



Tru-PureTM

ASME BPE APPROVED SF1 & SF4 PIPING SYSTEMS



ASME BPE APPROVED SF1 & SF4 PIPING SYSTEMS

Biotechnology
Pharmaceuticals
Life Sciences
Bioprocessing Equipment



Product Specification

Applications

- Biotechnology
- Pharmaceuticals
- Life Sciences

Products

- Ultra High Purity Stainless Steel Tubing SF4
- Ultra High Purity Stainless Steel Fittings SF4
- High Purity Hygienic Stainless Steel Tubing SF1
- High Purity Hygienic Stainless Steel Fittings SF1

Scope

- This document serves to define the standards and quality assurance management.
- This document also serves as a guideline for the purpose of material acceptance, customer audits, quality control and quality assurance requirements.

Specifications

- The tubes should be manufactured and certified in accordance with the latest versions of all or a group of the following specifications:
- ASME BPE
- ASTM A213 / ASME SA213
- ASTM A249 / ASME SA249
- ASTM A269
- ASTM A270-52
- All of the specifications should be referenced on the Material Test Certificate

Manufacturing Method

- The welded products should be weld-bead removed like a seamless (WSL) and bright annealed according to specifications.
- The surface finish is enhanced by internally polishing method as well as the external surface.

Material Grade

- TP316L Sulfur Controlled to 0.005%~0.017%
- 1.4404 Sulfur Controlled to 0.005%~0.015%
- 1.4435 Sulfur Controlled to 0.005%~0.015%
- Hastelloy C-22 (UNS N06022)
- AL-6XN (UNS N08367)

Dimension

According to ASME BPE Part DT Dimensions and Dimensional Tolerances For Process Components

Outside Diameter Inch(mm)	Wall Thickness Inch(mm)
1/2" (12.7mm)	0.065" (1.65mm)
3/4" (19.05mm)	0.065" (1.65mm)
1" (25.4mm)	0.065" (1.65mm)
1.5" (38.1mm)	0.065" (1.65mm)
2" (50.8mm)	0.065" (1.65mm)
2.5" (63.5mm)	0.065" (1.65mm)
3" (76.2mm)	0.065" (1.65mm)
4" (101.6mm)	0.083" (2.11mm)
6" (152.4mm)	0.109" (2.77mm)

Surface Finish

Surface Treatment	Surface Finish	ID (Ra) Max u-inch (um)	OD (Ra) Max u-inch (um)
None	SFO	Unspecified	Unspecified
Mechanically Polished	SF1	20 (0.508)	32 (0.812)
	SF2	25 (0.635)	32 (0.812)
	SF3	30 (0.762)	32 (0.812)
Electro-polished	SF4	15 (0.381)	32 (0.812)
	SF5	20 (0.508)	32 (0.812)
	SF6	25 (0.635)	32 (0.812)

Tube Ends

- Perpendicular Plain-ended
- 90° Angle Cut suitable for orbital welding

SF4 Surface Treatment

- Electro-Polishing
- Chemical Cleaning (Passivation)

Cleaning Options

- SF1 Wash Clean
- SFO Commercial Clean

Thermocouple Cleaning (Optional)

- ASTM A632-53

Cleaning for Oxygen Service (Optional)

- ASTM G93 - 2019
- CGA G-4.1-2018

Line-marking Specifications (Tubing)

- ASME BPE Logo
- ASME BPE Surface Finish: ASME BPE SF1
- Material Specifications: SA249/A269/A270-52
- Material Identification: TP316L
- Dimension (OD * WT * Length)
- Method of Manufacture: SML or WLD
- Non-Destructive Tested: NDE
- Heat Number: HT# SC12345

Quality Control Plans

- Refer to WCP-BPE

ASME BPE Acceptance Criteria for Anomaly

- Refer to Product Guide for ASME BPE

Material Test Report

- Material Test Certificate conforming to
- EN10204-2004 3.1 should be issued for all tubes

Marking Specifications (Fittings)

- ASME BPE Logo
- ASME BPE Surface Finish: ASME BPE SF1
- DT No. : DT-4.1.1-1
- Material Identification: TP316L
- Size: OD size
- Heat Number: HT# SC12345

Non-Destructive Equipment (NDE) Test

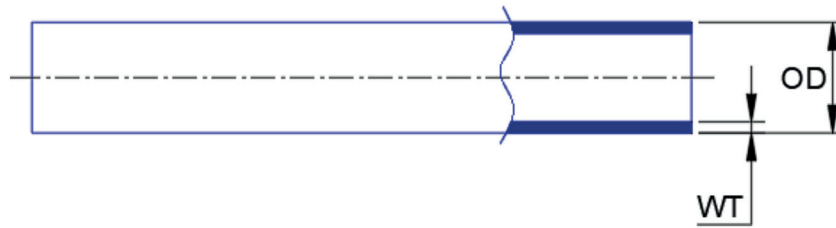
- 100% Eddy Current Test to EN10893-2

Quality Testing & Inspection Environment

- Visual Inspection (100%)
- Material Verification (PMI test 100%)
- Dimension Check
- Hardness
- Tensile Strength
- Flaring (Seamless)
- Flange (Welded)
- Flattening (Welded)
- Reverse Bend (Welded)
- Reverse Flattening (Welded)
- Surface Roughness Measurement
- (ASME B46.1)
- Weld Integrity checked by Boroscope
- Non-Destructive Test
- (EN 10217-7, 7.2.1, NDT Level II)
- Weld Decay (ASTM A249 S7)
- Intergranular Corrosion Test (ASTM A270 S1)

1 Tubing

ASME BPE Tubing DT-4-1

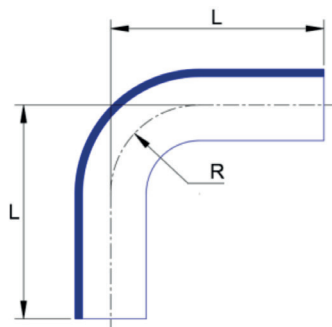


Specifications ASME/ASTM	OD		WT		Length		Part #	Part #
	inch	mm	inch	mm	ft	m	SF1	SF4
SA213 / A269 A270-S2	1/4	6.35	0.035	0.89	20	6.096	BPE-011-62025035	BPE-014-62025035
SA213 / A269 A270-S2	3/8	9.53	0.035	0.89	20	6.096	BPE-011-62038035	BPE-014-62038035
SA213 / A269 A270-S2	1/2	12.70	0.065	1.65	20	6.096	BPE-011-62050065	BPE-014-62050065
SA213 / A269 A270-S2	3/4	19.05	0.065	1.65	20	6.096	BPE-011-62075065	BPE-014-62075065
SA249 / A269 A270-S2	1	25.40	0.065	1.65	20	6.096	BPE-111-62100065	BPE-114-62100065
SA249 / A269 A270-S2	1.5	38.10	0.065	1.65	20	6.096	BPE-111-62150065	BPE-114-62150065
SA249 / A269 A270-S2	2	50.80	0.065	1.65	20	6.096	BPE-111-62200065	BPE-114-62200065
SA249 / A269 A270-S2	2.5	63.50	0.065	1.65	20	6.096	BPE-111-62250065	BPE-114-62250065
SA249 / A269 A270-S2	3	76.20	0.065	1.65	20	6.096	BPE-111-62300065	BPE-114-62300065
SA249 / A269 A270-S2	4	101.60	0.083	2.11	20	6.096	BPE-111-62400083	BPE-114-62400083
SA249 / A269 A270-S2	6	152.4	0.109	2.77	20	6.096	BPE-111-62600109	BPE-114-62600109

2 Elbow

DT-4.1.1-1

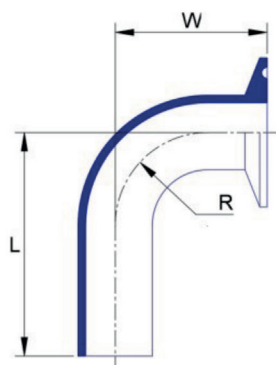
90° Elbow Weld Ends



Size		L		R	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	3	76.2	28.58	FBP-011-9E0010-62050065	FBP-014-9E0040-62050065
3/4	19.05	3	76.2	28.58	FBP-011-9E0010-62075065	FBP-014-9E0040-62075065
1	25.4	3	76.2	38.10	FBP-111-9E0010-62100065	FBP-114-9E0040-62100065
1.5	38.1	3.75	95.3	57.15	FBP-111-9E0010-62150065	FBP-114-9E0040-62150065
2	50.8	4.75	120.65	76.20	FBP-111-9E0010-62200065	FBP-114-9E0040-62200065
2.5	63.5	5.5	139.70	95.25	FBP-111-9E0010-62250065	FBP-114-9E0040-62250065
3	76.2	6.25	158.75	114.30	FBP-111-9E0010-62300065	FBP-114-9E0040-62300065
4	101.6	8	203.20	152.40	FBP-111-9E0010-62400083	FBP-114-9E0040-62400083
6	152.4	11.5	292.10	228.60	FBP-111-9E0010-62600109	FBP-114-9E0040-62600109

DT-4.1.1-2

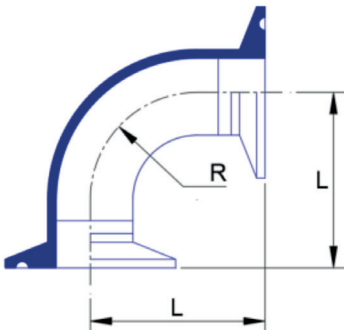
90° Elbow Weld/Clamp End



Size		L	W	R	Part #	Part #
inch	mm	mm	mm	mm	SF1	SF4
1/2	12.7	76.20	41.28	28.58	FBP-011-9E1C10-62050065	FBP-014-9E1C40-62050065
3/4	19.05	76.20	41.28	28.58	FBP-011-9E1C10-62075065	FBP-014-9E1C40-62075065
1	25.4	76.20	50.80	38.10	FBP-111-9E1C10-62100065	FBP-114-9E1C40-62100065
1.5	38.1	95.25	69.85	57.15	FBP-111-9E1C10-62150065	FBP-114-9E1C40-62150065
2	50.8	120.65	88.90	76.20	FBP-111-9E1C10-62200065	FBP-114-9E1C40-62200065
2.5	63.5	139.70	107.95	95.25	FBP-111-9E1C10-62250065	FBP-114-9E1C40-62250065
3	76.2	158.75	127.00	114.30	FBP-111-9E1C10-62300065	FBP-114-9E1C40-62300065
4	101.6	203.20	168.28	152.40	FBP-111-9E1C10-62400083	FBP-114-9E1C40-62400083
6	152.4	292.10	266.70	228.60	FBP-111-9E1C10-62600109	FBP-114-9E1C40-62600109

2 Elbow

DT-4.1.1-3 90° Elbow Clamp Ends

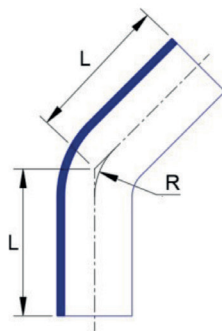


Size		L		R	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	1.625	41.28	28.58	FBP-011-9E2C10-62050065	FBP-014-9E2C40-62050065
3/4	19.05	1.625	41.28	28.58	FBP-011-9E2C10-62075065	FBP-014-9E2C40-62075065
1	25.4	2.000	50.80	38.10	FBP-111-9E2C10-62100065	FBP-111-9E2C40-62100065
1.5	38.1	2.750	69.85	57.15	FBP-111-9E2C10-62150065	FBP-111-9E2C40-62150065
2	50.8	3.500	88.90	76.20	FBP-111-9E2C10-62200065	FBP-111-9E2C40-62200065
2.5	63.5	4.250	107.95	95.25	FBP-111-9E2C10-62250065	FBP-111-9E2C40-62250065
3	76.2	5.000	127.00	114.30	FBP-111-9E2C10-62300065	FBP-111-9E2C40-62300065
4	101.6	6.625	168.28	152.40	FBP-111-9E2C10-62400083	FBP-111-9E2C40-62400083
6	152.4	10.500	266.70	228.60	FBP-111-9E2C10-62600109	FBP-111-9E2C40-62600109

