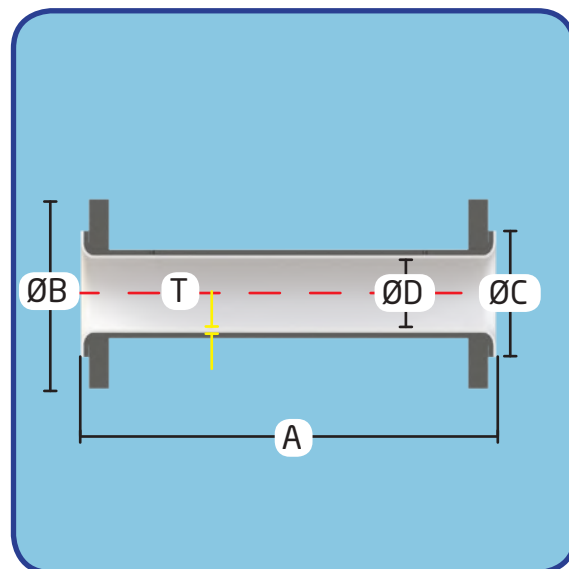
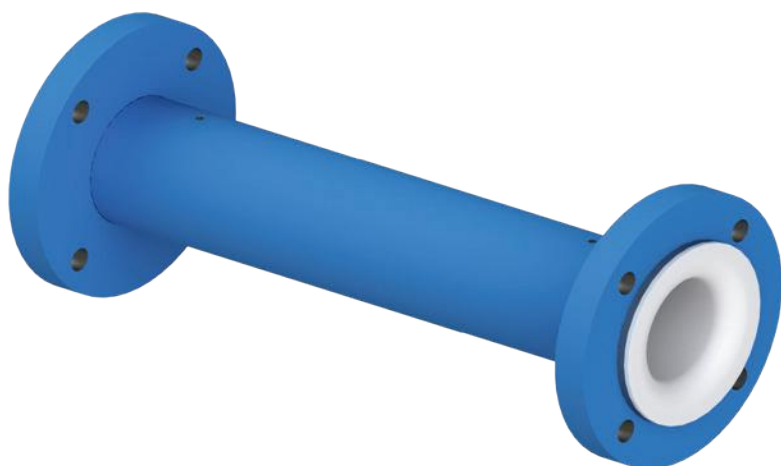


Van Stone Pipe Spool

Rotating Flanges



The process of manufacturing a pipe spool with both flanges rotating without the use of conventionally welded or screw threaded stub ends is known as the "Van Stone" system. The process essentially forms a lap collar by spinning over the

parent tube at right angles to the original tube axis.

The technical advantages are that flanges are absolutely square, flange to flange bolting is short so giving less

shank to gather dirt or become corroded and it provides a cost effective means of providing two rotating flanges for ease of installation. Van Stone pipe spools are available in sizes up to 8 inch nominal bore.

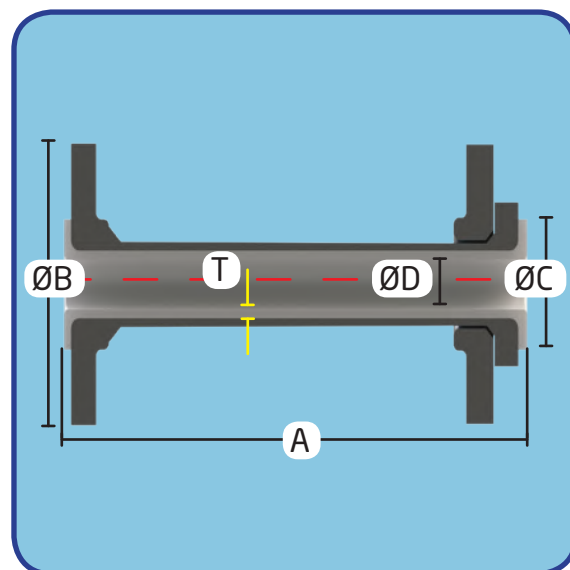
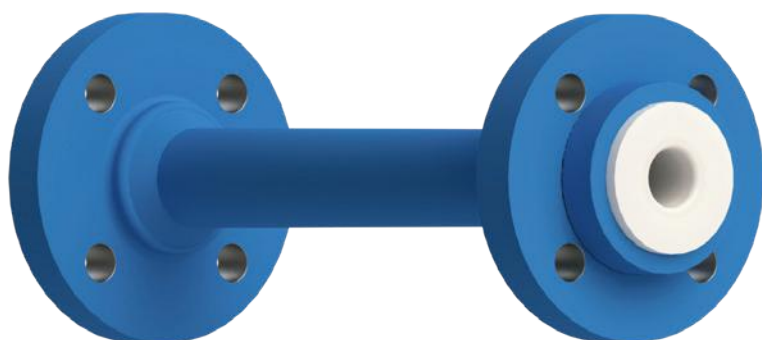
Van Stone Pipe Spool Rotating Flanges							UltraHiPerFlon®			
Nominal Bore		Length		Flange Outside Diameter	Raised Face	HiPerFlon PTFE Liner Thickness Nominal ¹	Superweight/ Heavy Duty UHP PTFE Liner Thickness Nominal ¹	Lined Bore Nominal ²	Weight	
		Minimum	Maximum						Flange Pack	Per metre
Inches	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg
½	15	250	6000	90	35	2.3	2.3	16	1.0	2.0
¾	20	250	6000	100	43	2.3	2.3	16	1.3	2.0
1	25	250	6000	110	51	3.2	4.5	20	3.0	2.8
1½	40	250	6000	125	73	3.2	4.5	34	4.0	5.0
2	50	250	6000	150	92	3.2	4.5	46	6.0	6.5
3	80	250	6000	190	127	3.2	4.8	70	10	12.3
4	100	250	6000	230	157	4.5	5.0	93	12	16.0
6	150	500	6000	280	216	5.5	6.0	143	22	32.0
8	200	500	3000	345	270	8.5	8.5	188	27	54.0

1 - Liner thicknesses are based on Virgin PTFE heavy duty liner for other materials consult the liner tables in the manual.

