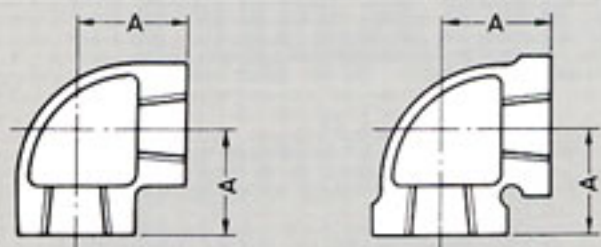


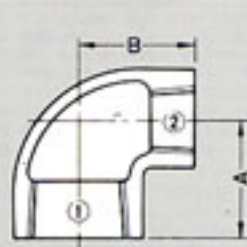


Fig 1A Elbows, Plain, Equal      Fig 2A Elbows, Banded, Equal



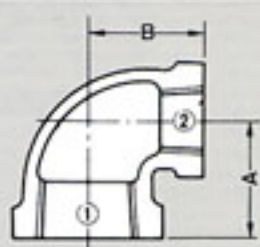
Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A	
1/8	17	
1/4	19	
3/8	23	
1/2	27	
3/4	32	
1	38	
1 1/4	46	
1 1/2	48	
2	57	
2 1/2	69	
3	78	
4	97	
5	113	
6	132	

Fig 1B Elbows, Plain, Reducing



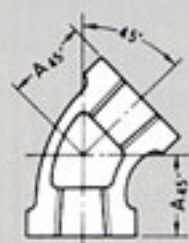
Nominal Size (1) X (2)	DISTANCE TO EACH END FROM CENTER	
	A	B
3/8 X 1/4	20	22
1/2 X 1/4	24	24
1/2 X 3/8	26	25
3/4 X 3/8	28	28
3/4 X 1/2	29	30
1 X 3/8	30	31
1 X 1/2	32	33
1 X 3/4	34	35
1 1/4 X 1/2	34	38
1 1/4 X 3/4	38	40
1 1/4 X 1	40	42
1 1/2 X 1/2	35	42
1 1/2 X 3/4	38	43
1 1/2 X 1	41	45
1 1/2 X 1 1/4	45	48
2 X 1/2	38	48
2 X 3/4	41	49
2 X 1	44	51
2 X 1 1/4	48	54
2 X 1 1/2	52	55

Fig 2B Elbows, Banded, Reducing



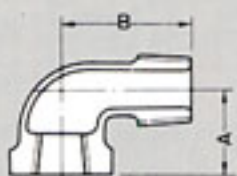
Nominal Size (1) X (2)	DISTANCE TO EACH END FROM CENTER	
	A	B
2 1/2 X 1	44	58
2 1/2 X 1 1/4	51	61
2 1/2 X 1 1/2	55	62
2 1/2 X 2	60	65
3 X 1	48	66
3 X 1 1/4	56	69
3 X 1 1/2	56	69
3 X 2	62	72
3 X 2 1/2	72	75
4 X 2	69	87
4 X 2 1/2	78	90
4 X 3	83	91
5 X 3	87	107
5 X 4	100	111
6 X 4	102	125

Fig 4 Elbows, Banded, 45°



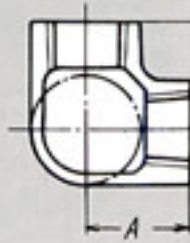
Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A45°	
1/4	17	
3/8	19	
1/2	21	
3/4	25	
1	29	
1 1/4	34	
1 1/2	37	
2	42	
2 1/2	49	
3	54	
4	65	
5	74	
6	82	

Fig 6 Street Elbows, Equal



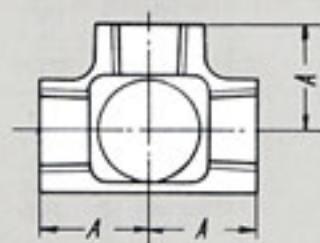
Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A	B
1/8	17	26
1/4	19	30
3/8	23	35
1/2	27	40
3/4	32	47
1	38	54
1 1/4	46	62
1 1/2	48	68
2	57	79
2 1/2	69	92
3	78	104
4	97	126