2 Elbow

DT-4.1.1-4

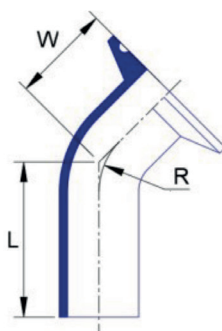
45° Elbow Weld End



Size		L		R	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	2.25	57.15	28.58	FBP-011-4E0010-62050065	FBP-014-4E0040-62050065
3/4	19.05	2.25	57.15	28.58	FBP-011-4E0010-62075065	FBP-014-4E0040-62075065
1	25.4	2.25	57.15	38.10	FBP-111-4E0010-62100065	FBP-114-4E0040-62100065
1.5	38.1	2.5	63.50	57.15	FBP-111-4E0010-62150065	FBP-114-4E0040-62150065
2	50.8	3	76.20	76.20	FBP-111-4E0010-62200065	FBP-114-4E0040-62200065
2.5	63.5	3.375	85.73	95.25	FBP-111-4E0010-62250065	FBP-114-4E0040-62250065
3	76.2	3.625	92.08	114.30	FBP-111-4E0010-62300065	FBP-114-4E0040-62300065
4	101.6	4.5	114.30	152.40	FBP-111-4E0010-62400083	FBP-114-4E0040-62400083
6	152.4	6.25	158.75	228.60	FBP-111-4E0010-62600109	FBP-114-4E0040-62600109

DT-4.1.1-5

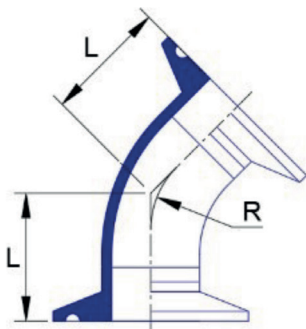
45° Elbow Weld/Clamp End



Size		L	W	R	Part #	Part #
inch	mm	mm	mm	mm	SF1	SF4
1/2	12.7	57.15	25.4	28.58	FBP-011-4E1C10-62050065	FBP-014-4E1C40-62050065
3/4	19.05	57.15	25.4	28.58	FBP-011-4E1C10-62075065	FBP-014-4E1C40-62075065
1	25.4	57.15	28.58	38.10	FBP-111-4E1C10-62100065	FBP-114-4E1C40-62100065
1.5	38.1	63.50	36.53	57.15	FBP-111-4E1C10-62150065	FBP-114-4E1C40-62150065
2	50.8	76.20	44.45	76.20	FBP-111-4E1C10-62200065	FBP-114-4E1C40-62200065
2.5	63.5	85.73	52.40	95.25	FBP-111-4E1C10-62250065	FBP-114-4E1C40-62250065
3	76.2	92.08	60.33	114.30	FBP-111-4E1C10-62300065	FBP-114-4E1C40-62300065
4	101.6	114.30	79.38	152.40	FBP-111-4E1C10-62400083	FBP-114-4E1C40-62400083
6	152.4	158.75	133.35	228.60	FBP-111-4E1C10-62600109	FBP-114-4E1C40-62600109

2 Elbow

DT-4.1.1-6 45° Elbow Clamp Ends

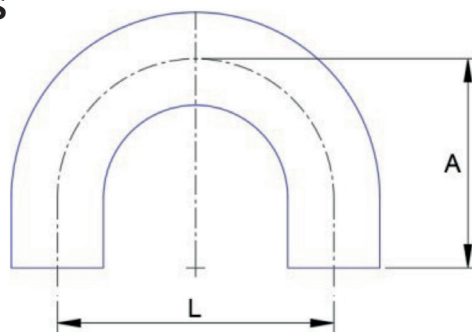


Size		L		R	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	1	25.4	28.58	FBP-011-4E2C10-62050065	FBP-014-4E2C40-62050065
3/4	19.05	1	25.4	28.58	FBP-011-4E2C10-62075065	FBP-014-4E2C40-62075065
1	25.4	1.13	28.6	38.10	FBP-111-4E2C10-62100065	FBP-114-4E2C40-62100065
1.5	38.1	1.44	36.5	57.15	FBP-111-4E2C10-62150065	FBP-114-4E2C40-62150065
2	50.8	1.75	44.5	76.20	FBP-111-4E2C10-62200065	FBP-114-4E2C40-62200065
2.5	63.5	2.06	52.4	95.25	FBP-111-4E2C10-62250065	FBP-114-4E2C40-62250065
3	76.2	2.38	60.3	114.30	FBP-111-4E2C10-62300065	FBP-114-4E2C40-62300065
4	101.6	3.13	79.4	152.40	FBP-111-4E2C10-62400083	FBP-114-4E2C40-62400083
6	152.4	5.25	133.4	228.60	FBP-111-4E2C10-62600109	FBP-114-4E2C40-62600109

2 Elbow

DT-4.1.1-7

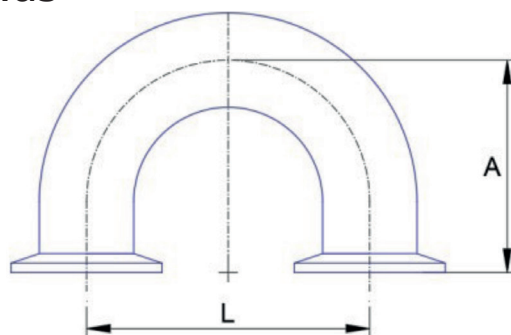
180° Elbow Weld Ends



Size		L		A	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	4.5	114.30	76.20	FBP-011-8E0010-62050065	FBP-014-8E0040-62050065
3/4	19.05	4.5	114.30	76.20	FBP-011-8E0010-62075065	FBP-014-8E0040-62075065
1	25.4	3	76.20	76.20	FBP-111-8E0010-62100065	FBP-114-8E0040-62100065
1.5	38.1	4.5	114.30	114.30	FBP-111-8E0010-62150065	FBP-114-8E0040-62150065
2	50.8	6	152.40	127.00	FBP-111-8E0010-62200065	FBP-114-8E0040-62200065
2.5	63.5	7.5	190.50	146.05	FBP-111-8E0010-62250065	FBP-114-8E0040-62250065
3	76.2	9	228.60	165.10	FBP-111-8E0010-62300065	FBP-114-8E0040-62300065
4	101.6	12	304.80	215.90	FBP-111-8E0010-62400083	FBP-114-8E0040-62400083
6	152.4	18	457.20	292.10	FBP-111-8E0010-62600109	FBP-114-8E0040-62600109

DT-4.1.1-8

180° Elbow Clamp Ends

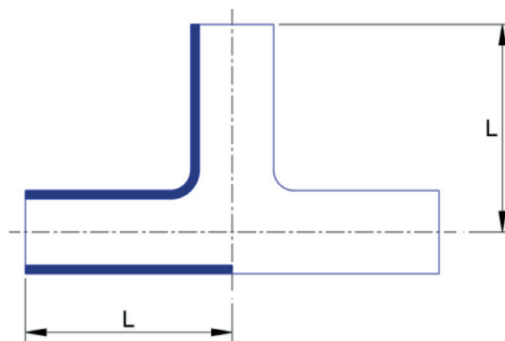


Size		L		A	Part #	Part #
inch	mm	inch	mm	mm	SF1	SF4
1/2	12.7	4.5	114.3	88.90	FBP-011-8E2C10-62050065	FBP-014-8E2C40-62050065
3/4	19.05	4.5	114.3	88.90	FBP-011-8E2C10-62075065	FBP-014-8E2C40-62075065
1	25.4	3	76.2	88.90	FBP-111-8E2C10-62100065	FBP-114-8E2C40-62100065
1.5	38.1	4.5	114.3	127.00	FBP-111-8E2C10-62150065	FBP-114-8E2C40-62150065
2	50.8	6	152.4	139.70	FBP-111-8E2C10-62200065	FBP-114-8E2C40-62200065
2.5	63.5	7.5	190.5	158.75	FBP-111-8E2C10-62250065	FBP-114-8E2C40-62250065
3	76.2	9	228.6	177.80	FBP-111-8E2C10-62300065	FBP-114-8E2C40-62300065
4	101.6	12	304.8	231.78	FBP-111-8E2C10-62400083	FBP-114-8E2C40-62400083
6	152.4	18	457.2	330.20	FBP-111-8E2C10-62600109	FBP-114-8E2C40-62600109

3 Tee / Cross

DT-4.1.2-1

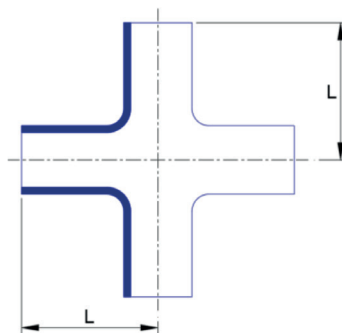
Equal Tee Weld Ends



Size		L		Part #	Part #
inch	mm	inch	mm	SF1	SF4
1/2	12.7	1.870	47.63	FBP-011-8T0010-62050065	FBP-014-8T0040-62050065
3/4	19.05	2.000	50.80	FBP-011-8T0010-62075065	FBP-014-8T0040-62075065
1	25.4	2.125	53.98	FBP-111-8T0010-62100065	FBP-114-8T0040-62100065
1.5	38.1	2.375	60.33	FBP-111-8T0010-62150065	FBP-114-8T0040-62150065
2	50.8	2.875	73.03	FBP-111-8T0010-62200065	FBP-114-8T0040-62200065
2.5	63.5	3.125	79.38	FBP-111-8T0010-62250065	FBP-114-8T0040-62250065
3	76.2	3.375	85.73	FBP-111-8T0010-62300065	FBP-114-8T0040-62300065
4	101.6	4.125	104.78	FBP-111-8T0010-62400083	FBP-114-8T0040-62400083
6	152.4	5.625	142.88	FBP-111-8T0010-62600109	FBP-114-8T0040-62600109

DT-4.1.2-1

Cross Weld Ends

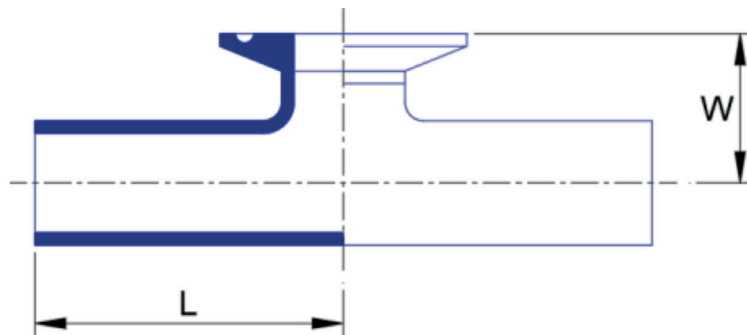


Size		L		Part #	Part #
inch	mm	inch	mm	SF1	SF4
1/2	12.7	1.870	47.63	FBP-011-4T0010-62050065	FBP-014-4T0040-62050065
3/4	19.05	2.000	50.80	FBP-011-4T0010-62075065	FBP-014-4T0040-62075065
1	25.4	2.125	53.98	FBP-111-4T0010-62100065	FBP-114-4T0040-62100065
1.5	38.1	2.375	60.33	FBP-111-4T0010-62150065	FBP-114-4T0040-62150065
2	50.8	2.875	73.03	FBP-111-4T0010-62200065	FBP-114-4T0040-62200065
2.5	63.5	3.125	79.38	FBP-111-4T0010-62250065	FBP-114-4T0040-62250065
3	76.2	3.375	85.73	FBP-111-4T0010-62300065	FBP-114-4T0040-62300065
4	101.6	4.125	104.78	FBP-111-4T0010-62400083	FBP-114-4T0040-62400083
6	152.4	5.625	142.88	FBP-111-4T0010-62600109	FBP-114-4T0040-62600109