2 - Based on HiPerFlon and because of the method of manufacture and tolerances on steel materials these are a guide. Please consult if you require a precise dimension for instrument, mixer or other insertion or a calibrated volume.

Welded Pipe Spool

Fixed-Rotating Flanges

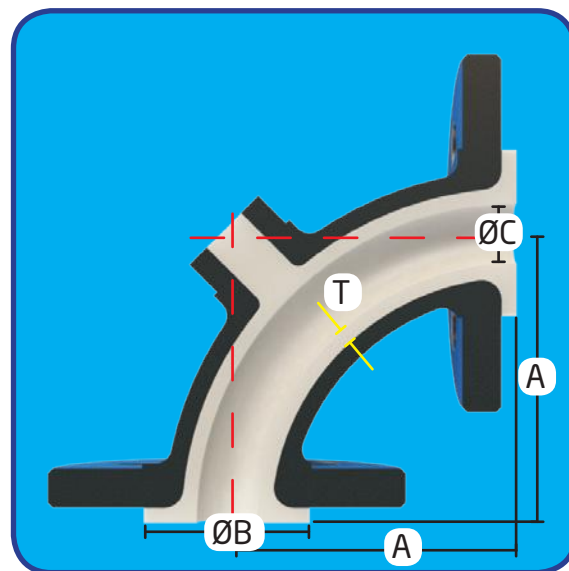


This spool construction has a welded slip on flange at one end and a welded stub end and loose backing flange at the other to provide a rotating flange. This is the most common pipe spool standard world-wide.

Welded Pipe Spool F/R							UltraHiPerFlon®			
Nominal Bore		Length		Flange Outside Diameter	Raised Face	HiPerFlon PTFE Liner Thickness Nominal¹	Superweight/ Heavy Duty UHP PTFE Liner Thickness Nominal¹	Lined Bore Nominal²	Weight	
		Minimum	Maximum						Flange Pack	
		A		Ø B	Ø C	T	T	Ø D		
Inches	mm	mm	mm	mm	mm	mm		mm	kg	kg
½	15	90	6000	90	35	2.3	2.3	16	2	2.0
¾	20	90	6000	100	43	2.3	2.3	16	2	2.0
1	25	90	6000	110	51	3.2	4.5	20	3	2.8
1½	40	95	6000	125	73	3.2	4.5	34	4	5.0
2	50	110	6000	150	92	3.2	4.5	46	6	6.5
3	80	120	6000	190	127	3.2	4.8	70	10	12.3
4	100	125	6000	230	157	4.5	5.0	93	12	16.0
6	150	140	6000	280	216	5.5	6.0	143	22	32.0
8	200	150	3000	345	270	8.5	8.5	188	27	54.0
10	250	165	3000	405	324	9.1	9.1	247	38	70.0
12	300	170	3000	485	381	10.4	10.4	286	59	86.0
14	350	190	3000	535	413	8.3	8.3	319	80	109.0

1 - Liner thicknesses are based on Virgin PTFE heavy duty liner for other materials consult the liner tables in the manual.

2 - Based on HiPerFlon and because of the method of manufacture and tolerances on steel materials these are a guide. Please consult if you require a precise dimension for instrument, mixer or other insertion or a calibrated volume.



The 90° elbow is the most popular of all pipe fittings after the spool, providing a 90° change of direction.

The standard range are dimensioned according to ASME B16.5 and have no specific radius across the size range, from around 3.5 times diameter radius with a 1 inch elbow through to a 1 times diameter radius with a 14 inch elbow. Elbows are wherever possible lined in PFA to provide the permeation and wettability benefits that PFA brings and geometrical accuracy that can be critical in some applications. PFA also brings increased vacuum performance which can be useful in larger line sizes. Non-standard elbows are lined in PTFE as are static-dissipating elbows.

Static-dissipating PFA lining is available on request.

By dint of their versatility they are used throughout piping systems although one common application is to use an elbow to create a fall in pipework utilising a rotating flange. (See next page).

For handling more viscous fluids larger radius elbows are available - typically manufactured at 5D (see the appropriate page), but elbows can be manufactured with various radii and angles up to 180° with 45° being the second most common type and 30° and 60° elbows being relatively popular. Also non-standard centreline to face dimensions and dissimilar centreline to face dimensions

on each leg can be achieved. When centreline to face dimensions are not provided for special angle elbows, those less than 45° have standard 45° centreline to face dimensions. Those greater than 45° have standard 90° centreline to face dimensions.