Fig 9 Side Outlet Elbows



Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A	
1/2	27	
3/4	32	
1	38	
1 1/4	46	
1 1/2	48	
2	57	

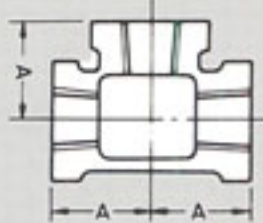
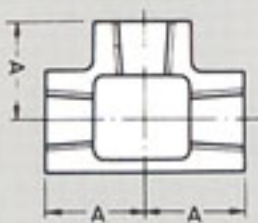
Fig 13 Side Outlet Tees



Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A	
1/2	27	
3/4	32	
1	38	
1 1/4	46	
1 1/2	48	
2	57	

Fig 10A Tees, Plain, Equal

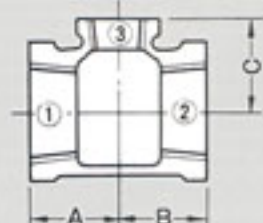
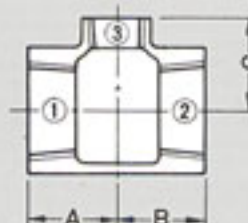
Fig 11A Tees, Banded, Equal



Nominal Size	DISTANCE TO		
	A		
1/8	17		
1/4	19		
3/8	23		
1/2	27		
3/4	32		
1	38		
1 1/4	46		
1 1/2	48		
2	57		
2 1/2	69		
3	78		
4	97		
5	113		
6	132		

Fig 10B Tees, Plain, Reducing

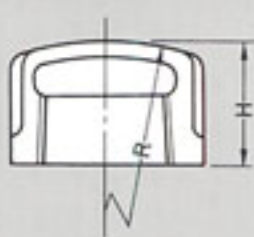
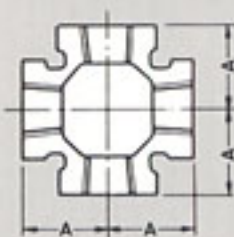
Fig 11B Tees, Banded, Reducing



Nominal Size (1)X(2)X(3)	DISTANCE TO EACH END FROM CENTER			Nominal Size	DISTANCE TO EACH END FROM CENTER			Nominal Size	DISTANCE TO EACH END FROM CENTER						
	A	B	C		A	B	C		A	B	C				
3/8X 3/8X 1/4	20	20	22	2	X2	X1 1/4	48	48	54	4	X4	X2 1/2	78	78	90
1/2X 1/2X 1/4	24	24	24	2	X2	X1 1/2	52	52	55	4	X4	X3	83	83	91
1/2X 1/2X 3/8	26	26	25	2 1/2	X2 1/2	X 1/2	41	41	57	5	X5	X2	72	72	103
3/4X 3/4X 1/4	25	25	27	2 1/2	X2 1/2	X 3/4	44	44	58	5	X5	X2 1/2	81	81	105
3/4X 3/4X 3/8	28	28	28	2 1/2	X2 1/2	X1	48	48	60	5	X5	X3	87	87	107
3/4X 3/4X 1/2	29	29	30	2 1/2	X2 1/2	X1 1/4	52	52	62	5	X5	X4	100	100	111
1 X1 X 3/8	30	30	31	2 1/2	X2 1/2	X1 1/2	55	55	62	6	X6	X2	75	75	115
1 X1 X 1/2	32	32	33	2 1/2	X2 1/2	X2	60	60	65	6	X6	X2 1/2	85	85	118
1 X1 X 3/4	34	34	35	3	X3	X 1/2	43	43	65	6	X6	X3	92	92	120
1 1/4X1 1/4X 3/8	33	33	36	3	X3	X 3/4	46	46	66	6	X6	X4	102	102	125
1 1/4X1 1/4X 1/2	34	34	38	3	X3	X1	50	50	68	6	X6	X5	116	116	128
1 1/4X1 1/4X 3/4	38	38	40	3	X3	X1 1/4	55	55	70						
1 1/4X1 1/4X1	40	40	42	3	X3	X1 1/2	58	58	72						
1 1/2X1 1/2X 1/2	35	35	42	3	X3	X2	62	62	72						
1 1/2X1 1/2X 3/4	38	38	43	3	X3	X2 1/2	72	72	75						
1 1/2X1 1/2X1	41	41	45	4	X4	X 3/4	54	54	80						
1 1/2X1 1/2X1 1/4	45	45	48	4	X4	X1	57	57	83						
2 X2 X 1/2	38	38	48	4	X4	X1 1/4	61	61	86						
2 X2 X 3/4	41	41	49	4	X4	X1 1/2	63	63	86						
2 X2 X1	44	44	51	4	X4	X2	69	69	87						