3 Tee / Cross

DT-4.1.2-2

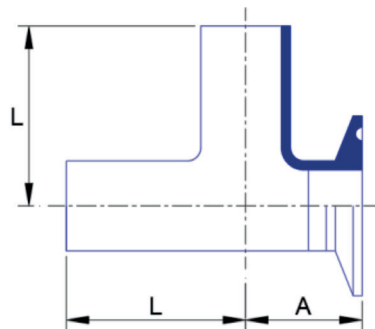
Short-Outlet Clamp Joint Tee



Size		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
1/2	12.7	1.875	47.63	1.00	25.40	FBP-011-6T1C10-62050065	FBP-014-6T1C40-62050065
3/4	19.05	2.000	50.80	1.125	28.58	FBP-011-6T1C10-62075065	FBP-014-6T1C40-62075065
1	25.4	2.215	53.98	1.125	28.58	FBP-111-6T1C10-62100065	FBP-114-6T1C40-62100065
1.5	38.1	2.375	60.33	1.375	34.93	FBP-111-6T1C10-62150065	FBP-114-6T1C40-62150065
2	50.8	2.875	73.03	1.625	41.28	FBP-111-6T1C10-62200065	FBP-114-6T1C40-62200065
2.5	63.5	3.125	79.38	1.875	47.63	FBP-111-6T1C10-62250065	FBP-114-6T1C40-62250065
3	76.2	3.375	85.73	2.125	53.98	FBP-111-6T1C10-62300065	FBP-114-6T1C40-62300065
4	101.6	4.125	104.78	2.750	69.85	FBP-111-6T1C10-62400083	FBP-114-6T1C40-62400083
6	152.4	5.625	142.88	4.625	117.48	FBP-111-6T1C10-62600109	FBP-114-6T1C40-62600109

DT-4.1.2-3

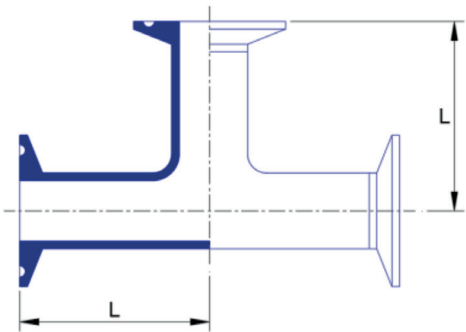
Short-Outlet Run Tee



Size		L		A		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
1/2	12.7	1.875	47.63	0.875	22.23	FBP-011-8T1C10-62050065	FBP-014-8T1C40-62050065
3/4	19.05	2.000	50.80	1.000	25.40	FBP-011-8T1C10-62075065	FBP-014-8T1C40-62075065
1	25.4	2.125	53.98	1.125	28.58	FBP-111-8T1C10-62100065	FBP-114-8T1C40-62100065
1.5	38.1	2.375	60.33	1.375	34.93	FBP-111-8T1C10-62150065	FBP-114-8T1C40-62150065
2	50.8	2.875	73.03	1.625	41.28	FBP-111-8T1C10-62200065	FBP-114-8T1C40-62200065
2.5	63.5	3.125	79.38	1.875	47.63	FBP-111-8T1C10-62250065	FBP-114-8T1C40-62250065
3	76.2	3.375	85.73	2.125	53.98	FBP-111-8T1C10-62300065	FBP-114-8T1C40-62300065
4	101.6	4.125	104.78	2.750	69.85	FBP-111-8T1C10-62400083	FBP-114-8T1C40-62400083
6	152.4	5.625	142.88	4.625	117.48	FBP-111-8T1C10-62600109	FBP-114-8T1C40-62600109

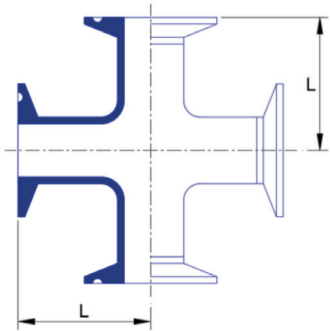
3 Tee / Cross

DT-4.1.2-4 Equal Tee Clamp Ends



Size		L		Part #	Part #
inch	mm	inch	mm	SF1	SF4
1/2	12.7	2.375	60.33	FBP-011-8T3C10-62050065	FBP-014-8T3C40-62050065
3/4	19.05	2.500	63.50	FBP-011-8T3C10-62075065	FBP-014-8T3C40-62075065
1	25.4	2.625	66.68	FBP-111-8T3C10-62100065	FBP-114-8T3C40-62100065
1.5	38.1	2.875	73.03	FBP-111-8T3C10-62150065	FBP-114-8T3C40-62150065
2	50.8	3.375	85.73	FBP-111-8T3C10-62200065	FBP-114-8T3C40-62200065
2.5	63.5	3.625	92.08	FBP-111-8T3C10-62250065	FBP-114-8T3C40-62250065
3	76.2	3.875	98.43	FBP-111-8T3C10-62300065	FBP-114-8T3C40-62300065
4	101.6	4.750	120.65	FBP-111-8T3C10-62400083	FBP-114-8T3C40-62400083
6	152.4	7.125	180.98	FBP-111-8T3C10-62600109	FBP-114-8T3C40-62600109

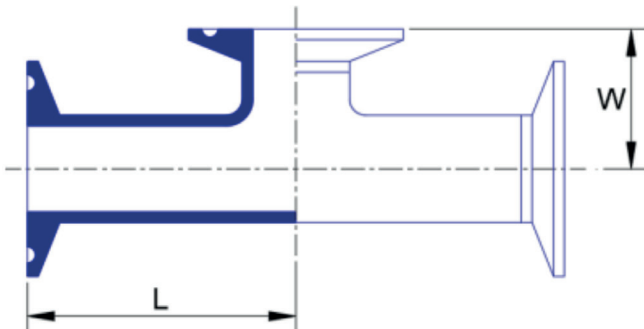
DT-4.1.2-4 Cross Clamp Ends



Size		L		Part #	Part #
inch	mm	inch	mm	SF1	SF4
1/2	12.7	2.375	60.33	FBP-011-4T4C10-62050065	FBP-014-4T4C10-62050065
3/4	19.05	2.500	63.50	FBP-011-4T4C10-62075065	FBP-014-4T4C10-62075065
1	25.4	2.625	66.68	FBP-111-4T4C10-62100065	FBP-114-4T4C10-62100065
1.5	38.1	2.875	73.03	FBP-111-4T4C10-62150065	FBP-114-4T4C10-62150065
2	50.8	3.375	85.73	FBP-111-4T4C10-62200065	FBP-114-4T4C10-62200065
2.5	63.5	3.625	92.08	FBP-111-4T4C10-62250065	FBP-114-4T4C10-62250065
3	76.2	3.875	98.43	FBP-111-4T4C10-62300065	FBP-114-4T4C10-62300065
4	101.6	4.750	120.65	FBP-111-4T4C10-62400083	FBP-114-4T4C10-62400083
6	152.4	7.125	180.98	FBP-111-4T4C10-62600109	FBP-114-4T4C10-62600109

3 Tee / Cross

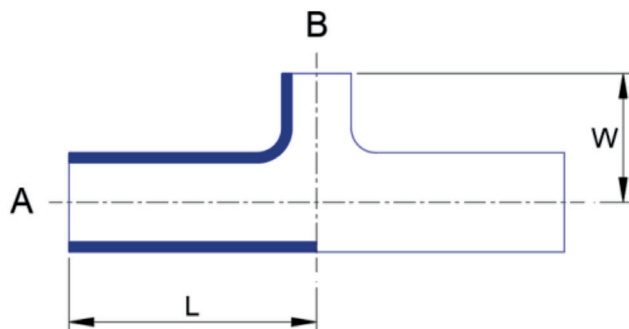
DT-4.1.2-5 Short-Outlet Tee Clamp Ends



Size		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
1/2	12.7	2.375	60.33	1.000	25.40	FBP-011-6T3C10-62050065	FBP-014-6T3C40-62050065
3/4	19.05	2.500	63.50	1.125	28.58	FBP-011-6T3C10-62075065	FBP-014-6T3C40-62075065
1	25.4	2.625	66.68	1.125	28.58	FBP-111-6T3C10-62100065	FBP-114-6T3C40-62100065
1.5	38.1	2.875	73.03	1.375	34.93	FBP-111-6T3C10-62150065	FBP-114-6T3C40-62150065
2	50.8	3.375	85.73	1.625	41.28	FBP-111-6T3C10-62200065	FBP-114-6T3C40-62200065
2.5	63.5	3.625	92.08	1.875	47.63	FBP-111-6T3C10-62250065	FBP-114-6T3C40-62250065
3	76.2	3.875	98.43	2.125	53.98	FBP-111-6T3C10-62300065	FBP-114-6T3C40-62300065
4	101.6	4.750	120.65	2.750	69.85	FBP-111-6T3C10-62400083	FBP-114-6T3C40-62400083
6	152.4	7.125	180.98	4.625	117.48	FBP-111-6T3C10-62600109	FBP-114-6T3C40-62600109

3 Tee / Cross

DT-4.1.2-6 Reducing Tee Weld Ends

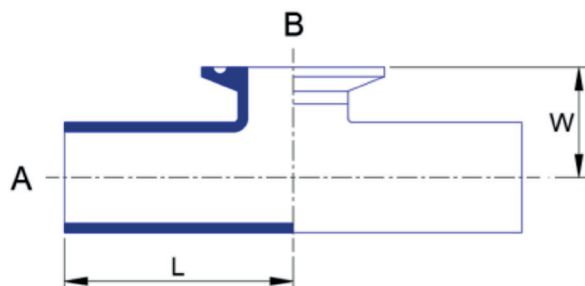


Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.000	50.80	2.000	50.80	FBP-011-3T0010-62075050	FBP-014-3T0040-62075050
1	25.4	1/2	12.7	2.215	53.98	2.215	53.98	FBP-111-3T0010-62100050	FBP-114-3T0040-62100050
1	25.4	3/4	19.05	2.215	53.98	2.215	53.98	FBP-111-3T0010-62100075	FBP-114-3T0040-62100075
1.5	38.1	1/2	12.7	2.375	60.33	2.375	60.33	FBP-111-3T0010-62150050	FBP-114-3T0040-62150050
1.5	38.1	3/4	19.05	2.375	60.33	2.375	60.33	FBP-111-3T0010-62150075	FBP-114-3T0040-62150075
1.5	38.1	1	25.4	2.375	60.33	2.375	60.33	FBP-111-3T0010-62150100	FBP-114-3T0040-62150100
2	50.8	1/2	12.7	2.875	73.03	2.625	66.68	FBP-111-3T0010-62200050	FBP-114-3T0040-62200050
2	50.8	3/4	19.05	2.875	73.03	2.625	66.68	FBP-111-3T0010-62200075	FBP-114-3T0040-62200075
2	50.8	1	25.4	2.875	73.03	2.625	66.68	FBP-111-3T0010-62200100	FBP-114-3T0040-62200100
2	50.8	1.5	38.1	2.875	73.03	2.875	73.03	FBP-111-3T0010-62200150	FBP-114-3T0040-62200150
2.5	63.5	1/2	12.7	3.125	79.38	2.875	73.03	FBP-111-3T0010-62250050	FBP-114-3T0040-62250050
2.5	63.5	3/4	19.05	3.125	79.38	2.875	73.03	FBP-111-3T0010-62250075	FBP-114-3T0040-62250075
2.5	63.5	1	25.4	3.125	79.38	2.875	73.03	FBP-111-3T0010-62250100	FBP-114-3T0040-62250100
2.5	63.5	1.5	38.1	3.125	79.38	2.875	73.03	FBP-111-3T0010-62250150	FBP-114-3T0040-62250150
2.5	63.5	2	50.8	3.125	79.38	2.875	73.03	FBP-111-3T0010-62250200	FBP-114-3T0040-62250200
3	76.2	1/2	12.7	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300050	FBP-114-3T0040-62300050
3	76.2	3/4	19.05	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300075	FBP-114-3T0040-62300075
3	76.2	1	25.4	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300100	FBP-114-3T0040-62300100
3	76.2	1.5	38.1	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300150	FBP-114-3T0040-62300150
3	76.2	2	50.8	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300200	FBP-114-3T0040-62300200
3	76.2	2.5	63.5	3.375	85.73	3.125	79.38	FBP-111-3T0010-62300250	FBP-114-3T0040-62300250
4	101.6	1/2	12.7	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400050	FBP-114-3T0040-62400050
4	101.6	3/4	19.05	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400075	FBP-114-3T0040-62400075
4	101.6	1	25.4	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400100	FBP-114-3T0040-62400100
4	101.6	1.5	38.1	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400150	FBP-114-3T0040-62400150
4	101.6	2	50.4	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400200	FBP-114-3T0040-62400200
4	101.6	2.5	63.5	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400250	FBP-114-3T0040-62400250
4	101.6	3	76.2	4.125	104.78	3.625	92.08	FBP-111-3T0010-62400300	FBP-114-3T0040-62400300
6	152.4	3	76.2	5.625	142.88	4.875	123.83	FBP-111-3T0010-62600300	FBP-114-3T0040-62600300
6	152.4	4	76.2	5.625	142.88	5.125	130.18	FBP-111-3T0010-62600400	FBP-114-3T0040-62600400