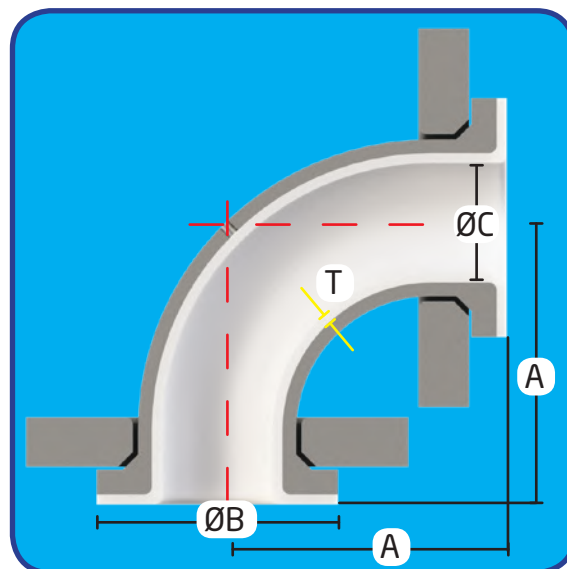
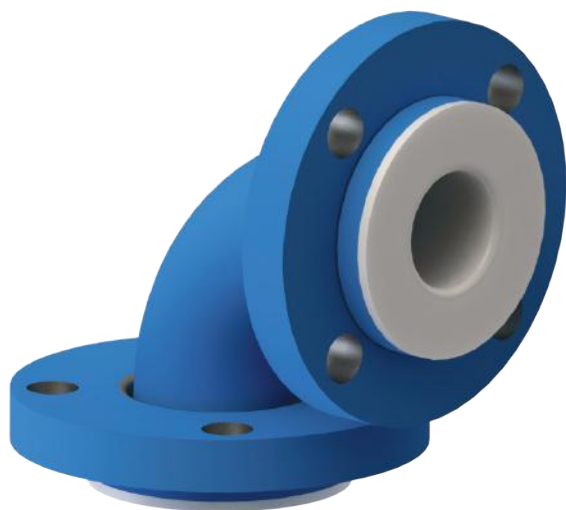
The most popular elbow sizes are supplied with a high integrity investment cast steel body and wetted parts are lined with a heavy wall PFA (construction code CP), providing superior permeation resistance and very square flanges. Less popular configurations are lined with paste extruded PTFE, flared over the flange faces in a similar manner to pipe spools.

90° Elbow								Construction Codes		
Nominal Bore		Centre Line to Face	Raised Face	Wall Thickness		Bore		Construction		Weight
				PFA Heavy Duty Liner Thickness Nominal ¹	HiPerFlon PTFE Liner Thickness Nominal ¹	PFA Liner Bore Nominal ²	PTFE Liner Bore Nominal ²			
Inches	mm	A	Ø B	T	T	Ø C	Ø C	Standard	To Order	kg
½	15	100	35	-	2.3	-	16	FT	-	1.5
¾	20	75	43	-	2.3	-	20	FT	-	1.5
1	25	89	51	4.0	3.2	20	20	CP	CT/FT	2.6
1½	40	102	73	4.5	3.2	33	34	CP	CT/FT	4.0
2	50	114	92	4.8	3.2	44	46	CP	CT/FT	6.5
3	80	140	127	6.5	3.2	66	70	CP	CT/FT	12
4	100	165	157	9.0	4.5	86	93	CP	CT/FT	17
6	150	203	216	11.0	5.5	137	43	CP	CT/FT	27
8	200	229	270	10.0	8.5	186	188	CP	CT/FT	56
10	250	279	324	10.0	9.1	237	39	CP	CT/FT	65
12	300	305	381	10.0	10.4	287	286	CP	CT/FT	115
14	350	356	413	10.5	8.3	317	319	CP	CT/FT	140

¹ 1 - Liner thicknesses are based on Virgin PTFE heavy duty liner and PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

² 2 - Nominal bores are based on Virgin PTFE heavy duty liner and schedule 40 or 30 steel pipe and PFA heavy duty liner in castings. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a calibrated volume in the product please consult us.

90° Elbow Rotating Flanges



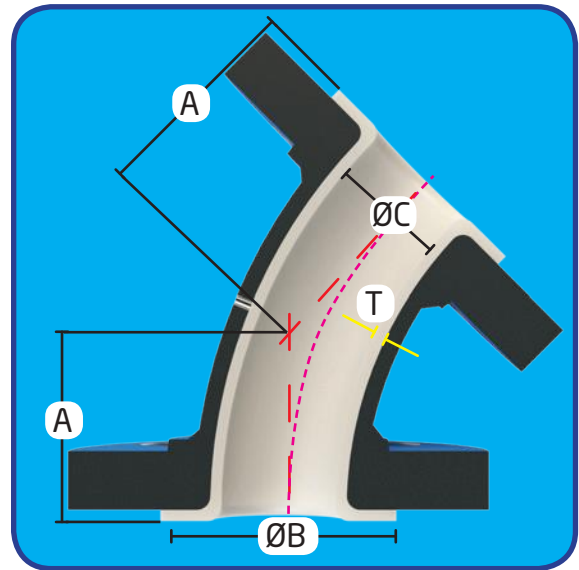
This design of elbow has two rotating flanges captured behind stub ends. This design makes installation easy and provides versatility. The elbow design is ideal as a stock item for maintenance requirements.

90° Elbow Rotating Flanges						Construction Codes		
Nominal Bore		Centre Line to Face	Raised Face	HiPerFlon PTFE Liner Thickness Nominal ¹		Code	Steelwork	Lining
						CP	Cast Steel	PFA
						CT	Cast Steel	PTFE
						FP	Fabricated Steel	PFA
						FT	Fabricated Steel	PTFE
A		Ø B	Ø C	Construction		Weight		
Inches	mm	mm	mm	mm	Standard	kg		
½	15	100	35	16	FT	2.5		
¾	20	75	43	20	FT	2.5		
1	25	89	51	20	FT	2.6		
1½	40	102	73	34	FT	4.0		
2	50	114	92	46	FT	6.5		
3	80	140	127	70	FT	12		
4	100	165	157	93	FT	17		
6	150	203	216	143	FT	27		
8	200	229	270	188	FT	56		
10	250	279	324	239	FT	65		
12	300	305	381	286	FT	115		
14	350	356	413	319	FT	140		

1 - Liner thicknesses are based on Virgin PTFE heavy duty liner.

2 - Nominal bores are based on Virgin PTFE heavy duty liner and schedule 40 or 30 steel pipe. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a calibrated volume in the product please consult us.

