

Bradford™ High Purity BioPharm Fittings**Specifications**

All fittings are manufactured to meet the latest edition of the ASME BPE International Standard, bioprocessing equipment.

316L stainless steel material and dimensions meet all orbital welding specifications with controlled sulphur.

Markets

- pharmaceutical
- cosmetics
- bioprocessing
- food processing
- semiconductor
- beverage

Packaging**Product markings per ASME BPE 2009 DT-14.1**

- Job number
- Heat number(s)
- 316L
- Surface finish code
- Bradford™ part number
- ASME BPE

Per the specification, the size of the fitting may limit the space available for markings. When this occurs, the markings starting at the bottom of the list are not applied. The Bradford™ part number will describe the part configuration and size.

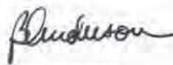

MTR (material test report) certifications are included inside the resealable bag with each fitting. The MTRs are traceable through the Job Number found on each fitting. All fittings are capped to prevent damage and contamination.

For easy identification each finish will have a different color cap.

PL finish - SF1...blue caps

PM finish - SF4...white caps

Material test reports are also available from the Dixon Sanitary website (bradfordfittings.com); just enter the job number located on each fitting.

Bradford™ High Purity BioPharm Fittings										
316L Stainless Steel Material Test Report										
Job Number		AA158								
Bradford™ Part Number	Description	Size			Surface finish					
T16W-200PL	BPE auto weld cap Table DT-30	2"			SF1					
Chemical analysis (%) per ASME BPE 2009 Table DT-3										
Item	Heat number	C	Mn	P	S	Si	Cr	Ni	Mo	
		0.030	2.00	0.045	0.017	1.00	16.00	10.00	2.00	min.
M	823310	0.014	1.40	0.034	0.012	0.44	16.30	10.10	3.00	max.
B	823707	0.014	1.49	0.033	0.010	0.38	16.20	10.10	2.08	
Mechanical Test Results										
Item	Yield Strength (0.2%), MPa	Tensile Strength, MPa	Elongation, %		Hardness, HRB		Specification			
	170 minimum	485 minimum	35 minimum		90 maximum					
M	378	624	46.1		88		ASTM A269			
B	358	586	43.9		83		ASTM A269			
Product of Thailand										
We certify that the above is a true copy of the test results issued by the material supplier. This MTR conforms to EN10204-3.1. All fittings supplied by Dixon Sanitary conform to the requirements of the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).										
 Bruce Anderson Technical Director										
Dixon Sanitary N25 W23040 Paul Rd. Pewaukee, WI 53072 USA 800-789-1718 bradfordfittings.com					 <i>The Right Connection™</i>					



Bradford™ High Purity BioPharm Fittings

90° Weld Elbows - T2S



BPE Table #DT-7

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
1/2"	3.00	T2S-050PL	\$56.90	T2S-050PM	\$90.85
3/4"	3.00	T2S-075PL	56.90	T2S-075PM	90.85
1"	3.00	T2S-100PL	54.55	T2S-100PM	88.80
1 1/2"	3.75	T2S-150PL	51.05	T2S-150PM	79.10
2"	4.75	T2S-200PL	62.65	T2S-200PM	105.40
2 1/2"	5.50	T2S-250PL	124.60	T2S-250PM	149.20
3"	6.25	T2S-300PL	173.30	T2S-300PM	198.70
4"	8.00	T2S-400PL	298.75	T2S-400PM	328.55

90° Clamp x Weld Elbows - T2CM



BPE Table #DT-12

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	3.00	1.625	T2CM-050PL	\$115.15	T2CM-050PM	\$131.60
3/4"	3.00	1.625	T2CM-075PL	115.15	T2CM-075PM	131.60
1"	3.00	2.000	T2CM-100PL	105.25	T2CM-100PM	123.45
1 1/2"	3.75	2.750	T2CM-150PL	105.25	T2CM-150PM	125.00
2"	4.75	3.500	T2CM-200PL	133.20	T2CM-200PM	157.95
2 1/2"	5.50	4.250	T2CM-250PL	204.40	T2CM-250PM	237.90
3"	6.25	5.000	T2CM-300PL	266.65	T2CM-300PM	300.20
4"	8.00	6.625	T2CM-400PL	415.15	T2CM-400PM	456.65