3 Tee / Cross

DT-4.1.2-7

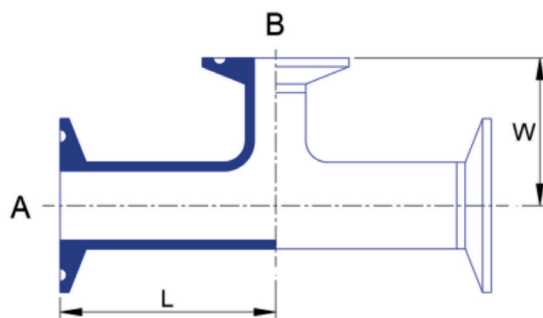
Short-Outlet Clamp Joint Reducing Tee



Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.000	50.80	1.000	25.40	FBP-011-3T1C10-62075050	FBP-014-3T1C40-62075050
1	25.4	1/2	12.7	2.215	53.97	1.125	28.58	FBP-111-3T1C10-62100050	FBP-114-3T1C40-62100050
1	25.4	3/4	19.05	2.215	53.97	1.125	28.58	FBP-111-3T1C10-62100075	FBP-114-3T1C40-62100075
1.5	38.1	1/2	12.7	2.375	60.33	1.375	34.93	FBP-111-3T1C10-62150050	FBP-114-3T1C40-62150050
1.5	38.1	3/4	19.05	2.375	60.33	1.375	34.93	FBP-111-3T1C10-62150075	FBP-114-3T1C40-62150075
1.5	38.1	1	25.4	2.375	60.33	1.375	34.93	FBP-111-3T1C10-62150100	FBP-114-3T1C40-62150100
2	50.8	1/2	12.7	2.875	73.03	1.625	41.28	FBP-111-3T1C10-62200050	FBP-114-3T1C40-62200050
2	50.8	3/4	19.05	2.875	73.03	1.625	41.28	FBP-111-3T1C10-62200075	FBP-114-3T1C40-62200075
2	50.8	1	25.4	2.875	73.03	1.625	41.28	FBP-111-3T1C10-62200100	FBP-114-3T1C40-62200100
2	50.8	1.5	38.1	2.875	73.03	1.625	41.28	FBP-111-3T1C10-62200150	FBP-114-3T1C40-62200150
2.5	63.5	1/2	12.7	3.125	79.38	1.875	47.63	FBP-111-3T1C10-62250050	FBP-114-3T1C40-62250050
2.5	63.5	3/4	19.05	3.125	79.38	1.875	47.63	FBP-111-3T1C10-62250075	FBP-114-3T1C40-62250075
2.5	63.5	1	25.4	3.125	79.38	1.875	47.63	FBP-111-3T1C10-62250100	FBP-114-3T1C40-62250100
2.5	63.5	1.5	38.1	3.125	79.38	1.875	47.63	FBP-111-3T1C10-62250150	FBP-114-3T1C40-62250150
2.5	63.5	2	50.8	3.125	79.38	1.875	47.63	FBP-111-3T1C10-62250200	FBP-114-3T1C40-62250200
3	76.2	1/2	12.7	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300050	FBP-114-3T1C40-62300050
3	76.2	3/4	19.05	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300075	FBP-114-3T1C40-62300075
3	76.2	1	25.4	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300100	FBP-114-3T1C40-62300100
3	76.2	1.5	38.1	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300150	FBP-114-3T1C40-62300150
3	76.2	2	50.8	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300200	FBP-114-3T1C40-62300200
3	76.2	2.5	63.5	3.375	85.73	2.125	53.98	FBP-111-3T1C10-62300250	FBP-114-3T1C40-62300250
4	101.6	1/2	12.7	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400050	FBP-114-3T1C40-62400050
4	101.6	3/4	19.05	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400075	FBP-114-3T1C40-62400075
4	101.6	1	25.4	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400100	FBP-114-3T1C40-62400100
4	101.6	1.5	38.1	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400150	FBP-114-3T1C40-62400150
4	101.6	2	50.4	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400200	FBP-114-3T1C40-62400200
4	101.6	2.5	63.5	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400250	FBP-114-3T1C40-62400250
4	101.6	3	76.2	4.125	104.78	2.625	66.68	FBP-111-3T1C10-62400300	FBP-114-3T1C40-62400300

3 Tee / Cross

DT-4.1.2-8 Reducing Tee Clamp Ends

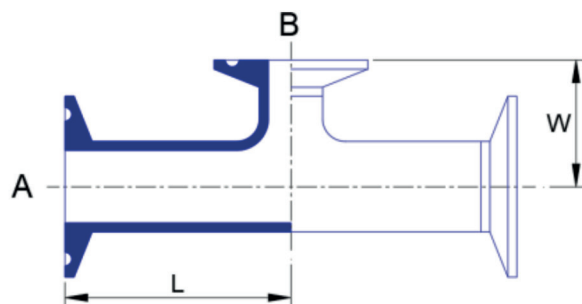


Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.500	63.50	2.500	63.50	FBP-011-9T3C10-62075050	FBP-014-9T3C40-62075050
1	25.4	1/2	12.7	2.625	66.68	2.625	66.68	FBP-111-9T3C10-62100050	FBP-114-9T3C40-62100050
1	25.4	3/4	19.05	2.625	66.68	2.625	66.68	FBP-111-9T3C10-62100075	FBP-114-9T3C40-62100075
1.5	38.1	1/2	12.7	2.875	73.03	2.875	73.03	FBP-111-9T3C10-62150050	FBP-114-9T3C40-62150050
1.5	38.1	3/4	19.05	2.875	73.03	2.875	73.03	FBP-111-9T3C10-62150075	FBP-114-9T3C40-62150075
1.5	38.1	1	25.4	3.375	85.73	2.875	73.03	FBP-111-9T3C10-62150100	FBP-114-9T3C40-62150100
2	50.8	1/2	12.7	3.375	85.73	3.125	79.38	FBP-111-9T3C10-62200050	FBP-114-9T3C40-62200050
2	50.8	3/4	19.05	3.375	85.73	3.125	79.38	FBP-111-9T3C10-62200075	FBP-114-9T3C40-62200075
2	50.8	1	25.4	3.375	85.73	3.125	79.38	FBP-111-9T3C10-62200100	FBP-114-9T3C40-62200100
2	50.8	1.5	38.1	3.375	92.08	3.125	79.38	FBP-111-9T3C10-62200150	FBP-114-9T3C40-62200150
2.5	63.5	1/2	12.7	3.625	92.08	3.375	85.73	FBP-111-9T3C10-62250050	FBP-114-9T3C40-62250050
2.5	63.5	3/4	19.05	3.625	92.08	3.375	85.73	FBP-111-9T3C10-62250075	FBP-114-9T3C40-62250075
2.5	63.5	1	25.4	3.625	92.08	3.375	85.73	FBP-111-9T3C10-62250100	FBP-114-9T3C40-62250100
2.5	63.5	1.5	38.1	3.625	92.08	3.375	85.73	FBP-111-9T3C10-62250150	FBP-114-9T3C40-62250150
2.5	63.5	2	50.8	3.625	92.08	3.375	85.73	FBP-111-9T3C10-62250200	FBP-114-9T3C40-62250200
3	76.2	1/2	12.7	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300050	FBP-114-9T3C40-62300050
3	76.2	3/4	19.05	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300075	FBP-114-9T3C40-62300075
3	76.2	1	25.4	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300100	FBP-114-9T3C40-62300100
3	76.2	1.5	38.1	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300150	FBP-114-9T3C40-62300150
3	76.2	2	50.8	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300200	FBP-114-9T3C40-62300200
3	76.2	2.5	63.5	3.875	98.43	3.625	92.08	FBP-111-9T3C10-62300250	FBP-114-9T3C40-62300250
4	101.6	1/2	12.7	4.750	120.65	4.125	104.78	FBP-111-9T3C1066400050	FBP-114-9T3C40-62400050
4	101.6	3/4	19.05	4.750	120.65	4.125	104.78	FBP-111-9T3C10-62400075	FBP-114-9T3C40-62400075
4	101.6	1	25.4	4.750	120.65	4.125	104.78	FBP-111-9T3C10-62400100	FBP-114-9T3C40-62400100
4	101.6	1.5	38.1	4.750	120.65	4.125	104.78	FBP-111-9T3C10-62400150	FBP-114-9T3C40-62400150
4	101.6	2	50.4	4.750	120.65	4.375	111.13	FBP-111-9T3C10-62400200	FBP-114-9T3C40-62400200
4	101.6	2.5	63.5	4.750	120.65	4.375	111.13	FBP-111-9T3C10-62400250	FBP-114-9T3C40-62400250
4	101.6	3	76.2	4.750	120.65	4.375	111.13	FBP-111-9T3C10-62400300	FBP-114-9T3C40-62400300