45° Elbow



The 45° elbow of course provides a 45° change of direction. These are generally lined in PTFE. Note that a 1 inch 45° elbow does not have through holes in the flanges, they are tapped ½ inch UNC

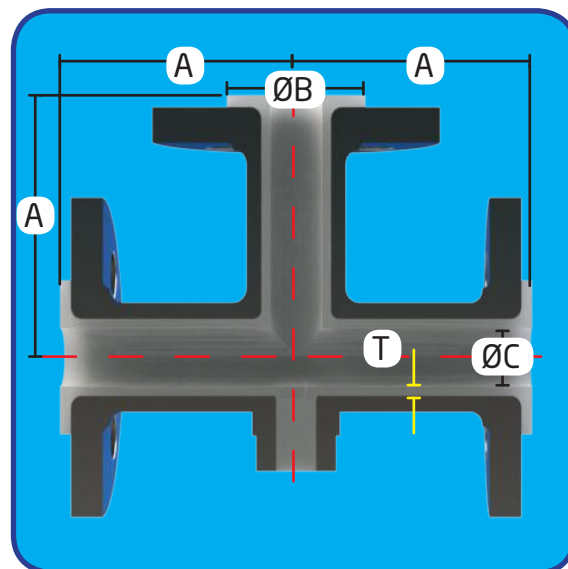
because of the clash of nuts that would occur otherwise. A metric version is available with M12 or M14 tapped holes. Similar options to those for 90° elbows are available.

45° Elbow							Construction Codes	
Nominal Bore		Centre Line to Face A	Raised Face Ø B	HiPerFlon PTFE Liner Thickness Nominal ¹ T	PTFE Liner Bore Nominal ² Ø C			
						Construction		Weight
Inches	mm	mm	mm	mm	mm	Standard	To Order	kg
½	15	44	35	2.3	16	FT	-	1.2
¾	20	44	43	2.3	20	FT	-	1.2
1	25	44	51	3.2	20	CT	FT	2.1
1½	40	57	73	3.2	34	CT	FT	3.2
2	50	64	92	3.2	46	CT	FT	5.2
3	80	76	127	3.2	70	CT	FT	10
4	100	102	157	4.5	93	FT	-	14
6	150	127	216	5.5	143	FT	-	22
8	200	140	270	8.5	188	FT	-	45
10	250	165	324	9.1	239	FT	-	52
12	300	190	381	10.4	286	FT	-	92
14	350	190	413	8.3	319	FT	-	112

Code	Steelwork	Lining
CP	Cast Steel	PFA
CT	Cast Steel	PTFE
FP	Fabricated Steel	PFA
FT	Fabricated Steel	PTFE

1 - Liner thicknesses are based on Virgin PTFE heavy duty liner. For other materials consult the liner dimension tables in this manual.

2 - Nominal bores are based on Virgin PTFE heavy duty liner and schedule 40 or 30 steel pipe. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a calibrated volume in the product please consult us, please consult us.



Equal tees provide a robust pipeline branch of the same nominal bore as the main pipeline itself. They are used for making additions or merging separate flows. Tees are manufactured to ASME B16.5 class 150 dimensions, but variations on standard dimensions are available on request. They

can be manufactured with either fixed flanges, rotating flanges or a mix. Fixed flange products are the most economical solution. The most popular tee sizes are supplied with a high integrity investment cast steel body and wetted parts lined with a heavy wall PFA, providing superior

permeation resistance.

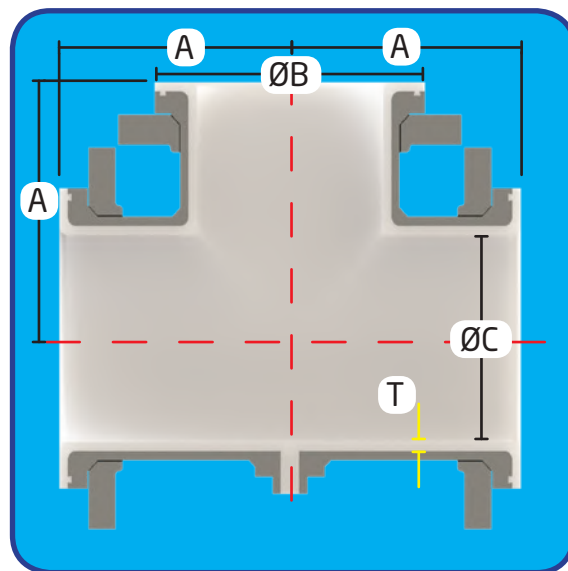
Committed to PFA as a superior lining material for the highest level of performance, CRP is the only global manufacturer producing PFA moulded fittings in up to 14 inch size.

Equal Tee								Construction Codes	
Nominal Bore		Centre Line to Face A	Raised Face Ø B	PFA Heavy Duty Liner Thickness Nominal ¹ T	PFA Liner Bore Nominal ² Ø C	Construction		Code	Lining
								Steelwork	
Inches	mm	mm	mm	mm	mm	Standard	To Order		
½	15	65	35	4.5	12	FP	-	CP	PFA
¾	20	75	43	4.5	12	FP	-	CT	PTFE
1	25	89	51	4.0	19.6	CP	FP	FP	PFA
1½	40	102	73	4.5	33	CP	FP	FT	PTFE
2	50	114	92	4.8	44	CP	FP		
3	80	140	127	6.5	66	CP	FP		
4	100	165	157	9.0	86	CP	FP		
6	150	203	216	11.0	137	CP	FP		
8	200	229	270	10.0	186	FP	-		
10	250	279	324	10.0	237	FP	-		
12	300	305	381	10.0	287	FP	-		
14	350	356	413	10.5	317	FP	-		

¹ - Liner thicknesses are based on Virgin PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

² - Nominal bores are based on schedule 40 or 30 steel pipe and PFA heavy duty liner and PFA heavy duty liner in castings. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a precise dimension for instrument, mixer or other insertion or a calibrated volume in the product please consult us.