Fig 16 Crosses, Banded, Equal

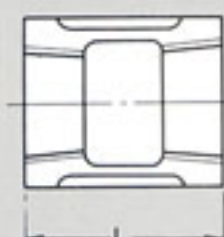
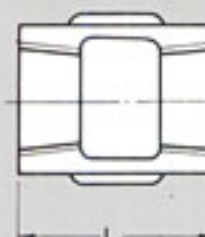
Fig 18 Caps, Banded



Nominal Size	DISTANCE TO EACH END FROM CENTER		Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A			H	R
1/4	19		1/4	15	50
3/8	23		3/8	17	62
1/2	27		1/2	20	78
3/4	32		3/4	24	95
1	38		1	28	125
1 1/4	46		1 1/4	30	150
1 1/2	48		1 1/2	32	170
2	57		2	36	215
2 1/2	69		2 1/2	42	270
3	78		3	45	310
4	97		4	55	405
5	113		5	58	495
6	132		6	65	580

Fig 19 Sockets, Plain, with Ribs

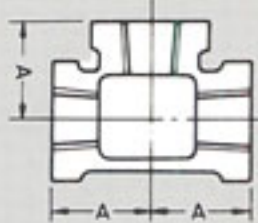
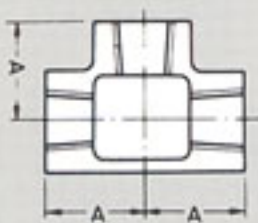
Fig 21 Sockets, Banded, with Ribs



Nominal Size	L
1/8	22
1/4	25
3/8	30
1/2	35
3/4	40
1	45
1 1/4	50
1 1/2	55
2	60
2 1/2	70
3	75
4	85
5	95
6	105

Fig 10A Tees, Plain, Equal

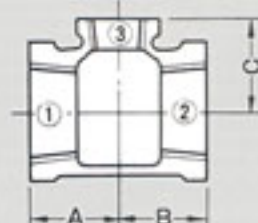
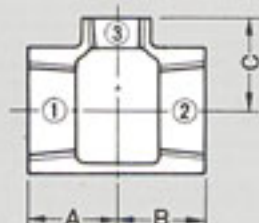
Fig 11A Tees, Banded, Equal



Nominal Size	DISTANCE TO		
	A		
1/8	17		
1/4	19		
3/8	23		
1/2	27		
3/4	32		
1	38		
1 1/4	46		
1 1/2	48		
2	57		
2 1/2	69		
3	78		
4	97		
5	113		
6	132		

Fig 10B Tees, Plain, Reducing

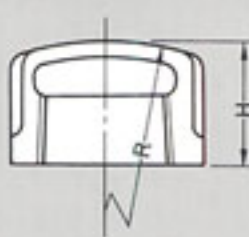
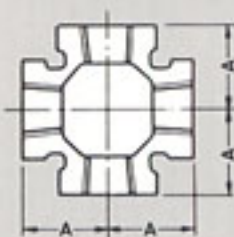
Fig 11B Tees, Banded, Reducing