3 Tee / Cross

DT-4.1.2-9

Short-Outlet Reducing Tee Clamp Ends

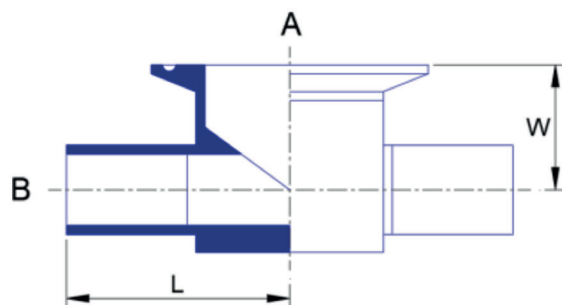


Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.500	63.50	1.00	25.40	FBP-011-9T3C17-62075050	FBP-014-9T3C47-62075050
1	25.4	1/2	12.7	2.625	66.68	1.125	28.53	FBP-111-9T3C17-62100050	FBP-114-9T3C47-62100050
1	25.4	3/4	19.05	2.625	66.68	1.125	28.53	FBP-111-9T3C17-62100075	FBP-114-9T3C47-62100075
1.5	38.1	1/2	12.7	2.875	73.03	1.375	34.93	FBP-111-9T3C17-62150050	FBP-114-9T3C47-62150050
1.5	38.1	3/4	19.05	2.875	73.03	1.375	34.93	FBP-111-9T3C17-62150075	FBP-114-9T3C47-62150075
1.5	38.1	1	25.4	2.875	73.03	1.375	34.93	FBP-111-9T3C17-62150100	FBP-114-9T3C47-62150100
2	50.8	1/2	12.7	3.375	85.73	1.625	41.28	FBP-111-9T3C17-62200050	FBP-114-9T3C47-62200050
2	50.8	3/4	19.05	3.375	85.73	1.625	41.28	FBP-111-9T3C17-62200075	FBP-114-9T3C47-62200075
2	50.8	1	25.4	3.375	85.73	1.625	41.28	FBP-111-9T3C17-62200100	FBP-114-9T3C47-62200100
2	50.8	1.5	38.1	3.375	85.73	1.625	41.28	FBP-111-9T3C17-62200150	FBP-114-9T3C47-62200150
2.5	63.5	1/2	12.7	3.625	92.08	1.875	47.63	FBP-111-9T3C17-62250050	FBP-114-9T3C47-62250050
2.5	63.5	3/4	19.05	3.625	92.08	1.875	47.63	FBP-111-9T3C17-62250075	FBP-114-9T3C47-62250075
2.5	63.5	1	25.4	3.625	92.08	1.875	47.63	FBP-111-9T3C17-62250100	FBP-114-9T3C47-62250100
2.5	63.5	1.5	38.1	3.625	92.08	1.875	47.63	FBP-111-9T3C17-62250150	FBP-114-9T3C47-62250150
2.5	63.5	2	50.8	3.625	92.08	1.875	47.63	FBP-111-9T3C17-62250200	FBP-114-9T3C47-62250200
3	76.2	1/2	12.7	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300050	FBP-114-9T3C47-62300050
3	76.2	3/4	19.05	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300075	FBP-114-9T3C47-62300075
3	76.2	1	25.4	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300100	FBP-114-9T3C47-62300100
3	76.2	1.5	38.1	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300150	FBP-114-9T3C47-62300150
3	76.2	2	50.8	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300200	FBP-114-9T3C47-62300200
3	76.2	2.5	63.5	3.875	98.43	2.125	53.98	FBP-111-9T3C17-62300250	FBP-114-9T3C47-62300250
4	101.6	1/2	12.7	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400050	FBP-114-9T3C47-62400050
4	101.6	3/4	19.05	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400075	FBP-114-9T3C47-62400075
4	101.6	1	25.4	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400100	FBP-114-9T3C47-62400100
4	101.6	1.5	38.1	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400150	FBP-114-9T3C47-62400150
4	101.6	2	50.4	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400200	FBP-114-9T3C47-62400200
4	101.6	2.5	63.5	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400250	FBP-114-9T3C47-62400250
4	101.6	3	76.2	4.750	120.65	2.625	66.68	FBP-111-9T3C17-62400300	FBP-114-9T3C47-62400300

3 Tee / Cross

DT-4.1.2-10

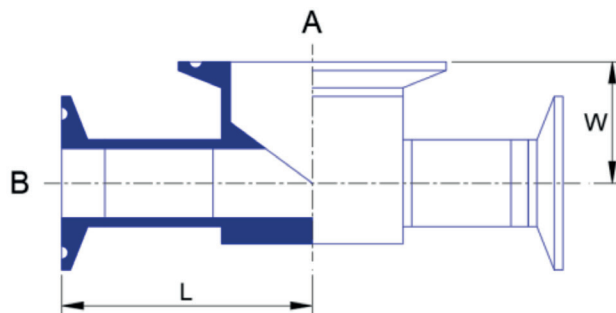
Instrument Tee Weld Ends



Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
1.5	38.1	0.5	12.7	2.500	63.50	0.875	22.23	FBP-011-1T1C10-62150050	FBP-014-1T1C40-62150050
1.5	38.1	0.75	19.05	2.500	63.50	1.000	25.40	FBP-011-1T1C10-62150075	FBP-014-1T1C40-62150075
1.5	38.1	1	25.4	2.500	63.50	1.125	28.58	FBP-011-1T1C10-62150100	FBP-014-1T1C40-62150100
2	50.8	0.5	12.7	2.750	69.85	1.000	25.40	FBP-011-1T1C10-62200050	FBP-014-1T1C40-62200050
2	50.8	0.75	19.05	2.750	69.85	1.125	28.58	FBP-011-1T1C10-62200075	FBP-014-1T1C40-62200175
2	50.8	1	25.4	2.750	69.85	1.250	31.75	FBP-011-1T1C10-62200100	FBP-014-1T1C40-62200100
2	50.8	1.5	38.1	2.750	69.85	1.500	38.10	FBP-011-1T1C10-62200150	FBP-014-1T1C40-62200150

DT-4.1.2-11

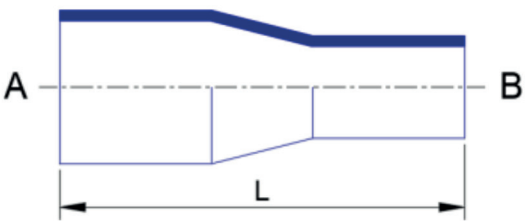
Instrument Tee Clamp Ends



Size(A)		Size(B)		L		W		Part #	Part #
inch	mm	inch	mm	inch	mm	inch	mm	SF1	SF4
1.5	38.1	0.5	12.7	3.000	76.20	0.875	22.23	FBP-011-1T3C10-62150050	FBP-014-1T3C40-62150050
1.5	38.1	0.75	19.05	3.000	76.20	1.000	25.40	FBP-011-1T3C10-62150075	FBP-014-1T3C40-62150075
1.5	38.1	1	25.4	3.000	76.20	1.125	28.58	FBP-011-1T3C10-62150100	FBP-014-1T3C40-62150100
2	50.8	0.5	12.7	3.250	82.55	1.000	25.40	FBP-011-1T3C10-62200050	FBP-014-1T3C40-62150050
2	50.8	0.75	19.05	3.250	82.55	1.125	28.58	FBP-011-1T3C10-62200075	FBP-014-1T3C40-62200175
2	50.8	1	25.4	3.250	82.55	1.250	31.75	FBP-011-1T3C10-62200100	FBP-014-1T3C40-62200100
2	50.8	1.5	38.1	3.250	82.55	1.500	38.10	FBP-011-1T3C10-62200150	FBP-014-1T3C40-62200150

4 Reducer

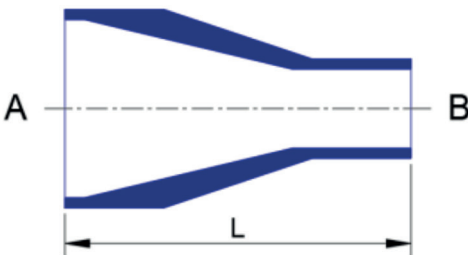
DT-4.1.3-1 Concentric Reducer Weld Ends (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	4.000	101.6	FBP-011-8R001A-62075050	FBP-011-8R004A-62075050
1	25.4	1/2	12.7	4.500	114.3	FBP-111-8R001A-62100050	FBP-111-8R004A-62100050
1	25.4	3/4	19.05	4.000	101.6	FBP-111-8R001A-62100075	FBP-111-8R004A-62100075
1.5	38.1	3/4	19.05	5.000	127.0	FBP-111-8R001A-62150075	FBP-111-8R004A-62150075
1.5	38.1	1	25.4	5.000	127.0	FBP-111-8R001A-62150100	FBP-111-8R004A-62150100
2	50.8	1	25.4	7.250	184.2	FBP-111-8R001A-62200100	FBP-111-8R004A-62200100
2	50.8	1.5	38.1	5.250	133.4	FBP-111-8R001A-62200150	FBP-111-8R004A-62200150
2.5	63.5	1.5	38.1	7.250	184.2	FBP-111-8R001A-62250150	FBP-111-8R004A-62250150
2.5	63.5	2	50.8	5.500	139.7	FBP-111-8R001A-62250200	FBP-111-8R004A-62250200
3	76.2	1.5	38.1	9.250	235.0	FBP-111-8R001A-62300150	FBP-111-8R004A-62300150
3	76.2	2	50.8	7.500	190.5	FBP-111-8R001A-62300200	FBP-111-8R004A-62300200
3	76.2	2.5	63.5	5.500	139.7	FBP-111-8R001A-62300250	FBP-111-8R004A-62300250
4	101.6	2	50.8	11.750	298.5	FBP-111-8R001A-62400200	FBP-111-8R004A-62400200
4	101.6	2.5	63.5	9.750	247.7	FBP-111-8R001A-62400250	FBP-111-8R004A-62400250
4	101.6	3	76.2	7.750	196.9	FBP-111-8R001A-62400300	FBP-111-8R004A-62400300
6	152.4	3	76.2	10.000	254.0	FBP-111-8R001A-62600300	FBP-111-8R004A-62600300
6	152.4	4	101.6	10.000	254.0	FBP-111-8R001A-62600400	FBP-111-8R004A-62600400

4 Reducer

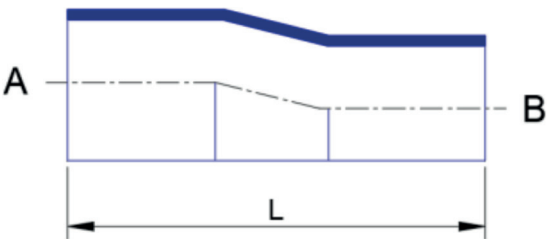
DT-4.1.3-1 Concentric Reducer Weld Ends (Type B)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.125	53.98	FBP-011-8R001B-62075050	FBP-014-8R004B-62075050
1	25.4	1/2	12.7	2.500	63.50	FBP-011-8R001B-62100050	FBP-014-8R004B-62100050
1	25.4	3/4	19.05	2.125	53.98	FBP-011-8R001B-62100075	FBP-014-8R004B-62100075
1.5	38.1	3/4	19.05	3.000	76.20	FBP-011-8R001B-62150075	FBP-014-8R004B-62150075
1.5	38.1	1	25.4	2.500	63.50	FBP-011-8R001B-62150100	FBP-014-8R004B-62150100
2	50.8	1	38.1	3.375	85.73	FBP-011-8R001B-62200100	FBP-014-8R004B-62200100
2	50.8	1.5	38.1	2.500	63.50	FBP-011-8R001B-62200150	FBP-014-8R004B-62200150
2.5	63.5	1.5	50.8	3.375	85.73	FBP-011-8R001B-62250150	FBP-014-8R004B-62250150
2.5	63.5	2	38.1	2.500	63.50	FBP-011-8R001B-62250200	FBP-014-8R004B-62250200
3	76.2	1.5	50.8	4.250	107.95	FBP-011-8R001B-62300150	FBP-014-8R004B-62300150
3	76.2	2	50.8	3.375	85.73	FBP-011-8R001B-62300200	FBP-014-8R004B-62300200
3	76.2	2.5	63.5	2.625	66.68	FBP-011-8R001B-62300250	FBP-014-8R004B-62300250
4	101.6	2	50.8	5.125	130.18	FBP-011-8R001B-62400200	FBP-014-8R004B-62400200
4	101.6	2.5	63.5	4.250	107.95	FBP-011-8R001B-62400250	FBP-014-8R004B-62400250
4	101.6	3	76.2	3.875	98.43	FBP-011-8R001B-62400300	FBP-014-8R004B-62400300
6	152.4	3	76.2	7.250	184.15	FBP-011-8R001B-62600300	FBP-014-8R004B-62600300
6	152.4	4	101.6	5.625	142.88	FBP-011-8R001B-62600400	FBP-014-8R004B-62600400

