

Flexible Ball Joints for Water and Wastewater Pipelines



FLEX-912 (912FF0) for 12 inch Flanged fittings or pipe.

Features and Applications:

- Sizes 3 inch through 48 inch
- Hydrostatically tested prior to shipment
- Rated 350 PSI working water pressure (Sizes 30 inch and above rated at 250 PSI)
- Constructed of A536 Ductile Iron
- 15 mils of Fusion Bonded Epoxy coating of all 'wetted' parts
- 15° to 20° of deflection depending upon size
- Seals conform to the applicable requirements of ANSI/AWWA C111/A21.11

For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774.

Nominal Pipe Size	Series Number		Pressure Rating
	Flange by Flange	Mechanical Joint by Restrained Plain End	
3	903FF0	903MP0	350
4	904FF0	904MP0	350
6	906FF0	906MP0	350
8	908FF0	908MP0	350
10	910FF0	910MP0	350
12	912FF0	912MP0	350
14	914FF0	914MP0	350
16	916FF0	916MP0	350
18	918FF0	918MP0	350
20	920FF0	920MP0	350
24	924FF0	924MP0	350
30	Call for Availability		
36	936FF0	-	250
42	Call for Availability		
48	Call for Availability		

NOTE: For applications, end combinations, or pressures other than those shown, please contact EBAA for assistance.

Sample Specification

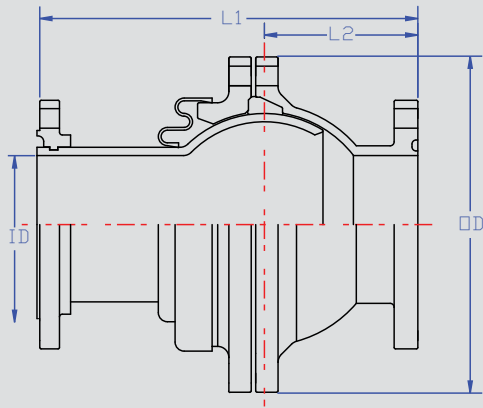
Flexible ball joints shall be installed in the locations indicated on the drawings and shall be manufactured of ductile iron conforming to the material properties of ANSI/AWWA C153/A21.53. Flexible joints shall consist of a ball and socket type joint capable of 15° minimum deflection. Each flexible ball joint shall be pressure tested against its own restraint to a minimum of 350 PSI. MEGALUG® joint restraint shall be provided with each mechanical joint connection. All internal surfaces (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Sealing gaskets shall be constructed of EPDM. The coating and gaskets shall meet ANSI/NSF-61. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16. All flexible ball joints shall be FLEX-900 as manufactured by EBAA Iron, Inc. or approved equal.

FLEX-900 Submittal Reference Drawing (3 inch - 12 inch)