Equal Tee Rotating Flanges



This design of tee has three rotating flanges captured behind stub ends. This design makes installation easy and

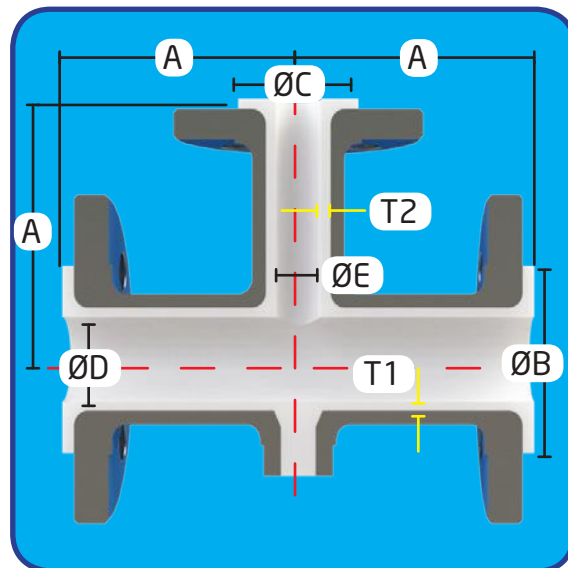
provides versatility. The tee design is ideal as a stock item for maintenance requirements.

Equal Tee Rotating Flanges							Construction Codes			
Nominal Bore		Centre Line to Face	Raised Face	PFA Heavy Duty Liner Thickness Nominal ¹	PFA Liner Bore Nominal ²	Construction	Weight	Code	Steelwork	Lining
								CP	Cast Steel	PFA
								CT	Cast Steel	PTFE
								FP	Fabricated Steel	PFA
								FT	Fabricated Steel	PTFE
Inches	mm	mm	mm	mm	mm	Standard	kg			
½	15	65	35	4.5	12	FP	2.0			
¾	20	75	43	4.5	12	FP	3.0			
1	25	89	51	4.0	19.6	FP	4.0			
1½	40	102	73	4.5	33	FP	6.5			
2	50	114	92	4.8	44	FP	10			
3	80	140	127	6.5	66	FP	19			
4	100	165	157	9.0	86	FP	27			
6	150	203	216	11.0	137	FP	45			
8	200	229	270	10.0	186	FP	68			
10	250	279	324	10.0	237	FP	90			
12	300	305	381	10.0	287	FP	185			
14	350	356	413	10.5	317	FP	200			

1 - Liner thicknesses are based on Virgin PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

2 - Nominal bores are based on Virgin PFA heavy duty liner and schedule 40 or 30 steel pipe and PFA heavy duty liner in castings. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a precise dimension for instrument, mixer or other insertion or a calibrated volume in the product please consult us.

Reducing Tee



Reducing tees have a smaller branch diameter than the main pipeline and are generally available in every nominal bore size down from the main branch. They are used for making additions or merging separate flows. Tees are manufactured to ASME B16.5 class 150 dimensions, with the branch centre-line to face dimension the same as that of the main

bore irrespective of the nominal bore size of the branch. Variations on standard dimensions are available on request. For sizes at ½ inch and ¾ inch a larger pipe is used to achieve a reasonable bore and the PFA may have a machined bore rather than moulded in situ. They can be manufactured with either fixed flanges, rotating flanges or a mix. Please advise

us if you require a specific branch bore for holding or mounting instruments or other devices. Fixed flange products are the most economical solution. The most popular tee sizes are supplied with a high integrity investment cast steel body and wetted parts lined with a heavy wall PFA, providing superior permeation resistance.