4 Reducer

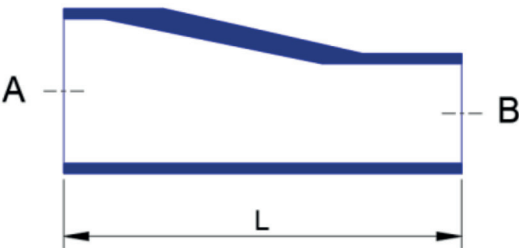
DT-4.1.3-1 Eccentric Reducer Weld Ends (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	4.000	101.6	FBP-011-3R001A-62075050	FBP-014-3R004A-62075050
1	25.4	1/2	12.7	4.500	114.3	FBP-111-3R001A-62100050	FBP-114-3R004A-62100050
1	25.4	3/4	19.05	4.000	101.6	FBP-111-3R001A-62100075	FBP-114-3R004A-62100075
1.5	38.1	3/4	19.05	5.000	127.0	FBP-111-3R001A-62150075	FBP-114-3R004A-62150075
1.5	38.1	1	25.4	5.000	127.0	FBP-111-3R001A-62150100	FBP-114-3R004A-62150100
2	50.8	1	25.4	7.250	184.2	FBP-111-3R001A-62200100	FBP-114-3R004A-62200100
2	50.8	1.5	38.1	5.250	133.4	FBP-111-3R001A-62200150	FBP-114-3R004A-62200150
2.5	63.5	1.5	38.1	7.250	184.2	FBP-111-3R001A-62250150	FBP-114-3R004A-62250150
2.5	63.5	2	50.8	5.500	139.7	FBP-111-3R001A-62250200	FBP-114-3R004A-62250200
3	76.2	1.5	38.1	9.250	235.0	FBP-111-3R001A-62300150	FBP-114-3R004A-62300150
3	76.2	2	50.8	7.500	190.5	FBP-111-3R001A-62300200	FBP-114-3R004A-62300200
3	76.2	2.5	63.5	5.500	139.7	FBP-111-3R001A-62300250	FBP-114-3R004A-62300250
4	101.6	2	50.8	11.750	298.5	FBP-111-3R001A-62400200	FBP-114-3R004A-62400200
4	101.6	2.5	63.5	9.750	247.7	FBP-111-3R001A-62400250	FBP-114-3R004A-62400250
4	101.6	3	76.2	7.750	196.9	FBP-111-3R001A-62400300	FBP-114-3R004A-62400300
6	152.4	3	76.2	9.750	247.7	FBP-111-3R001A-62600300	FBP-114-3R004A-62600300
6	152.4	4	101.6	10.000	254.0	FBP-111-3R001A-62600400	FBP-114-3R004A-62600400

4 Reducer

DT-4.1.3-1 Eccentric Reducer Weld Ends (Type B)

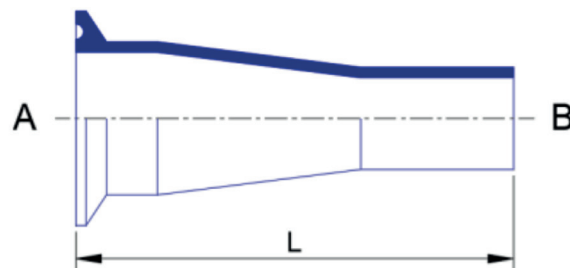


Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.125	53.98	FBP-011-3R001B-62075050	FBP-014-3R004B-62075050
1	25.4	1/2	12.7	2.500	63.50	FBP-011-3R001B-62100050	FBP-014-3R004B-62100050
1	25.4	3/4	19.05	2.125	53.98	FBP-011-3R001B-62100075	FBP-014-3R004B-62100075
1.5	38.1	3/4	19.05	3.000	76.20	FBP-011-3R001B-62150075	FBP-014-3R004B-62150075
1.5	38.1	1	25.4	2.500	63.50	FBP-011-3R001B-62150100	FBP-014-3R004B-62150100
2	50.8	1	38.1	3.375	85.73	FBP-011-3R001B-62200100	FBP-014-3R004B-62200100
2	50.8	1.5	38.1	2.500	63.50	FBP-011-3R001B-62200150	FBP-014-3R004B-62200150
2.5	63.5	1.5	50.8	3.375	85.73	FBP-011-3R001B-62250150	FBP-014-3R004B-62250150
2.5	63.5	2	38.1	2.500	63.50	FBP-011-3R001B-62250200	FBP-014-3R004B-62250200
3	76.2	1.5	50.8	4.250	107.95	FBP-011-3R001B-62300150	FBP-014-3R004B-62300150
3	76.2	2	50.8	3.375	85.73	FBP-011-3R001B-62300200	FBP-014-3R004B-62300200
3	76.2	2.5	63.5	2.625	66.68	FBP-011-3R001B-62300250	FBP-014-3R004B-62300250
4	101.6	2	50.8	5.125	130.18	FBP-011-3R001B-62400200	FBP-014-3R004B-62400200
4	101.6	2.5	63.5	4.250	107.95	FBP-011-3R001B-62400250	FBP-014-3R004B-62400250
4	101.6	3	76.2	3.875	98.43	FBP-011-3R001B-62400300	FBP-014-3R004B-62400300
6	152.4	3	76.2	7.250	184.15	FBP-011-3R001B-62600300	FBP-014-3R004B-62600300
6	152.4	4	101.6	5.625	142.88	FBP-011-3R001B-62600400	FBP-014-3R004B-62600400

4 Reducer

DT-4.1.3-2

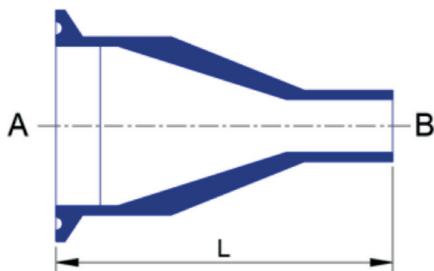
Concentric Reducer Weld/Clamp End (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	3.000	76.2	FBP-011-8R1C1A-62075050	FBP-014-8R1C4A-62075050
1	25.4	1/2	12.7	3.500	88.9	FBP-111-8R1C1A-62100050	FBP-114-8R1C4A-62100050
1	25.4	3/4	19.05	3.000	76.2	FBP-111-8R1C1A-62100075	FBP-114-8R1C4A-62100075
1.5	38.1	3/4	19.05	4.000	101.6	FBP-111-8R1C1A-62150075	FBP-114-8R1C4A-62150075
1.5	38.1	1	25.4	4.000	101.6	FBP-111-8R1C1A-62150100	FBP-114-8R1C4A-62150100
2	50.8	1	25.4	6.000	152.4	FBP-111-8R1C1A-62200100	FBP-114-8R1C4A-62200100
2	50.8	1.5	38.1	4.000	101.6	FBP-111-8R1C1A-62200150	FBP-114-8R1C4A-62200150
2.5	63.5	1.5	38.1	6.000	152.4	FBP-111-8R1C1A-62250150	FBP-114-8R1C4A-62250150
2.5	63.5	2	50.8	4.250	107.9	FBP-111-8R1C1A-62250200	FBP-114-8R1C4A-62250200
3	76.2	1.5	38.1	8.000	203.2	FBP-111-8R1C1A-62300150	FBP-114-8R1C4A-62300150
3	76.2	2	50.8	6.250	158.8	FBP-111-8R1C1A-62300200	FBP-114-8R1C4A-62300200
3	76.2	2.5	63.5	4.250	108.0	FBP-111-8R1C1A-62300250	FBP-114-8R1C4A-62300250
4	101.6	2	50.8	10.375	263.5	FBP-111-8R1C1A-62400200	FBP-114-8R1C4A-62400200
4	101.6	2.5	63.5	8.375	212.7	FBP-111-8R1C1A-62400250	FBP-114-8R1C4A-62400250
4	101.6	3	76.2	6.375	161.9	FBP-111-8R1C1A-62400300	FBP-114-8R1C4A-62400300
6	152.4	3	76.2	9.000	228.6	FBP-111-8R1C1A-62600300	FBP-114-8R1C4A-62600300
6	152.4	4	101.6	9.000	228.6	FBP-111-8R1C1A-62600400	FBP-114-8R1C4A-62600400

4 Reducer

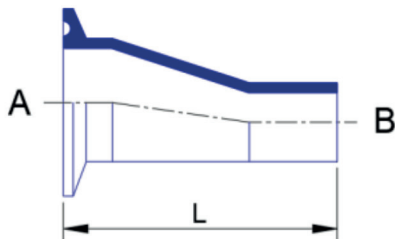
DT-4.1.3-2 Concentric Reducer Weld/Clamp End (Type B)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.625	66.68	FBP-011-8R1C1B-62075050	FBP-014-8R1C4B-62075050
1	25.4	1/2	12.7	3.000	76.20	FBP-011-8R1C1B-62100050	FBP-014-8R1C4B-62100050
1	25.4	3/4	19.05	2.625	66.68	FBP-011-8R1C1B-62100075	FBP-014-8R1C4B-62100075
1.5	38.1	3/4	19.05	3.500	88.90	FBP-011-8R1C1B-62150075	FBP-014-8R1C4B-62150075
1.5	38.1	1	25.4	3.000	76.20	FBP-011-8R1C1B-62150100	FBP-014-8R1C4B-62150100
2	50.8	1	38.1	3.875	98.43	FBP-011-8R1C1B-62200100	FBP-014-8R1C4B-62200100
2	50.8	1.5	38.1	3.000	76.20	FBP-011-8R1C1B-62200150	FBP-014-8R1C4B-62200150
2.5	63.5	1.5	50.8	3.875	98.43	FBP-011-8R1C1B-62250150	FBP-014-8R1C4B-62250150
2.5	63.5	2	38.1	3.000	76.20	FBP-011-8R1C1B-62250200	FBP-014-8R1C4B-62250200
3	76.2	1.5	50.8	4.750	120.65	FBP-011-8R1C1B-62300150	FBP-014-8R1C4B-62300150
3	76.2	2	50.8	3.875	98.43	FBP-011-8R1C1B-62300200	FBP-014-8R1C4B-62300200
3	76.2	2.5	63.5	3.125	79.38	FBP-011-8R1C1B-62300250	FBP-014-8R1C4B-62300250
4	101.6	2	50.8	5.750	146.05	FBP-011-8R1C1B-62400200	FBP-014-8R1C4B-62400200
4	101.6	2.5	63.5	4.875	123.83	FBP-011-8R1C1B-62400250	FBP-014-8R1C4B-62400250
4	101.6	3	76.2	4.500	114.30	FBP-011-8R1C1B-62400300	FBP-014-8R1C4B-62400300
6	152.4	3	76.2	8.000	203.20	FBP-011-8R1C1B-62600300	FBP-014-8R1C4B-62600300
6	152.4	4	101.6	6.375	161.93	FBP-011-8R1C1B-62600400	FBP-014-8R1C4B-62600400

