



Pipe Restrainers series 1000

1000C Restrainers for AWWA C900 PVC Pipe and MJ or Push-On Fittings

1000S Restrainer for IPS PVC and MJ or Push-On Fittings

Sizes 4" - 48"

4"- 12" SERIES 1000 INSTALLATION INSTRUCTIONS FOR MJ FITTINGS



STEP 1

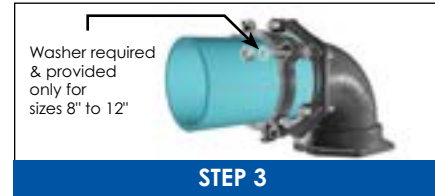
Insert pipe into the MJ fitting bell. Then insert one of the long T-bolts/rods provided through one of the holes. Mark a line 1 ¼" away from the end of the T-bolt/rod and towards the MJ bell as shown. Assemble the MJ joint using the gland, gasket and T-bolts to AWWA standards. Assemble the restrainer on the pipe while making sure restrainer ears line up with the bolt holes of the MJ gland. Evenly tighten the restrainer clamping bolts to recommended torque, ensuring the gap between pads on both sides remain even.



STEP 2

Insert one of the long T-bolts/rods provided, installing one nut each between the gland and the restrainer as shown. Follow the same procedure for remaining long T-bolts/rods. Tighten nuts against MJ Gland to AWWA standards. (See table for Tbolt/nut torque details)

RECOMMENDED TORQUE (CLAMPING BOLTS)	
PIPE SIZE (IN)	RANGE OF TORQUE (FT-LBS)
4"-12"	90-110



STEP 3

Washer required & provided only for sizes 8" to 12"

Place a washer (Provided and required only for sizes 8"-12") on each end of restrainer ear as shown. Snug the second nut on each long T-bolt/rod against the restrainer as shown. **Caution: Do not over - tighten restraining nuts. Turn nut to hand tight plus half turn.**

T-HEAD NUT & BOLT DETAILS		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE OF TORQUE (FT. LBS)
4"-12"	3/4	75-90

14"- 36" SERIES 1000 INSTALLATION INSTRUCTIONS FOR MJ FITTINGS



Figure A

Step 1: Insert pipe into the MJ fitting bell and assemble the MJ joint using the gland, gasket and T-bolts to A WW A standards. Leave out T -Bolts corresponding to restrainer ears on Series 1000.



Figure B

Step 2: Use one of the Restraint rods as a guide to position SERIES 1000 Restrainer. Mark a reference line such that the rod ends extend past each nut approximately 0.50". Assemble the restrainer on the pipe such that restrainer ears line up with the bolt holes of the MJ Gland. **Make sure that the open end of the restrainer ears are toward the joint.** Evenly tighten the restrainer clamping bolts to recommended torque, ensuring the gap between pads on both sides remain even.



Figure C

Step 3: Insert rods through bolt holes. Install one nut behind MJ fitting bell and another nut against the gland. Tighten these nuts and T-bolts to recommended torque as per T-head bolts and nuts torque details. Install washers and remaining nuts behind restrainer ears (**Caution: Do not over-tighten nuts. Turn nuts to hand tight plus half turn.**)

42"- 48" SERIES 1000 INSTALLATION INSTRUCTIONS FOR MJ FITTINGS

Step 1: (Figure A) Insert pipe into the MJ fitting bell and assemble the MJ joint using the gland, gasket and T-bolts to A WW A standards. Leave out T- Bolts corresponding to restrainer ears on Series 1000ST.

Step 2: (Figure B) Use one of the Restraint rods as a guide to position SERIES 1000ST Restrainer. Mark a reference line such that the rod ends extend past each nut approximately 0.50". Assemble the restrainer on the pipe such that restrainer ears line up with the bolt holes of the MJ Gland. **Make sure that the open end of the restrainer ears are toward the joint.** Evenly tighten the restrainer clamping bolts to recommended torque, ensuring the gap between pads on both sides remain even.

Step 3: (Figure C) Insert rods through bolt holes. Install chamfered nut behind MJ fitting bell and another nut against the gland. Tighten these nuts and T- bolts to recommended torque as per T- head bolts and nuts torque details. Install washers and remaining nuts behind restrainer ears (**Caution: Do not over-tighten nuts. Turn nuts to hand tight plus half turn.**)

(TABLE A) T-HEAD BOLT & NUT DETAILS			
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE ¹ OF TORQUE (FT-LBS)	PIPE
14-24	3/4	75-90	C900 PVC
14-16	3/4	75-90	DIP
30-36	1	100-120	C900 PVC
42-48	1 1/4	120-150	C900 PVC

(TABLE B) CLAMPING BOLTS RECOMMENDED TORQUE		
PIPE SIZE (IN)	RANGE OF TORQUE (FT-LBS)	PIPE
14-16	200 min.	C900 PVC
14-36	130 min.	DIP
42-48	300-350	C900 PVC

¹These torque ranges are requirements of AWWA C600

STAR[®] PIPE PRODUCTS



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1000S Restrainer for IPS PVC and MJ or Push-On Fittings
Sizes 4" - 12"

4"-12" SERIES 1000 INSTALLATION INSTRUCTIONS FOR PUSH-ON FITTINGS



STEP 1

Insert pipe into the fitting bell according to standard procedure.



STEP 2

Use one of the T-bolts (provided) as an alignment guide to position serrated restrainer on pipe. Leave sufficient room for threads on the rod ends to fully engage nuts (provided). Full engagement occurs when there are at least two threads showing past the nut on the bolt.



STEP 3

Assemble the restrainer on the pipe as shown above. Make sure that the entire length of all the serrations are in contact with the pipe before installing the clamping bolts. Tighten the clamping bolts evenly between 90 and 110 ft-lbs of torque. Make sure the gap between the bolt pads on both sides remain the same.



STEP 4

Insert the restraining T-bolts (provided) through the fitting lugs and the restrainer as shown. Snug tighten the nuts so that the spigot end is secured into the bell end.

CAUTION: Do not over-tighten restraint nuts. Turn nuts to hand tight plus half a turn.

Notes:

- Not recommended for use with Push-On fittings in sizes 14-inch and larger.

STAR® PIPE PRODUCTS