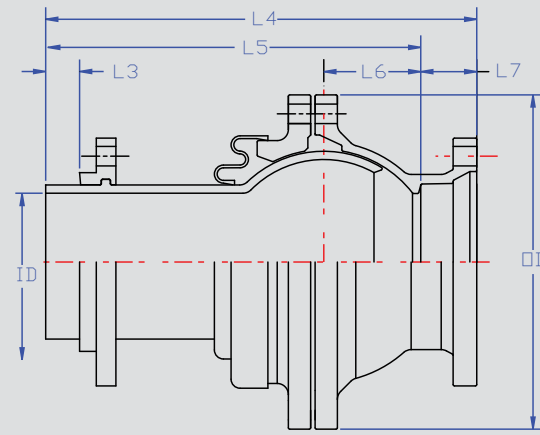
EBAA IRON

MADE IN USA

Flange x Flange



Restrained Plain End x Mechanical Joint

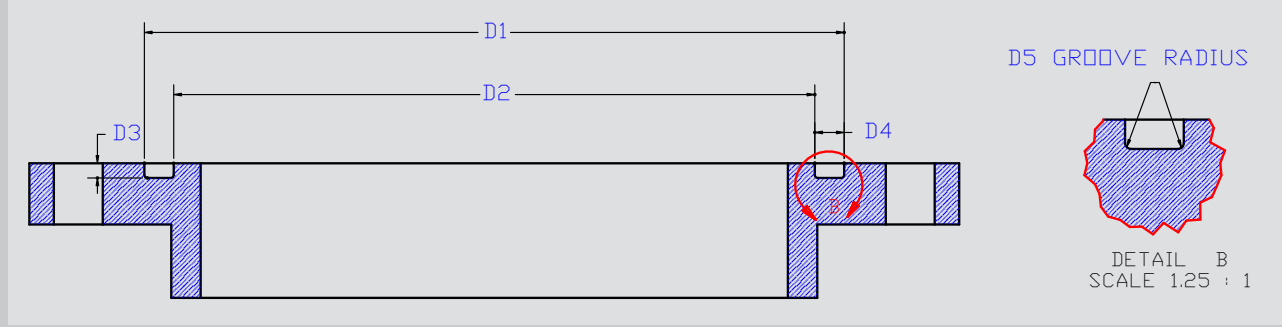


Dimensions for FLEX-900 (3 inch through 12 inch)

Nominal Pipe Size	L1	L2	L3	L4	L5	L6	L7	ID	OD
3	11.4	5.7	2	14.2	11.7	3.5	2.5	3.2	9.2
4	15.8	6.4	1.8	18.2	15.7	3.7	2.5	4.1	13.0
6	17.0	7.0	1.7	19.3	16.8	4.3	2.5	6.2	15.0
8	17.5	7.6	1.6	19.6	17.1	4.9	2.5	8.3	17.3
10	20.8	8.5	1.6	22.7	20.2	6.0	2.5	10.3	22.7
12	21.9	9.6	1.6	24.2	21.7	6.7	2.5	12.3	22.7

NOTE: Dimensions are in inches and are subject to change with out notice.

FLEX-900 Flange O-ring Groove

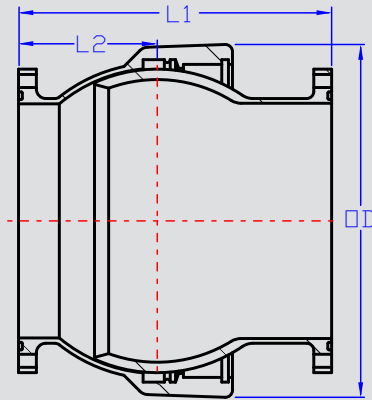


Size	D1	D2	D3	D4	D5	O-ring Diameter	O-ring Part Number	Cut Length
3	4.885	4.185	0.175	0.350	0.0625	0.25	983003	Molded
4	5.900	4.700	0.300	0.600	0.0625	0.5	983004	16.5
6	8.00	6.800	0.300	0.600	0.0625	0.5	983006	23
8	10.100	8.900	0.300	0.600	0.0625	0.5	983008	29.75
10	12.200	11.000	0.300	0.600	0.0625	0.5	983010	36.25
12	14.300	13.100	0.300	0.600	0.0625	0.5	983012	42.75
14	16.200	15.00	0.300	0.600	0.0625	0.5	983014	49.375
16	18.500	16.900	0.400	0.800	0.1250	0.625	983016	56.25
18	20.700	19.100	0.400	0.800	0.1250	0.625	983018	62.75
20	23.000	21.400	0.400	0.800	0.1250	0.625	983020	70
24	27.200	25.600	0.400	0.800	0.1250	0.625	983024	82.75
30	33.500	31.700	0.400	0.900	0.1250	0.75	983030	103
36	40.000	38.300	0.400	0.850	0.1250	0.75	983036	123.5
42	46.580	44.080	0.650	1.250	0.1250	N/A	983042	N/A
48	52.720	50.220	0.650	1.250	0.1250	1	983048	161