4 Reducer

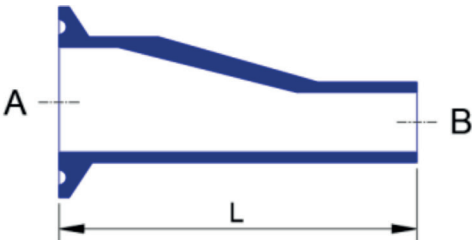
DT-4.1.3-2 Eccentric Reducer Weld/Clamp End (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	Inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	3.000	76.2	FBP-011-3R1C1A-62075050	FBP-014-3R1C4A-62075050
1	25.4	1/2	12.7	3.500	88.9	FBP-111-3R1C1A-62100050	FBP-114-3R1C4A-62100050
1	25.4	3/4	19.05	3.000	76.2	FBP-111-3R1C1A-62100075	FBP-114-3R1C4A-62100075
1.5	38.1	3/4	19.05	4.000	101.6	FBP-111-3R1C1A-62150075	FBP-114-3R1C4A-62150075
1.5	38.1	1	25.4	4.000	101.6	FBP-111-3R1C1A-62150100	FBP-114-3R1C4A-62150100
2	50.8	1	25.4	6.000	152.4	FBP-111-3R1C1A-62200100	FBP-114-3R1C4A-62200100
2	50.8	1.5	38.1	4.000	101.6	FBP-111-3R1C1A-62200150	FBP-114-3R1C4A-62200150
2.5	63.5	1.5	38.1	6.000	152.4	FBP-111-3R1C1A-62250150	FBP-114-3R1C4A-62250150
2.5	63.5	2	50.8	4.250	107.9	FBP-111-3R1C1A-62250200	FBP-114-3R1C4A-62250200
3	76.2	1.5	38.1	8.000	203.2	FBP-111-3R1C1A-62300150	FBP-114-3R1C4A-62300150
3	76.2	2	50.8	6.250	158.8	FBP-111-3R1C1A-62300200	FBP-114-3R1C4A-62300200
3	76.2	2.5	63.5	4.250	108.0	FBP-111-3R1C1A-62300250	FBP-114-3R1C4A-62300250
4	101.6	2	50.8	10.375	263.5	FBP-111-3R1C1A-62400200	FBP-114-3R1C4A-62400200
4	101.6	2.5	63.5	8.375	212.7	FBP-111-3R1C1A-62400250	FBP-114-3R1C4A-62400250
4	101.6	3	76.2	6.375	161.9	FBP-111-3R1C1A-62400300	FBP-114-3R1C4A-62400300
6	152.4	3	76.2	8.750	222.3	FBP-111-3R1C1A-62600300	FBP-114-3R1C4A-62600300
6	152.4	4	101.6	9.000	228.6	FBP-111-3R1C1A-62600400	FBP-114-3R1C4A-62600400

4 Reducer

DT-4.1.3-2 Eccentric Reducer Weld/Clamp End (Type B)

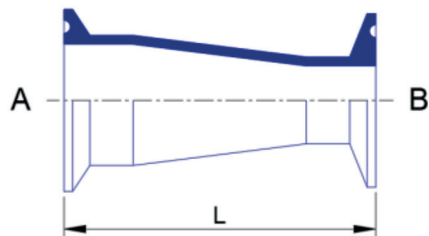


Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.625	66.68	FBP-011-3R1C1B-62075050	FBP-014-3R1C4B-62075050
1	25.4	1/2	12.7	3.000	76.20	FBP-011-3R1C1B-62100050	FBP-014-3R1C4B-62100050
1	25.4	3/4	19.05	2.625	66.68	FBP-011-3R1C1B-62100075	FBP-014-3R1C4B-62100075
1.5	38.1	3/4	19.05	3.500	88.90	FBP-011-3R1C1B-62150075	FBP-014-3R1C4B-62150075
1.5	38.1	1	25.4	3.000	76.20	FBP-011-3R1C1B-62150100	FBP-014-3R1C4B-62150100
2	50.8	1	38.1	3.875	98.43	FBP-011-3R1C1B-62200100	FBP-014-3R1C4B-62200100
2	50.8	1.5	38.1	3.000	76.20	FBP-011-3R1C1B-62200150	FBP-014-3R1C4B-62200150
2.5	63.5	1.5	50.8	3.875	98.43	FBP-011-3R1C1B-62250150	FBP-014-3R1C4B-62250150
2.5	63.5	2	38.1	3.000	76.20	FBP-011-3R1C1B-62250200	FBP-014-3R1C4B-62250200
3	76.2	1.5	50.8	4.750	120.65	FBP-011-3R1C1B-62300150	FBP-014-3R1C4B-62300150
3	76.2	2	50.8	3.875	98.43	FBP-011-3R1C1B-62300200	FBP-014-3R1C4B-62300200
3	76.2	2.5	63.5	3.125	79.38	FBP-011-3R1C1B-62300250	FBP-014-3R1C4B-62300250
4	101.6	2	50.8	5.750	146.05	FBP-011-3R1C1B-62400200	FBP-014-3R1C4B-62400200
4	101.6	2.5	63.5	4.875	123.83	FBP-011-3R1C1B-62400250	FBP-014-3R1C4B-62400250
4	101.6	3	76.2	4.500	114.30	FBP-011-3R1C1B-62400300	FBP-014-3R1C4B-62400300
6	152.4	3	76.2	8.000	203.20	FBP-011-3R1C1B-62600300	FBP-014-3R1C4B-62600300
6	152.4	4	101.6	6.375	161.93	FBP-011-3R1C1B-62600400	FBP-014-3R1C4B-62600400

4 Reducer

DT-4.1.3-3

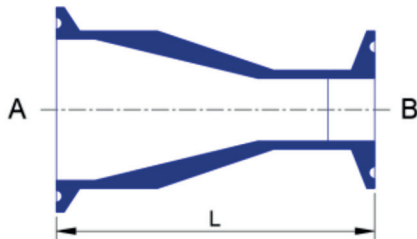
Concentric Reducer Clamp Ends (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.000	50.8	FBP-011-8R2C1A-62075050	FBP-014-8R2C4A-62075050
1	25.40	1/2	12.7	2.500	63.5	FBP-111-8R2C1A-62100050	FBP-114-8R2C4A-62100050
1	25.40	3/4	19.05	2.000	50.8	FBP-111-8R2C1A-62100075	FBP-114-8R2C4A-62100075
1.5	38.10	3/4	19.05	3.000	76.2	FBP-111-8R2C1A-62150075	FBP-114-8R2C4A-62150075
1.5	38.10	1.0	25.4	3.000	76.2	FBP-111-8R2C1A-62150100	FBP-114-8R2C4A-62150100
2	50.80	1.0	25.4	5.000	127.0	FBP-111-8R2C1A-62200100	FBP-114-8R2C4A-62200100
2	50.80	1.5	38.1	3.000	76.2	FBP-111-8R2C1A-62200150	FBP-114-8R2C4A-62200150
2.5	63.50	1.5	38.1	5.000	127.0	FBP-111-8R2C1A-62250150	FBP-114-8R2C4A-62250150
2.5	63.50	2.0	50.8	3.000	76.2	FBP-111-8R2C1A-62250200	FBP-114-8R2C4A-62250200
3	76.20	1.5	38.1	7.000	177.8	FBP-111-8R2C1A-62300150	FBP-114-8R2C4A-62300150
3	76.20	2.0	50.8	5.000	127.0	FBP-111-8R2C1A-62300200	FBP-114-8R2C4A-62300200
3	76.20	2.5	63.5	3.000	76.2	FBP-111-8R2C1A-62300250	FBP-114-8R2C4A-62300250
4	101.60	2.0	50.8	9.125	231.8	FBP-111-8R2C1A-62400200	FBP-114-8R2C4A-62400200
4	101.60	2.5	63.5	7.125	181.0	FBP-111-8R2C1A-62400250	FBP-114-8R2C4A-62400250
4	101.60	3.0	76.2	5.125	130.2	FBP-111-8R2C1A-62400300	FBP-114-8R2C4A-62400300
6	152.4	3	76.2	7.625	193.7	FBP-111-8R2C1A-62600300	FBP-114-8R2C4A-62600300
6	152.4	4	101.6	7.625	193.7	FBP-111-8R2C1A-62600400	FBP-114-8R2C4A-62600400

4 Reducer

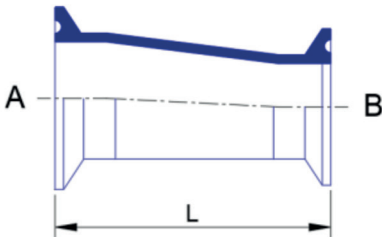
DT-4.1.3-3 Concentric Reducer Clamp Ends (Type B)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	3.125	79.38	FBP-011-8R2C1B-62075050	FBP-014-8R2C4B-62075050
1	25.4	1/2	12.7	3.500	88.90	FBP-011-8R2C1B-62100050	FBP-014-8R2C4B-62100050
1	25.4	3/4	19.05	3.125	79.38	FBP-011-8R2C1B-62100075	FBP-014-8R2C4B-62100075
1.5	38.1	3/4	19.05	4.000	101.60	FBP-011-8R2C1B-62150075	FBP-014-8R2C4B-62150075
1.5	38.1	1	25.4	3.500	88.90	FBP-011-8R2C1B-62150100	FBP-014-8R2C4B-62150100
2	50.8	1	25.4	4.375	111.13	FBP-011-8R2C1B-62200100	FBP-014-8R2C4B-62200100
2	50.8	1.5	38.1	3.500	88.90	FBP-011-8R2C1B-62200150	FBP-014-8R2C4B-62200150
2.5	63.5	1.5	38.1	4.375	111.13	FBP-011-8R2C1B-62250150	FBP-014-8R2C4B-62250150
2.5	63.5	2	50.8	3.500	88.90	FBP-011-8R2C1B-62250200	FBP-014-8R2C4B-62250200
3	76.2	1.5	38.1	5.250	133.35	FBP-011-8R2C1B-62300150	FBP-014-8R2C4B-62300150
3	76.2	2.0	50.8	4.375	111.13	FBP-011-8R2C1B-62300200	FBP-014-8R2C4B-62300200
3	76.2	2.5	63.5	3.625	92.08	FBP-011-8R2C1B-62300250	FBP-014-8R2C4B-62300250
4	101.6	2	50.8	6.250	158.75	FBP-011-8R2C1B-62400200	FBP-014-8R2C4B-62400200
4	101.6	2.5	63.5	5.375	136.53	FBP-011-8R2C1B-62400250	FBP-014-8R2C4B-62400250
4	101.6	3	76.2	5.000	127.00	FBP-011-8R2C1B-62400300	FBP-014-8R2C4B-62400300
6	152.4	3	76.2	8.500	215.90	FBP-011-8R2C1B-62600300	FBP-014-8R2C4B-62600300
6	152.4	4	101.6	7.000	177.80	FBP-011-8R2C1B-62600400	FBP-014-8R2C4B-62600400

4 Reducer

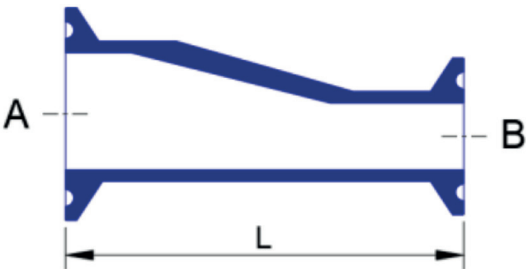
DT-4.1.3-3 Eccentric Reducer Clamp Ends (Type A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	2.000	50.8	FBP-011-3R2C1A-62075050	FBP-014-3R2C4A-62075050
1	25.40	1/2	12.7	2.500	63.5	FBP-111-3R2C1A-62100050	FBP-114-3R2C4A-62100050
1	25.40	3/4	19.05	2.000	50.8	FBP-111-3R2C1A-62100075	FBP-114-3R2C4A-62100075
1.5	38.10	3/4	19.05	3.000	76.2	FBP-111-3R2C1A-62150075	FBP-114-3R2C4A-62150075
1.5	38.10	1.0	25.4	3.000	76.2	FBP-111-3R2C1A-62150100	FBP-114-3R2C4A-62150100
2	50.80	1.0	25.4	5.000	127.0	FBP-111-3R2C1A-62200100	FBP-114-3R2C4A-62200100
2	50.80	1.5	38.1	3.000	76.2	FBP-111-3R2C1A-62200150	FBP-114-3R2C4A-62200150
2.5	63.50	1.5	38.1	5.000	127.0	FBP-111-3R2C1A-62250150	FBP-114-3R2C4A-62250150
2.5	63.50	2.0	50.8	3.000	76.2	FBP-111-3R2C1A-62250200	FBP-114-3R2C4A-62250200
3	76.20	1.5	38.1	7.000	177.8	FBP-111-3R2C1A-62300150	FBP-114-3R2C4A-62300150
3	76.20	2.0	50.8	5.000	127.0	FBP-111-3R2C1A-62300200	FBP-114-3R2C4A-62300200
3	76.20	2.5	63.5	3.000	76.2	FBP-111-3R2C1A-62300250	FBP-114-3R2C4A-62300250
4	101.60	2.0	50.8	9.125	231.8	FBP-111-3R2C1A-62400200	FBP-114-3R2C4A-62400200
4	101.60	2.5	63.5	7.125	181.0	FBP-111-3R2C1A-62400250	FBP-114-3R2C4A-62400250
4	101.60	3.0	76.2	5.125	130.2	FBP-111-3R2C1A-62400300	FBP-114-3R2C4A-62400300
6	152.4	3	76.2	7.500	190.5	FBP-111-3R2C1A-62600300	FBP-114-3R2C4A-62600300
6	152.4	4	101.6	7.625	193.7	FBP-111-3R2C1A-62600400	FBP-114-3R2C4A-62600400

