15.44	7/8	18.75	20.75	10	10	48.70
16	EZPVC16	18.50	2.38	17.54	7/8	21.00	23.13	12	12	57.25
18	EZPVC18	20.60	2.39	19.64	7/8	23.25	25.25	12	12	61.45
20	EZPVC20	22.70	2.41	21.74	7/8	25.50	27.50	14	14	75.68
24	EZPVC24	26.90	2.50	25.94	7/8	30.00	32.13	16	16	92.92
30	EZPVC30	33.29	3.45	32.17	1 1/8	36.88	39.57	20	20	172.40
36	EZPVC36	39.59	3.70	38.47	1 1/8	43.75	46.34	24	24	218.88

All dimensions are in inches, unless stated otherwise

Please refer to our web page www.sipindustries.com for up to date product data and technical advisories

STANDARDIZED PRESSURE RATINGS									
Size	CI O.D.								
	ANSI/AWWA C900								
	DR14	DR17	DR18	DR21	DR25	DR27.5	DR32.5	DR41	DR51
4	305	250	235	200	165	-	-	-	-
6	305	250	235	200	165	-	-	-	-
8	305	250	235	200	165	-	-	-	-
10	305	250	235	200	165	-	-	-	-
12	305	250	235	200	165	-	-	-	-
14	305	250	235	200	165	150	125	-	-
16	305	250	235	200	165	150	125	-	-
18	250	250	235	200	165	150	125	-	-
20	250	250	235	200	165	150	125	-	-
24	250	250	235	200	165	150	125	-	-
30	-	-	225	200	165	150	125	100	80
36	-	-	-	200	165	150	125	100	80

STANDARDIZED PRESSURE RATINGS									
Size	CI O.D.								
	ANSI/AWWA C909 PVC0		AWWA C906 (HDPE*)						
	PC235	PC165	DR7.3	DR9	DR9.3	DR11	DR13.5	DR17	
4	235	-	254	200	193	160	130	100	
6	235	-	254	200	193	160	130	100	
8	235	-	254	200	193	160	130	100	
10	235	-	254	200	193	160	130	100	
12	235	-	254	200	193	160	130	100	
14	235	-	254	200	193	160	130	100	
16	235	165	-	200	193	160	-	-	
18	200	-	-	-	-	160	-	-	
20	-	-	-	-	-	160	-	-	

STANDARDIZED PRESSURE RATINGS									
Size	IPS O.D.								
	ASTM D2241			AWWA C901 & AWWA C906 (HDPE*)					
	SDR17	SDR21	SDR26	DR7.3	DR9	DR9.3	DR11	DR13.5	DR17
3	250	200	160	254	200	193	160	130	100
4	250	200	160	254	200	193	160	130	100
6	250	200	160	254	200	193	160	130	100
8	250	200	160	254	200	193	160	130	100
10	250	200	160	254	200	193	160	130	100
12	250	200	160	254	200	193	160	130	100

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SAMPLE SPECIFICATIONS

The mechanical joint restraining mechanism and the follower gland shall be designed and manufactured as one integral device providing for a joint seal and performing as a joint restraint. The mechanical joint restraint shall be compatible with AWWA C900, C906, C909 and ASTM D2241 PVC Pipe and shall be achieved by a series of individually activated, contoured wedges gripping the outside wall of the PVC Pipe. The mechanical joint restraint shall have the same pressure rating as the pipe with a 2:1 safety factor. The grip of the wedges shall increase as the hydrostatic pressure increases.

There shall be no additional tool required for installation other than the tool required to install a standard Mechanical Joint T-Bolt and 1-1/4" Nut. The hex head of the actuating screw shall be designed to break off at a preset torque, and only by tightening clockwise. After the removal of the 1-1/4" torque control hex head, a 5/8" hex head on the actuating screw shall remain, to allow for the disassembly and re-installation of the gland and restraint, if necessary.

The gland, screws, and wedges shall be manufactured of high strength ductile iron in accordance with the ASTM A536 Standard, Grade 65-45-12.

The restraining gland shall comply with all applicable dimensions of ANSI/AWWA C111/A21.11, C110/A21.10 and C153/121.53 and shall be compatible with all mechanical joint sockets of those standards, unless stated otherwise.

The EZ GRIP® mechanical joint restraint mechanism for PVC pipe shall be approved by Factory Mutual for sizes 4"-12" and listed by Underwriters Laboratories for sizes 4"-12". The restraint device for PVC Pipe shall be SIP Industries series EZP or equal.

Available: Import 



PRODUCT LINE

AWWA DI Fittings & Accessories

- C153 Compact MJ Fittings and Acc. 2" - 64"
- C110 Full Body MJ Fittings 2" - 64"
- C153 Trim Tyton® Push-On Fittings 4" - 24"
- C110 Flange Fittings 2" - 64"
- MJ x MJ Adapter for Connecting MJ Bells 3" - 24"
- Stainless Steel & Blue T-Bolts
- Made in India, China & Mexico
- Bare, Cement, Zinc, FBE & Other Linings

Joint Restraint System

- EZD Joint Restraint for DI Pipe 3" - 48"
- EZDTP Joint Restraint Tandem for DI Pipe 3" - 48"
- EZDPTP Joint Restraint for Push-On Joints DI Pipe 3" - 48"
- Ductile Iron Retainer Glands 3" - 30"
- FAR / FAH Flange Adapter for DI Pipe 3" - 48"
- EZFA Restrained Flange Adapter for DI and PVC Pipe 3" - 36"
- EZPVC Joint Restraint for PVC Pipe 3" - 36"
- ULTRA Joint Restraint for PVC Pipe 4" - 12"
- EZPVCPTP Joint Restraint for Push-On Joints PVC Pipe 14" - 36"
- PTPVC Pipe to Pipe Restraint 4" - 48"
- PTPDF Pipe to MJ Fittings Restraint 4" - 48"
- PTPFC Pipe to PVC Fittings Restraint 4" - 12"
- Made in China & USA
- EZ Shield or Shop Coating

Municipal Construction Castings

- Manhole Rings and Cover
- Frames and Grates
- Valve Boxes and Service Boxes
- Water Meter Covers and Boxes
- Cleanout and Monument Boxes
- Detectable Warning Plates
- Extension Rings
- Trench Grates and Tree Grates
- Made in India & USA

Fabrication Products for DI Pipe

- High Hub Flanges Class 150 and 250. 3" - 64"
- Threaded Bell Flanges 3" - 48"
- Anchor Flanges 3" - 60"
- Filler Flanges 4" - 30"

Other Products and Services

- All Thread Rod
- Pipe Lube and Hydraulic Cement
- Socket Clamps and Lugs
- Flange Packs
- OEM Castings



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