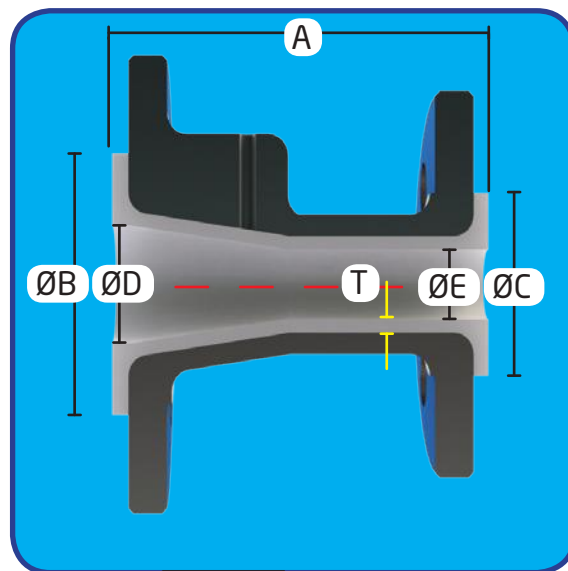
Reducing Tee											Construction Codes		
Nominal Bore		Centre Line to Face	Line Raised Face	Branch Raised Face	Line Heavy Duty PFA Liner Thickness Nominal ¹	Branch PFA Heavy Duty Liner Thickness Nominal ¹	Line PFA Liner Bore Nominal ²	Branch PFA Liner Bore Nominal ²		Code		Lining	
										CP	Cast Steel		PFA
										CT	Cast Steel		PTFE
										FP	Fabricated Steel		PFA
										FT	Fabricated Steel		PTFE
Inches		mm	A	B	Ø C	T1	T2	Ø D	Ø E	Construction		Weight	
			mm	mm	mm	mm	mm	mm	mm	Standard	To Order	kg	
¾	x ½	20 x 15	75	43	35	4.5	4.5	12	12	FP	-	2.0	
1	x ½	25 x 15	89	51	35	4.0	4.5	20	12	FP	-	2.6	
1	x ¾	25 x 20	89	51	43	4.0	4.5	20	12	FP	-	2.9	
1½	x ½	40 x 15	102	73	35	4.5	4.5	33	12	FP	-	4.2	
1½	x ¾	40 x 20	102	73	43	4.5	4.5	33	12	FP	-	4.4	
1½	x 1	40 x 25	102	73	51	4.5	4.0	33	20	CP	FP	4.7	
2	x ½	50 x 15	114	92	35	4.8	4.5	44	12	FP	-	6.3	
2	x ¾	50 x 20	114	92	43	4.8	4.5	44	12	FP	-	6.6	
2	x 1	50 x 25	114	92	51	4.8	4.0	44	20	CP	FP	6.9	
2	x 1½	50 x 40	114	92	73	4.8	4.5	44	33	CP	FP	7.6	
3	x ½	80 x 15	140	127	35	6.5	4.5	66	12	FP	-	12	
3	x ¾	80 x 20	140	127	43	6.5	4.5	66	12	FP	-	13	
3	x 1	80 x 25	140	127	51	6.5	4.0	66	20	CP	FP	13	
3	x 1½	80 x 40	140	127	73	6.5	4.5	66	33	FP	-	14	
3	x 2	80 x 50	140	127	92	6.5	4.8	66	44	CP	FP	15	
4	x ½	100 x 15	165	157	35	9.0	4.5	86	12	FP	-	18	
4	x ¾	100 x 20	165	157	43	9.0	4.5	86	12	FP	-	19	
4	x 1	100 x 25	165	157	51	9.0	4.0	86	20	CP	FP	19	
4	x 1½	100 x 40	165	157	73	9.0	4.5	86	33	FP	-	20	
4	x 2	100 x 50	165	157	92	9.0	4.8	86	44	FP	-	21	

Reducing Tee											Construction Codes		
Nominal Bore		Centre Line to Face	Line Raised Face	Branch Raised Face	Line Heavy Duty PFA Liner Thickness Nominal ¹	Branch PFA Heavy Duty Liner Thickness Nominal ¹	Line PFA Liner Bore Nominal ²	Branch PFA Liner Bore Nominal ²			Code	Steelwork	Lining
											CP	Cast Steel	PFA
Inches	mm	A	B	Ø C	T1	T2	Ø D	Ø E			Construction		Weight
											Standard	To Order	kg
4 x 3	100 x 80	165	157	127	9.0	6.5	86	66			FP	-	24
6 x ½	150 x 15	203	216	35	11.0	4.5	137	12			FP	-	31
6 x ¾	150 x 20	203	216	43	11.0	4.5	137	12			FP	-	31
6 x 1	150 x 25	203	216	51	11.0	4.0	137	20			FP	-	32
6 x 1½	150 x 40	203	216	73	11.0	4.5	137	33			FP	-	33
6 x 2	150 x 50	203	216	92	11.0	4.8	137	44			FP	-	34
6 x 3	150 x 80	203	216	127	11.0	6.5	137	66			FP	-	37
6 x 4	150 x 100	203	216	157	11.0	9.0	137	86			FP	-	40
8 x 1	200 x 25	229	270	51	10.0	4.0	186	20			FP	-	48
8 x 1½	200 x 40	229	270	73	10.0	4.5	186	33			FP	-	49
8 x 2	200 x 50	229	270	92	10.0	4.8	186	44			FP	-	50
8 x 3	200 x 80	229	270	127	10.0	6.5	186	66			FP	-	54
8 x 4	200 x 100	229	270	157	10.0	9.0	186	86			FP	-	58
8 x 6	200 x 150	229	270	216	10.0	11.0	186	137			FP	-	64
10 x 1	250 x 25	279	324	51	10.0	4.0	237	20			FP	-	72
10 x 1½	250 x 40	279	324	73	10.0	4.5	237	33			FP	-	73
10 x 2	250 x 50	279	324	92	10.0	4.8	237	44			FP	-	75
10 x 3	250 x 80	279	324	127	10.0	6.5	237	66			FP	-	79
10 x 4	250 x 100	279	324	157	10.0	9.0	237	86			FP	-	83
10 x 6	250 x 150	279	324	216	10.0	11.0	237	137			FP	-	90
10 x 8	250 x 200	279	324	270	10.0	10.0	237	186			FP	-	98
12 x 1	300 x 25	305	381	51	10.0	4.0	287	20			FP	-	105
12 x 1½	300 x 40	305	381	73	10.0	4.5	287	33			FP	-	107
12 x 2	300 x 50	305	381	92	10.0	4.8	287	44			FP	-	108
12 x 3	300 x 80	305	381	127	10.0	6.5	287	66			FP	-	113
12 x 4	300 x 100	305	381	157	10.0	9.0	287	86			FP	-	117
12 x 6	300 x 150	305	381	216	10.0	11.0	287	137			FP	-	125
12 x 8	300 x 200	305	381	270	10.0	10.0	287	186			FP	-	134
12 x 10	300 x 250	305	381	324	10.0	10.0	287	237			FP	-	145
14 x 1	350 x 25	356	413	51	10.5	4.0	317	20			FP	-	143
14 x 1½	350 x 40	356	413	73	10.5	4.5	317	33			FP	-	145
14 x 2	350 x 50	356	413	92	10.5	4.8	317	44			FP	-	146
14 x 3	350 x 80	356	413	127	10.5	6.5	317	66			FP	-	151
14 x 4	350 x 100	356	413	157	10.5	9.0	317	86			FP	-	156
14 x 6	350 x 150	356	413	216	10.5	11.0	317	137			FP	-	164
14 x 8	350 x 200	356	413	270	10.5	10.0	317	186			FP	-	173
14 x 10	350 x 250	356	413	324	10.5	10.0	317	237			FP	-	185
14 x 12	350 x 300	356	413	381	10.5	10.0	317	287			FP	-	202

1 - Liner thicknesses are based on Virgin PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

2 - Nominal bores are based on Virgin PFA heavy duty liner in castings. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a precise dimension for instrument, mixer or other insertion or a calibrated volume in the product please consult us.