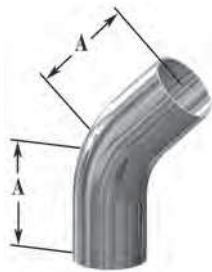
90° Clamp x Clamp Elbows - T2CMP



BPE Table #DT-16

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
1/2"	1.625	T2CMP-050PL	\$110.20	T2CMP-050PM	\$128.25
3/4"	1.625	T2CMP-075PL	110.20	T2CMP-075PM	128.25
1"	2.000	T2CMP-100PL	97.10	T2CMP-100PM	113.60
1 1/2"	2.750	T2CMP-150PL	97.10	T2CMP-150PM	116.75
2"	3.500	T2CMP-200PL	130.00	T2CMP-200PM	152.95
2 1/2"	4.250	T2CMP-250PL	214.00	T2CMP-250PM	242.75
3"	5.000	T2CMP-300PL	242.75	T2CMP-300PM	276.25
4"	6.625	T2CMP-400PL	498.15	T2CMP-400PM	542.85

45° Weld Elbows - T2KS



BPE Table #DT-8

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
1/2"	2.250	T2KS-050PL	\$60.40	T2KS-050PM	\$93.85
3/4"	2.250	T2KS-075PL	60.40	T2KS-075PM	93.85
1"	2.250	T2KS-100PL	63.90	T2KS-100PM	77.70
1 1/2"	2.500	T2KS-150PL	69.35	T2KS-150PM	87.70
2"	3.000	T2KS-200PL	82.10	T2KS-200PM	96.35
2 1/2"	3.375	T2KS-250PL	93.85	T2KS-250PM	118.45
3"	3.625	T2KS-300PL	110.90	T2KS-300PM	138.50
4"	4.500	T2KS-400PL	192.70	T2KS-400PM	224.05

PL Finish – SF1

OD = 32R_a Mechanically Polished

ID = 20R_a Mechanically Polished

PM Finish – SF4

OD = 32R_a Mechanically Polished

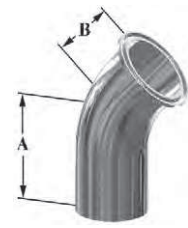
ID = 15R_a Mechanically Polished and Electropolished

Bradford™ High Purity BioPharm Fittings



45° Clamp x Weld Elbows - T2KM

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	2.250	1.000	T2KM-050PL	\$108.60	T2KM-050PM	\$126.65
3/4"	2.250	1.000	T2KM-075PL	108.60	T2KM-075PM	126.65
1"	2.250	1.125	T2KM-100PL	105.25	T2KM-100PM	123.45
1 1/2"	2.500	1.438	T2KM-150PL	105.25	T2KM-150PM	125.00
2"	3.000	1.750	T2KM-200PL	120.10	T2KM-200PM	143.05
2 1/2"	3.375	2.063	T2KM-250PL	152.95	T2KM-250PM	183.65
3"	3.625	2.380	T2KM-300PL	204.40	T2KM-300PM	237.90
4"	4.500	3.125	T2KM-400PL	276.25	T2KM-400PM	317.75



BPE Table #DT-13

45° Clamp x Clamp Elbows - T2KMP

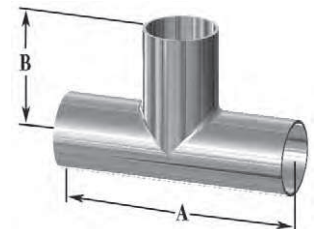
Size	Dimension	PL finish - SF1		PM finish - SF4	
	A	Part #	Price/E	Part #	Price/E
1/2"	1.000	T2KMP-050PL	\$143.10	T2KMP-050PM	\$149.60
3/4"	1.000	T2KMP-075PL	131.60	T2KMP-075PM	149.60
1"	1.125	T2KMP-100PL	128.25	T2KMP-100PM	134.95
1 1/2"	1.438	T2KMP-150PL	116.75	T2KMP-150PM	136.50
2"	1.750	T2KMP-200PL	136.50	T2KMP-200PM	159.50
2 1/2"	2.063	T2KMP-250PL	210.75	T2KMP-250PM	242.75
3"	2.380	T2KMP-300PL	266.65	T2KMP-300PM	300.20
4"	3.125	T2KMP-400PL	598.70	T2KMP-400PM	646.60



BPE Table #DT-17

Weld x Weld x Weld Tees - T7WWW

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	3.750	1.875	T7WWW-050PL	\$113.30	T7WWW-050PM	\$127.35
3/4"	4.000	2.000	T7WWW-075PL	113.30	T7WWW-075PM	127.35
1"	4.250	2.125	T7WWW-100PL	102.35	T7WWW-100PM	116.35
1 1/2"	4.750	2.375	T7WWW-150PL	102.35	T7WWW-150PM	118.05
2"	5.750	2.875	T7WWW-200PL	118.05	T7WWW-200PM	143.65
2 1/2"	6.250	3.125	T7WWW-250PL	166.35	T7WWW-250PM	196.20
3"	6.750	3.375	T7WWW-300PL	212.40	T7WWW-300PM	237.90
4"	8.250	4.125	T7WWW-400PL	308.20	T7WWW-400PM	341.70