4 Reducer

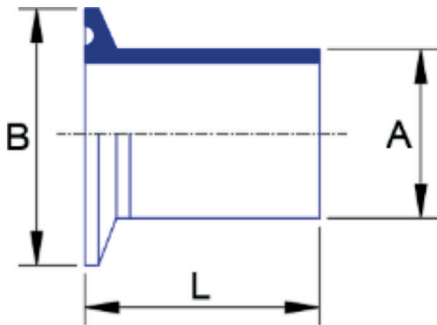
DT-4.1.3-3 Eccentric Reducer Clamp Ends (Type B)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	inch	mm	SF1	SF4
3/4	19.05	1/2	12.7	3.125	79.38	FBP-011-3R2C1B-62075050	FBP-014-3R2C4B-62075050
1	25.4	1/2	12.7	3.500	88.90	FBP-011-3R2C1B-62100050	FBP-014-3R2C4B-62100050
1	25.4	3/4	19.05	3.125	79.38	FBP-011-3R2C1B-62100075	FBP-014-3R2C4B-62100075
1.5	38.1	3/4	19.05	4.000	101.60	FBP-011-3R2C1B-62150075	FBP-014-3R2C4B-62150075
1.5	38.1	1	25.4	3.500	88.90	FBP-011-3R2C1B-62150100	FBP-014-3R2C4B-62150100
2	50.8	1	25.4	4.375	111.13	FBP-011-3R2C1B-62200100	FBP-014-3R2C4B-62200100
2	50.8	1.5	38.1	3.500	88.90	FBP-011-3R2C1B-62200150	FBP-014-3R2C4B-62200150
2.5	63.5	1.5	38.1	4.375	111.13	FBP-011-3R2C1B-62250150	FBP-014-3R2C4B-62250150
2.5	63.5	2	50.8	3.500	88.90	FBP-011-3R2C1B-62250200	FBP-014-3R2C4B-62250200
3	76.2	1.5	38.1	5.250	133.35	FBP-011-3R2C1B-62300150	FBP-014-3R2C4B-62300150
3	76.2	2.0	50.8	4.375	111.13	FBP-011-3R2C1B-62300200	FBP-014-3R2C4B-62300200
3	76.2	2.5	63.5	3.625	92.08	FBP-011-3R2C1B-62300250	FBP-014-3R2C4B-62300250
4	101.6	2	50.8	6.250	158.75	FBP-011-3R2C1B-62400200	FBP-014-3R2C4B-62400200
4	101.6	2.5	63.5	5.375	136.53	FBP-011-3R2C1B-62400250	FBP-014-3R2C4B-62400250
4	101.6	3	76.2	5.000	127.00	FBP-011-3R2C1B-62400300	FBP-014-3R2C4B-62400300
6	152.4	3	76.2	8.500	215.90	FBP-011-3R2C1B-62600300	FBP-014-3R2C4B-62600300
6	152.4	4	101.6	7.000	177.80	FBP-011-3R2C1B-62600400	FBP-014-3R2C4B-62600400

5 Ferrule

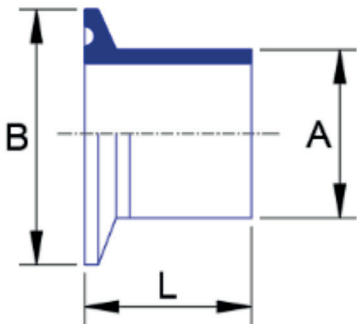
DT-4.1.4-1 Ferrule (A)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	Inch	mm	SF1	SF4
1/2	12.7	0.984	25.0	1.750	44.45	FBP-011-8F0A1S-6205000	FBP-014-8F0A4S-6205000
3/4	19.05	0.984	25.0	1.750	44.45	FBP-011-8F0A1S-6207500	FBP-014-8F0A4S-6207500
1	25.4	1.984	34.0	1.750	44.45	FBP-011-8F0A1F-62100000	FBP-014-8F0A4F-62100000
1.5	38.1	1.984	50.39	1.750	44.45	FBP-011-8F0A1F-62150000	FBP-014-8F0A4F-62150000
2	50.8	2.516	63.91	2.250	57.15	FBP-011-8F0A1F-62200000	FBP-014-8F0A4F-62200000
2.5	63.5	3.047	77.39	2.250	57.15	FBP-011-8F0A1F-62250000	FBP-014-8F0A4F-62250000
3	76.2	3.579	90.91	2.250	57.15	FBP-011-8F0A1F-62300000	FBP-014-8F0A4F-62300000
4	101.6	4.682	118.92	2.250	57.15	FBP-011-8F0A1F-62400000	FBP-014-8F0A4F-62400000
6	152.4	6.570	166.88	3.000	76.20	FBP-011-8F0A1F-62600000	FBP-014-8F0A4F-62600000

5 Ferrule

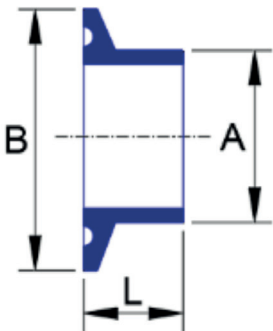
DT-4.1.4-1 Ferrule (B)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	Inch	mm	SF1	SF4
1/2	12.7	0.984	25.0	1.125	28.58	FBP-011-8F0B1S-6205000	FBP-014-8F0B4S-6205000
3/4	19.05	0.984	25.0	1.125	28.58	FBP-011-8F0B1S-6207500	FBP-014-8F0B4S-6207500
1	25.4	1.984	34.0	1.125	28.58	FBP-011-8F0B1F-62100000	FBP-014-8F0B4F-62100000
1.5	38.1	1.984	50.39	1.125	28.58	FBP-011-8F0B1F-62150000	FBP-014-8F0B4F-62150000
2	50.8	2.516	63.91	1.125	28.58	FBP-011-8F0B1F-62200000	FBP-014-8F0B4F-62200000
2.5	63.5	3.047	77.39	1.125	28.58	FBP-011-8F0B1F-62250000	FBP-014-8F0B4F-62250000
3	76.2	3.579	90.91	1.125	28.58	FBP-011-8F0B1F-62300000	FBP-014-8F0B4F-62300000
4	101.6	4.682	118.92	1.125	28.58	FBP-011-8F0B1F-62400000	FBP-014-8F0B4F-62400000
6	152.4	6.570	166.88	1.500	38.10	FBP-011-8F0B1F-62600000	FBP-014-8F0B4F-62600000

5 Ferrule

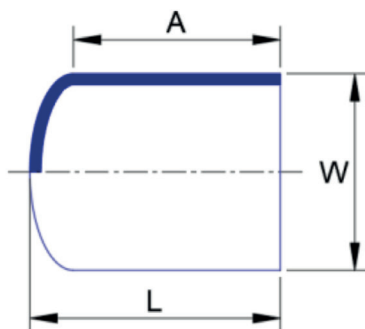
DT-4.1.4-1 Ferrule (C)



Size(A)		Size(B)		L		Part #	Part #
inch	mm	inch	mm	Inch	mm	SF1	SF4
1/2	12.7	0.984	25.0	0.500	12.70	FBP-011-8F0C1S-6205000	FBP-014-8F0C4S-6205000
3/4	19.05	0.984	25.0	0.500	12.70	FBP-011-8F0C1S-6207500	FBP-014-8F0C4S-6207500
1	25.4	1.984	34.0	0.500	12.70	FBP-011-8F0C1F-62100000	FBP-014-8F0C4F-62100000
1.5	38.1	1.984	50.39	0.500	12.70	FBP-011-8F0C1F-62150000	FBP-014-8F0C4F-62150000
2	50.8	2.516	63.91	0.500	12.70	FBP-011-8F0C1F-62200000	FBP-014-8F0C4F-62200000
2.5	63.5	3.047	77.39	0.500	12.70	FBP-011-8F0C1F-62250000	FBP-014-8F0C4F-62250000
3	76.2	3.579	90.91	0.500	12.70	FBP-011-8F0C1F-62300000	FBP-014-8F0C4F-62300000
4	101.6	4.682	118.92	0.625	15.88	FBP-011-8F0C1F-62400000	FBP-014-8F0C4F-62400000
6	152.4	6.570	166.88	0.750	19.05	FBP-011-8F0C1F-62600000	FBP-014-8F0C4F-62600000

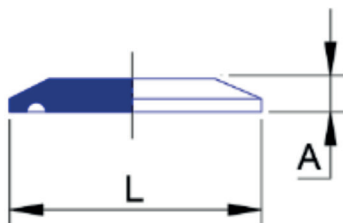
6 Cap

DT-4.1.5-1 Cap Weld End



OD(A)		L mm	A mm	Part #	
inch	mm			SF1	SF4
1/2	12.7	44.5	38.10	FBP-011-1C0010-62050150	FBP-014-1C0040-62050150
3/4	19.05	46.0	38.10	FBP-011-1C0010-62075150	FBP-014-1C0040-62075150
1.0	25.4	47.6	38.10	FBP-011-1C0010-62100150	FBP-014-1C0040-62100150
1.5	38.1	52.4	38.10	FBP-011-1C0010-62150150	FBP-014-1C0040-62150150
2.0	50.8	63.5	38.10	FBP-011-1C0010-62200150	FBP-014-1C0040-62200150
2.5	63.5	71.4	38.10	FBP-011-1C0010-62250150	FBP-014-1C0040-62250150
3.0	76.2	73.0	44.45	FBP-011-1C0010-62300175	FBP-014-1C0040-62300175
4.0	101.6	82.6	50.80	FBP-011-1C0010-62400200	FBP-014-1C0040-62400200
6.0	152.4	120.7	63.50	FBP-011-1C0010-62600250	FBP-014-1C0040-62600250

DT-4.1.5-2 Solid End Cap



OD(A)		L mm	A mm	Part #	
inch	mm			SF1	SF4
1/2	12.70	25.0	4.75	FBP-011-1C001S-62100150	FBP-014-1C004S-62100150
3/4	19.05	25.0	4.75	FBP-011-1C001S-62150150	FBP-014-1C004S-62150150
1.0	25.40	34.0	6.35	FBP-011-1C001F-62200150	FBP-014-1C004F-62200150
1.5	38.10	50.39	6.35	FBP-011-1C001F-62250150	FBP-014-1C004F-62250150
2.0	50.80	63.91	6.35	FBP-011-1C001F-62300175	FBP-014-1C004F-62300175
2.5	63.50	77.39	6.35	FBP-011-1C001F-62400200	FBP-014-1C004F-62400200
3.0	76.20	90.91	6.35	FBP-011-1C001F-62600250	FBP-014-1C004F-62600250
4.0	101.60	118.92	7.92	FBP-011-1C001F-62050150	FBP-014-1C004F-62050150
6.0	152.40	166.88	11.10	FBP-011-1C001F-62075150	FBP-014-1C004F-62075150



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