Nominal Size (1)X(2)X(3)	DISTANCE TO EACH END FROM CENTER			Nominal Size	DISTANCE TO EACH END FROM CENTER			Nominal Size	DISTANCE TO EACH END FROM CENTER						
	A	B	C		A	B	C		A	B	C				
3/8X 3/8X 1/4	20	20	22	2	X2	X1 1/4	48	48	54	4	X4	X2 1/2	78	78	90
1/2X 1/2X 1/4	24	24	24	2	X2	X1 1/2	52	52	55	4	X4	X3	83	83	91
1/2X 1/2X 3/8	26	26	25	2 1/2	X2 1/2	X 1/2	41	41	57	5	X5	X2	72	72	103
3/4X 3/4X 1/4	25	25	27	2 1/2	X2 1/2	X 3/4	44	44	58	5	X5	X2 1/2	81	81	105
3/4X 3/4X 3/8	28	28	28	2 1/2	X2 1/2	X1	48	48	60	5	X5	X3	87	87	107
3/4X 3/4X 1/2	29	29	30	2 1/2	X2 1/2	X1 1/4	52	52	62	5	X5	X4	100	100	111
1 X1 X 3/8	30	30	31	2 1/2	X2 1/2	X1 1/2	55	55	62	6	X6	X2	75	75	115
1 X1 X 1/2	32	32	33	2 1/2	X2 1/2	X2	60	60	65	6	X6	X2 1/2	85	85	118
1 X1 X 3/4	34	34	35	3	X3	X 1/2	43	43	65	6	X6	X3	92	92	120
1 1/4X1 1/4X 3/8	33	33	36	3	X3	X 3/4	46	46	66	6	X6	X4	102	102	125
1 1/4X1 1/4X 1/2	34	34	38	3	X3	X1	50	50	68	6	X6	X5	116	116	128
1 1/4X1 1/4X 3/4	38	38	40	3	X3	X1 1/4	55	55	70						
1 1/4X1 1/4X1	40	40	42	3	X3	X1 1/2	58	58	72						
1 1/2X1 1/2X 1/2	35	35	42	3	X3	X2	62	62	72						
1 1/2X1 1/2X 3/4	38	38	43	3	X3	X2 1/2	72	72	75						
1 1/2X1 1/2X1	41	41	45	4	X4	X 3/4	54	54	80						
1 1/2X1 1/2X1 1/4	45	45	48	4	X4	X1	57	57	83						
2 X2 X 1/2	38	38	48	4	X4	X1 1/4	61	61	86						
2 X2 X 3/4	41	41	49	4	X4	X1 1/2	63	63	86						
2 X2 X1	44	44	51	4	X4	X2	69	69	87						

Fig 16 Crosses, Banded, Equal

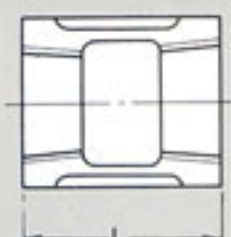
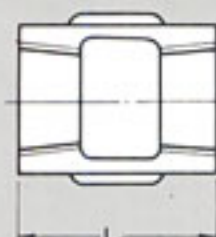
Fig 18 Caps, Banded



Nominal Size	DISTANCE TO EACH END FROM CENTER		Nominal Size	DISTANCE TO EACH END FROM CENTER	
	A			H	R
1/4	19		1/4	15	50
3/8	23		3/8	17	62
1/2	27		1/2	20	78
3/4	32		3/4	24	95
1	38		1	28	125
1 1/4	46		1 1/4	30	150
1 1/2	48		1 1/2	32	170
2	57		2	36	215
2 1/2	69		2 1/2	42	270
3	78		3	45	310
4	97		4	55	405
5	113		5	58	495
6	132		6	65	580