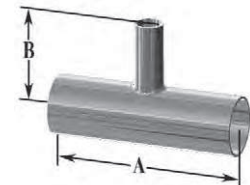


BPE Table #DT-9

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Weld x Weld x Weld Reducing Tees - T7RWWW

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
3/4" x 1/2"	4.000	2.000	T7RWWW-075050PL	\$116.60	T7RWWW-075050PM	\$172.45
1" x 1/2"	4.250	2.125	T7RWWW-100050PL	120.30	T7RWWW-100050PM	178.90
1" x 3/4"	4.250	2.125	T7RWWW-100075PL	120.30	T7RWWW-100075PM	178.90
1 1/2" x 1/2"	4.750	2.375	T7RWWW-150050PL	167.65	T7RWWW-150050PM	190.00
1 1/2" x 3/4"	4.750	2.375	T7RWWW-150075PL	120.30	T7RWWW-150075PM	180.45
1 1/2" x 1"	4.750	2.375	T7RWWW-150100PL	167.65	T7RWWW-150100PM	190.00
2" x 1/2"	5.750	2.625	T7RWWW-200050PL	217.15	T7RWWW-200050PM	239.50
2" x 3/4"	5.750	2.625	T7RWWW-200075PL	217.15	T7RWWW-200075PM	239.50
2" x 1"	5.750	2.625	T7RWWW-200100PL	217.15	T7RWWW-200100PM	239.50
2" x 1 1/2"	5.750	2.625	T7RWWW-200150PL	217.15	T7RWWW-200150PM	239.50



BPE Table #DT-10

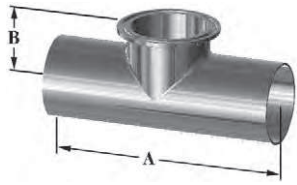
PL Finish – SF1
OD = 32R_a Mechanically Polished
ID = 20R_a Mechanically Polished

PM Finish – SF4
OD = 32R_a Mechanically Polished
ID = 15R_a Mechanically Polished and Electropolished



Bradford™ High Purity BioPharm Fittings

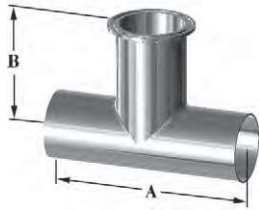
Weld x Weld x Clamp Short Outlet Tees - T7WWMS



BPE Table #DT-15

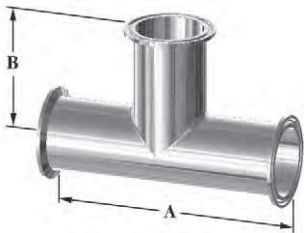
Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	3.750	1.000	T7WWMS-050PL	\$150.20	T7WWMS-050PM	\$171.75
3/4"	4.000	1.125	T7WWMS-075PL	138.15	T7WWMS-075PM	157.95
1"	4.250	1.125	T7WWMS-100PL	123.45	T7WWMS-100PM	139.90
1 1/2"	4.750	1.375	T7WWMS-150PL	123.45	T7WWMS-150PM	144.70
2"	5.750	1.625	T7WWMS-200PL	148.05	T7WWMS-200PM	172.45
2 1/2"	6.250	1.825	T7WWMS-250PL	193.25	T7WWMS-250PM	228.35
3"	6.750	2.125	T7WWMS-300PL	251.65	T7WWMS-300PM	298.60
4"	8.250	2.750	T7WWMS-400PL	555.60	T7WWMS-400PM	600.30

Weld x Weld x Clamp Tees - T7WWM



Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	3.750	2.250	T7WWM-050PL	\$138.15	T7WWM-050PM	\$157.95
3/4"	4.000	2.375	T7WWM-075PL	138.15	T7WWM-075PM	157.95
1"	4.250	2.625	T7WWM-100PL	123.45	T7WWM-100PM	139.90
1 1/2"	4.750	2.875	T7WWM-150PL	123.45	T7WWM-150PM	144.70
2"	5.750	3.375	T7WWM-200PL	148.05	T7WWM-200PM	172.45
2 1/2"	6.250	3.625	T7WWM-250PL	193.25	T7WWM-250PM	228.35
3"	6.750	3.875	T7WWM-300PL	263.45	T7WWM-300PM	298.60
4"	8.250	4.750	T7WWM-400PL	555.60	T7WWM-400PM	600.30