Concentric Reducer



These provide for a gradual reduction in bore on the centreline of the pipeline, reducing (or growing) concentrically from

one bore size to another through one or several size reductions. They are useful for the movement of slurries, where

cavitation is present and on the discharge side of pumps.

Concentric Reducer											Construction Codes		
Nominal Bore		Face to Face A	Large NB Raised Face Ø B	Small NB Raised Face Ø C	Heavy Duty PFA Liner Thickness Nominal ¹ T	HiPerFlon PTFE Liner Thickness Nominal ¹ T	Large Bore Nominal ² Ø D	Small Bore Nominal ² Ø E			Code	Steelwork	Lining
											CP	Cast Steel	PFA
Inches	mm	mm	mm	mm	mm	mm	mm	mm	Standard	To Order	CT	Cast Steel	PTFE
¾ x ½	20 x 15	114	43	35	-	2.3	12	12	FT	-	-	-	-
1 x ½	25 x 15	114	51	35	-	3.2	20	12	FT	-	-	-	-
1 x ¾	25 x 20	114	51	43	-	3.2	20	12	FT	-	-	-	-
1½ x ¾	40 x 20	114	73	43	-	3.2	33	12	FT	-	-	-	-
1½ x 1	40 x 25	114	73	51	-	3.2	33	20	CT	FT	-	-	-
2 x 1	50 x 25	127	92	51	4.8	-	44	20	CP	FP	-	-	-
2 x 1½	50 x 40	127	92	73	4.8	3.2	44	33	CT	CP/FP/FT	-	-	-
3 x 1	80 x 25	152	127	51	6.5	-	66	20	CP	FP	-	-	-
3 x 1½	80 x 40	152	127	73	6.5	-	66	33	CP	FP	-	-	-
3 x 2	80 x 50	152	127	92	6.5	3.2	66	44	CT	CP/FP/FT	-	-	-
4 x 1	100 x 25	178	157	51	9.0	-	86	20	CP	FP	-	-	-
4 x 1½	100 x 40	178	157	73	9.0	-	86	33	CP	FP	-	-	-
4 x 2	100 x 50	178	157	92	9.0	-	86	44	CP	FP	-	-	-
4 x 3	100 x 80	178	157	127	9.0	4.5	86	66	CT	CP/FP/FT	-	-	-
6 x 2	150 x 50	229	216	92	11.0	-	137	44	CP	FP	-	-	-
6 x 3	150 x 80	229	216	127	11.0	-	137	66	CP	FP	-	-	-
6 x 4	150 x 100	229	216	157	11.0	5.5	137	86	CT	CP/FP/FT	-	-	-
8 x 3	200 x 80	279	270	127	10.0	-	186	66	FP	-	-	-	-
8 x 4	200 x 100	279	270	157	10.0	-	186	86	FP	-	-	-	-
8 x 6	200 x 150	279	270	216	-	8.5	186	137	FT	-	-	-	-
10 x 4	250 x 100	305	324	157	10.0	-	237	66	FP	-	-	-	-
10 x 6	250 x 150	305	324	216	-	9.1	237	137	FT	-	-	-	-

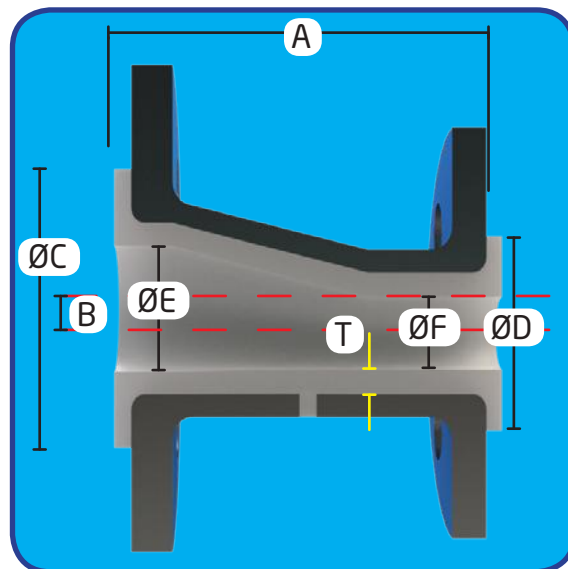
Concentric Reducer

Concentric Reducer												Construction Codes		
Nominal Bore		Face to Face	Large NB Raised Face	Small NB Raised Face	Heavy Duty PFA Liner Thickness Nominal ¹	HiPerFlon PTFE Liner Thickness Nominal ¹	Large Bore Nominal ²	Small Bore Nominal ²		Code	Steelwork	Lining		
										CP	Cast Steel	PFA		
										CT	Cast Steel	PTFE		
										FP	Fabricated Steel	PFA		
										FT	Fabricated Steel	PTFE		
										Construction		Weight		
Inches	mm	mm	mm	mm	mm	mm	mm	mm	Standard	To Order	kg			
10 x 8	250 x 200	305	324	270	-	9.1	237	186	FT	-	49			
12 x 4	300 x 100	356	381	157	10.0	-	287	66	FP	-	58			
12 x 6	300 x 150	356	381	216	10.0	-	287	137	FP	-	62			
12 x 8	300 x 200	356	381	270	-	10.4	287	186	FT	-	66			

1 - Liner thicknesses are based on PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

2 - Nominal bores are based on schedule 40 or 30 steel pipe and PFA heavy duty liner. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a precise dimension for instrument, mixer or other insertion or a calibrated volume in the product please consult us.