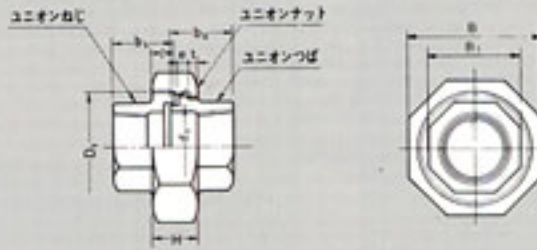
Fig 19 Sockets, Plain, with Ribs

Fig 21 Sockets, Banded, with Ribs



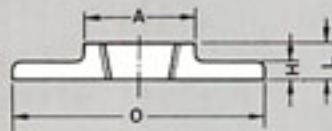
Nominal Size	L
1/8	22
1/4	25
3/8	30
1/2	35
3/4	40
1	45
1 1/4	50
1 1/2	55
2	60
2 1/2	70
3	75
4	85
5	95
6	105

Fig 34A Unions, Standard, Flat Seat, without, Gasket



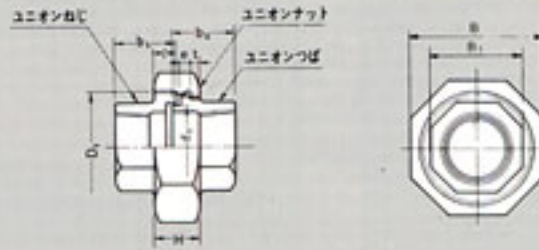
Nominal Size						
	D1	l	b1	e	b2	d1
1/4	M 26X1.5	7	17	2.5	18	16.5
3/8	M 31X2.	8	19	3	20.5	20
1/2	M 35X2	9	21	3	21.5	24
3/4	M 42X2	9.5	24.5	3.5	26	30
1	M 51X2	10	27	4	29	38
1 1/4	M 60X2	11	30	4.5	32	46
1 1/2	M 68X2	12	33	5	35.5	53
2	M 82X2	13.5	37	5.5	39.5	65
2 1/2	M100X2	15	42	6	45.5	81
3	M115X2	17	47	6.5	50	95
4	M145X2	21	58	7.5	60.5	121

Fig 26 Round Flanges, Light Pattern, with out Bolt Hole



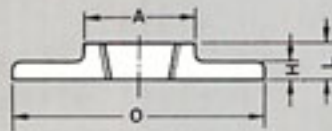
Nominal Size	A	O	L	H
1/2	27	95	13	6
3/4	34	102	15	6
1	41	114	17	6
1 1/4	50	120	19	7
1 1/2	56	133	20	7
2	69	152	22	9
2 1/2	86	165	25	9
3	99	184	26	10
4	127	216	31	10
5	154	254	32	13
6	182	280	35	13

Fig 34A Unions, Standard, Flat Seat, without, Gasket



Nominal Size						
	D1	l	b1	e	b2	d1
1/4	M 26X1.5	7	17	2.5	18	16.5
3/8	M 31X2.	8	19	3	20.5	20
1/2	M 35X2	9	21	3	21.5	24
3/4	M 42X2	9.5	24.5	3.5	26	30
1	M 51X2	10	27	4	29	38
1 1/4	M 60X2	11	30	4.5	32	46
1 1/2	M 68X2	12	33	5	35.5	53
2	M 82X2	13.5	37	5.5	39.5	65
2 1/2	M100X2	15	42	6	45.5	81
3	M115X2	17	47	6.5	50	95
4	M145X2	21	58	7.5	60.5	121

Fig 26 Round Flanges, Light Pattern, with out Bolt Hole



Nominal Size	A	O	L	H
1/2	27	95	13	6
3/4	34	102	15	6
1	41	114	17	6
1 1/4	50	120	19	7
1 1/2	56	133	20	7
2	69	152	22	9
2 1/2	86	165	25	9
3	99	184	26	10
4	127	216	31	10
5	154	254	32	13
6	182	280	35	13