Clamp x Clamp x Clamp Tees - T7MP



BPE Table #DT-18

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2"	4.500	2.250	T7MP-050PL	\$169.50	T7MP-050PM	\$187.75
3/4"	4.750	2.375	T7MP-075PL	169.50	T7MP-075PM	187.75
1"	5.250	2.625	T7MP-100PL	152.50	T7MP-100PM	169.50
1 1/2"	5.750	2.875	T7MP-150PL	152.50	T7MP-150PM	174.05
2"	6.750	3.375	T7MP-200PL	172.50	T7MP-200PM	208.10
2 1/2"	7.250	3.625	T7MP-250PL	227.45	T7MP-250PM	264.10
3"	7.750	3.875	T7MP-300PL	489.00	T7MP-300PM	526.60
4"	9.500	4.750	T7MP-400PL	938.70	T7MP-400PM	995.15

PL Finish – SF1

OD = 32R_a Mechanically Polished

ID = 20R_a Mechanically Polished

PM Finish – SF4

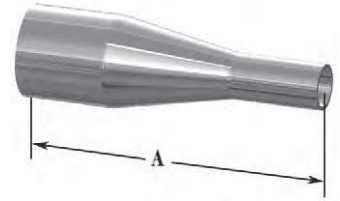
OD = 32R_a Mechanically Polished

ID = 15R_a Mechanically Polished and Electropolished

**Bradford™ High Purity BioPharm Fittings
Weld x Weld Concentric Reducers - T31W**



Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
3/4" x 1/2"	4.00	T31W-075050PL	\$109.05	T31W-075050PM	\$126.15
1" x 1/2"	4.50	T31W-100050PL	154.75	T31W-100050PM	174.05
1" x 3/4"	4.00	T31W-100075PL	125.35	T31W-100075PM	145.00
1 1/2" x 1/2"	5.50	T31W-150050PL	280.60	T31W-150050PM	301.40
1 1/2" x 3/4"	5.00	T31W-150075PL	301.75	T31W-150075PM	324.10
1 1/2" x 1"	5.00	T31W-150100PL	134.90	T31W-150100PM	199.70
2" x 1/2"	7.75	T31W-200050PL	358.75	T31W-200050PM	468.05
2" x 3/4"	7.25	T31W-200075PL	333.65	T31W-200075PM	440.65
2" x 1"	7.25	T31W-200100PL	158.35	T31W-200100PM	181.25
2" x 1 1/2"	5.25	T31W-200150PL	116.05	T31W-200150PM	176.25



BPE Table #DT-11

Clamp x Clamp Concentric Reducers - T3114MP

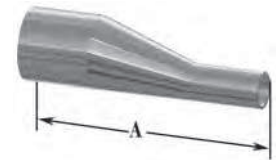
Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
3/4" x 1/2"	2.000	T3114MP075050PL	\$229.05	T3114MP075050PM	\$250.95
1" x 1/2"	2.500	T3114MP100050PL	322.95	T3114MP100050PM	349.00
1" x 3/4"	2.000	T3114MP100075PL	247.50	T3114MP100075PM	268.25
1 1/2" x 1/2"	3.500	T3114MP150050PL	385.65	T3114MP150050PM	416.70
1 1/2" x 3/4"	3.000	T3114MP150075PL	389.80	T3114MP150075PM	484.40
1 1/2" x 1"	3.000	T3114MP150100PL	277.80	T3114MP150100PM	303.20
2" x 1/2"	5.500	T3114MP200050PL	528.60	T3114MP200050PM	709.50
2" x 3/4"	5.000	T3114MP200075PL	525.00	T3114MP200075PM	564.10
2" x 1"	5.000	T3114MP200100PL	342.00	T3114MP200100PM	364.45
2" x 1 1/2"	3.000	T3114MP200150PL	235.45	T3114MP200150PM	259.90



BPE Table #DT-21

Weld x Weld Eccentric Reducers - T32W

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
3/4" x 1/2"	4.00	T32W-075050PL	\$199.60	T32W-075050PM	\$218.75
1" x 1/2"	4.50	T32W-100050PL	189.70	T32W-100050PM	207.65
1" x 3/4"	4.00	T32W-100075PL	202.80	T32W-100075PM	218.75
1 1/2" x 1/2"	5.50	T32W-150050PL	447.95	T32W-150050PM	475.70
1 1/2" x 3/4"	5.00	T32W-150075PL	411.90	T32W-150075PM	437.45
1 1/2" x 1"	5.00	T32W-150100PL	185.25	T32W-150100PM	206.95
2" x 1/2"	7.75	T32W-200050PL	434.75	T32W-200050PM	541.90
2" x 3/4"	7.25	T32W-200075PL	432.15	T32W-200075PM	539.30
2" x 1"	7.25	T32W-200100PL	197.25	T32W-200100PM	250.00
2" x 1 1/2"	5.25	T32W-200150PL	175.65	T32W-200150PM	229.90