Eccentric Reducer



Eccentric reducers have a changing centreline for the bore, with one side remaining parallel. Eccentric reducers are used at the suction side of pumps to ensure air does not accumulate in the

pipe. The gradual accumulation of air in a concentric reducer could result in a large bubble that could eventually cause the pump to stall or cause cavitation when drawn into the pump, with the flat side

up this is avoided. Alternatively eccentric reducers can be useful with the flat side down to allow the complete draining of a pipeline.

Eccentric Reducer											Construction Codes		
Nominal Bore		Face to Face A	Centreline Offset B	Large NB Raised Face Ø C	Small NB Raised Face Ø D	Heavy Duty PFA Liner Thickness Nominal ¹ T	HiPerFlon PTFE Liner Thickness Nominal ¹ T	Large Bore Nominal ² Ø D	Small Bore Nominal ² Ø E		Code	Steelwork	Lining
											CP	Cast Steel	PFA
Inches	mm	mm	mm	mm	mm	mm	mm	mm	mm		CT	Cast Steel	PTFE
											FP	Fabricated Steel	PFA
											FT	Fabricated Steel	PTFE
											Construction		Weight
											Standard	To Order	kg
¾ x ½	20 x 15	114	3	43	35	-	2.3	12	12		FT	-	1.3
1 x ½	25 x 15	114	6	51	35	4	3.2	20	12		FP	FT	1.5
1 x ¾	25 x 20	114	3	51	43	-	3.2	20	12		FT	-	1.8
1½ x ¾	40 x 20	114	11	73	43	-	3.2	33	12		FT	-	2.3
1½ x 1	40 x 25	114	7	73	51	4.5	3.2	33	20		CP	FP/FT	2.7
2 x 1	50 x 25	127	13	92	51	4.8	-	44	20		CP		3.7
2 x 1½	50 x 40	127	6	92	73	4.8	3.2	44	33		CP	CT/FP/FT	4.2
3 x 1	80 x 25	152	28	127	51	6.5	-	66	20		CP	-	6
3 x 1½	80 x 40	152	20	127	73	6.5	-	66	33		CP	-	7
3 x 2	80 x 50	152	14	127	92	-	3.2	66	44		FT	-	8
4 x 1	100 x 25	178	40	157	51	9.0	-	86	20		FP	-	9
4 x 1½	100 x 40	178	33	157	73	9.0	-	86	33		FP	-	10
4 x 2	100 x 50	178	27	157	92	9.0	-	86	44		CP	-	11
4 x 3	100 x 80	178	13	157	127	9.0	-	86	66		CP	-	13
6 x 2	150 x 50	229	54	216	92	11.0	-	137	44		FP	-	17
6 x 3	150 x 80	229	40	216	127	11.0	-	137	66		FP	-	19
6 x 4	150 x 100	229	27	216	157	-	5.5	137	86		FT	-	20
8 x 3	200 x 80	279	65	270	127	10.0	-	186	66		FP	-	28
8 x 4	200 x 100	279	52	270	157	10.0	-	186	86		FP	-	30
8 x 6	200 x 150	279	25	270	216	-	8.5	186	137		FT	-	33
10 x 4	250 x 100	305	79	324	157	10.0	-	237	66		FP	-	40
10 x 6	250 x 150	305	52	324	216	-	9.1	237	137		FT	-	43

Eccentric Reducer											Construction Codes		
Nominal Bore		Face to Face	Centreline Offset	Large NB Raised Face	Small NB Raised Face	Heavy Duty PFA Liner Thickness Nominal ¹	HiPerFlon PTFE Liner Thickness Nominal ¹	Large Bore Nominal ²	Small Bore Nominal ²		Code	Steelwork	Lining
											CP	Cast Steel	PFA
		A	B	Ø C	Ø D	T	T	Ø D	Ø E		CT	Cast Steel	PTFE
											FP	Fabricated Steel	PFA
											FT	Fabricated Steel	PTFE
											Construction		Weight
Inches	mm	mm	mm	mm	mm	mm	mm	mm	mm	Standard	To Order		kg
10 x 8	250 x 200	305	27	324	270	-	9.1	237	186	FT	-	-	49
12 x 4	300 x 100	356	105	381	157	10.0	-	287	66	FP	-	-	58
12 x 6	300 x 150	356	78	381	216	10.0	-	287	137	FP	-	-	62
12 x 8	300 x 200	356	52	381	270	10.0	-	287	186	FP	-	-	66
12 x 10	300 x 250	356	25	381	324	-	10.4	287	237	FT	-	-	72
14 x 6	350 x 150	406	94	413	216	10.5	-	317	137	FP	-	-	81
14 x 8	350 x 200	406	68	413	270	10.5	-	317	186	FP	-	-	86
14 x 10	350 x 250	406	41	413	324	10.5	-	317	237	FP	-	-	91
14 x 12	350 x 300	406	16	413	381	-	8.3	317	287	FT	-	-	102

1 - Liner thicknesses are based on PFA heavy duty liner. For other materials consult the liner dimension tables in this manual.

2 - Nominal bores are based on schedule 40 or 30 steel pipe and PFA heavy duty liner. Because of the method of manufacture and steel tolerances this can be a guide only. For other materials and thicknesses please consult the liner dimension tables in this manual. If you require a precise dimension for instrument, mixer or other insertion or a calibrated volume in the product please consult us.