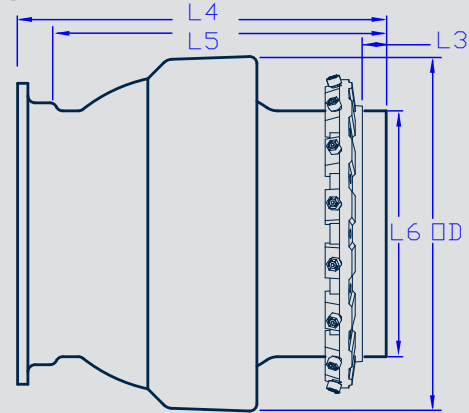
EBAA IRON

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Flange by Flange



Mechanical Joint by Restrained Plain End



Nominal Pipe Size	Dimensions for FLEX-900 (14 inch through 48 inch)							ID	OD
	L1	L2	L3	L4	L5	L6			
14	21.5	10.3	3.0	26.3	25.2	15.3	14.4	22.5	
16	26.5	13.6	2.5	30.3	26.8	17.4	16.5	25.0	
18	25.4	12.9	3.0	29.7	26.2	19.5	18.6	29.9	
20	24.6	11.3	2.5	32.9	29.4	21.6	20.6	30.5	
24	32.9	14.5	2.5	38.7	35.2	25.8	24.8	37.3	
30	Call for Availability								
36	35.5	17.1	-	-	-	-	37.0	50.3	
42	Call for Availability								
48	Call for Availability								

NOTE: Dimensions are in inches and are subject to change without notice. Mechanical Joint by Restrained Plain End sizes are only available up to 24 inch.

Nominal Pipe Size	Weights (lbs)	
	900FF0 (FE x FE)	900MP0 (MJ x RPE)
3	57.89	41.95
4	103.40	99.38
6	149.78	153.54
8	202.41	196.27
10	277.46	271.88
12	374.98	349.16
14	554.70	621.77
16	596.46	523.01
18	895.46	916.82
20	817.92	966.58
24	1542.18	1652.18
30	2715.00	-
36	3801.00	-
42	Call	-
48	Call	-

Important Notes

In order for the FLEX-900 to protect pipeline connections, any load on the pipeline must be transferred to the FLEX-900 by restrained joints. Depending on the piping arrangement and expected movement of the pipeline, adjacent pipeline joints must be restrained to adequately transfer the loads to the FLEX-900.

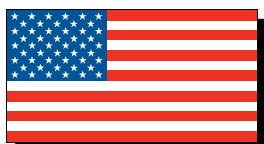
The flanged outlets are dimensioned according to ANSI/AWWA C110/A21.10 with addition of the O-ring. An O-ring is provided with each flange to provide a proven water tight seal to a minimum of 350 PSI.

Mechanical joint connection conform to the dimensional requirements of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 depending on the size.

Installation Instructions

1. Remove protective end covers.
2. Remove polyethylene sleeve and other materials.
3. Check interior, remove dirt and foreign material from interior and end connections.
4. For buried applications install polyethylene sleeve per ANSI/AWWA C105/A21.5 recommendations.
5. Assembly of flange joint:
 - a. Place O-ring in groove.
 - b. Place FLEX-900 flange against adjoining flange, install and hand tighten bolts.
 - c. Check O-ring for proper placement.
 - d. Tighten flange bolts.
6. Install mechanical joint FLEX-900 end connections using the EBAA Iron MEGALUG® Mechanical Joint Restraint suitable for adjacent pipe material. MEGALUG 1100 should be used on ductile iron pipe. MEGALUG 2000PV is to be used on PVC pipe. Assembly instructions for each of these restraints products are included with the restraint device.
7. Assembly of restrained plain end:
 - a. Lubricate and install EBAA-Seal™ Improved Mechanical Joint Gasket provided over plain end per ANSI/AWWA C600.
 - b. Insert plain end into adjacent mechanical joint bell.
 - c. Install and hand tighten T-bolts.
 - d. Tighten T-bolts per AWWA recommendations.
8. Touch up exterior coating as necessary.

FLEX-TEND® Family	Shear Plain	Protection From		
		Bending Moments w/Expansion	Bending Moments No Expansion	Expansion (Axial)
FLEX-TEND Double Ball	Yes	Yes	Yes	Yes
FLEX-TEND Single Ball	No	Yes	Yes	Yes
FLEX-900	No	No	Yes	No
EX-TEND	No	No	No	Yes



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