BPE Table #DT-11

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Clamp x Clamp Eccentric Reducers - T3214MP

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
3/4" x 1/2"	2.000	T3214MP075050PL	\$288.30	T3214MP075050PM	\$309.15
1" x 1/2"	2.500	T3214MP100050PL	335.15	T3214MP100050PM	359.40
1" x 3/4"	2.000	T3214MP100075PL	337.55	T3214MP100075PM	359.95
1 1/2" x 1/2"	3.500	T3214MP150050PL	436.15	T3214MP150050PM	462.50
1 1/2" x 3/4"	3.000	T3214MP150075PL	469.00	T3214MP150075PM	497.35
1 1/2" x 1"	3.000	T3214MP150100PL	340.55	T3214MP150100PM	371.90
2" x 1/2"	5.500	T3214MP200050PL	695.50	T3214MP200050PM	847.95
2" x 3/4"	5.000	T3214MP200075PL	679.40	T3214MP200075PM	831.35
2" x 1"	5.000	T3214MP200100PL	437.60	T3214MP200100PM	466.00
2" x 1 1/2"	3.000	T3214MP200150PL	298.75	T3214MP200150PM	346.45



BPE Table #DT-21

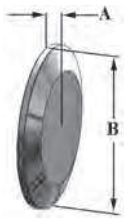
PL Finish – SF1
OD = 32R_a Mechanically Polished
ID = 20R_a Mechanically Polished

PM Finish – SF4
OD = 32R_a Mechanically Polished
ID = 15R_a Mechanically Polished and Electropolished



Bradford™ High Purity BioPharm Fittings

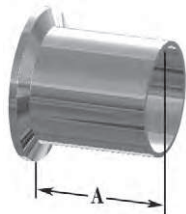
Solid End Caps - T16AMP



BPE Table #DT-31

Size	Dimensions		PL finish - SF1		PM finish - SF4	
	A	B	Part #	Price/E	Part #	Price/E
1/2" - 3/4"	0.19	1.00	T16AMP-050075PL	\$15.40	T16AMP-050075PM	\$28.40
1" - 1 1/2"	0.25	1.99	T16AMP-100150PL	13.95	T16AMP-100150PM	26.80
2"	0.25	2.52	T16AMP-200PL	18.55	T16AMP-200PM	41.20
2 1/2"	0.25	3.05	T16AMP-250PL	26.80	T16AMP-250PM	49.25
3"	0.25	3.58	T16AMP-300PL	41.70	T16AMP-300PM	65.60
4"	0.31	4.69	T16AMP-400PL	108.85	T16AMP-400PM	135.60

Auto Weld Ferrules - TL14AM7



BPE Table #DT-22

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
1/2"	1.75	TL14AM7-050PL	\$29.55	TL14AM7-050PM	\$42.10
3/4"	1.75	TL14AM7-075PL	29.55	TL14AM7-075PM	42.10
1"	1.75	TL14AM7-100PL	27.90	TL14AM7-100PM	46.60
1 1/2"	1.75	TL14AM7-150PL	27.90	TL14AM7-150PM	58.05
2"	2.25	TL14AM7-200PL	32.25	TL14AM7-200PM	74.90
2 1/2"	2.25	TL14AM7-250PL	45.75	TL14AM7-250PM	104.70
3"	2.25	TL14AM7-300PL	67.55	TL14AM7-300PM	127.55
4"	2.25	TL14AM7-400PL	151.40	TL14AM7-400PM	180.70

Weld Caps - T16W



BPE Table #DT-30

Size	Dimension A	PL finish - SF1		PM finish - SF4	
		Part #	Price/E	Part #	Price/E
1/2"	1.50	T16W-050PL	\$60.90	T16W-050PM	\$75.70
3/4"	1.50	T16W-075PL	88.20	T16W-075PM	103.65
1"	1.50	T16W-100PL	55.95	T16W-100PM	70.75
1 1/2"	1.50	T16W-150PL	64.55	T16W-150PM	102.05
2"	1.50	T16W-200PL	93.75	T16W-200PM	112.10

PL Finish – SF1

OD = 32R_a Mechanically PolishedID = 20R_a Mechanically Polished

PM Finish – SF4

OD = 32R_a Mechanically PolishedID = 15R_a Mechanically Polished and Electropolished