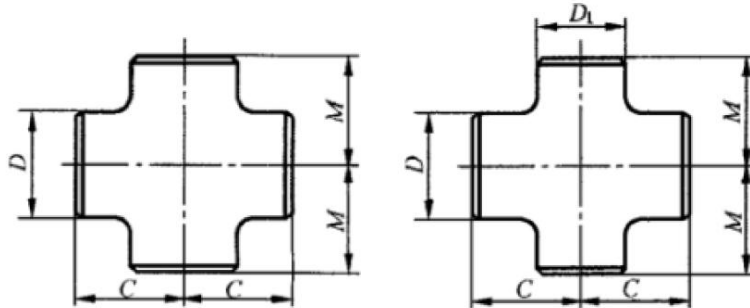


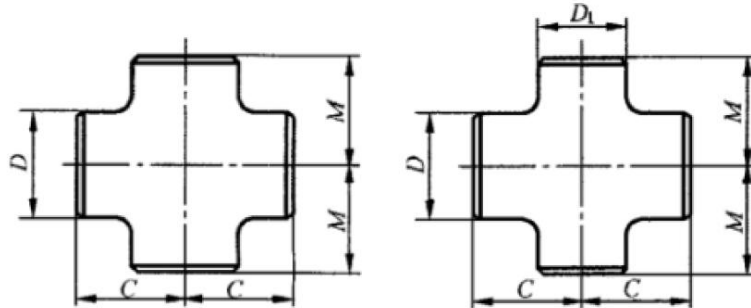
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
1/2 x 1/2	21.3	21.3	25.4	25.4
1/2 x 3/8	21.3	17.1	25.4	25.4
1/2 x 1/4	21.3	13.7	25.4	25.4
3/4 x 3/4	26.7	26.7	28.4	28.4
3/4 x 1/2	26.7	21.3	28.4	28.4
3/4 x 3/8	26.7	17.1	28.4	28.4
1 x 1	33.4	33.4	38.1	38.1
1 x 3/4	33.4	26.7	38.1	38.1
1 x 1/2	33.4	21.3	38.1	38.1
1-1/4 x 1-1/4	42.2	42.2	47.8	47.8
1-1/4 x 1	42.2	33.4	47.8	47.8
1-1/4 x 3/4	42.2	26.7	47.8	47.8
1-1/4 x 1/2	42.2	21.3	47.8	47.8
1-1/2 x 1-1/2	48.3	48.3	57.2	57.2
1-1/2 x 1-1/4	48.3	42.2	57.2	57.2
1-1/2 x 1	48.3	33.4	57.2	57.2
1-1/2 x 3/4	48.3	26.7	57.2	57.2
1-1/2 x 1/2	48.3	21.3	57.2	57.2
2 x 2	60.3	60.3	63.5	63.5
2 x 1-1/2	60.3	48.3	60.5	60.5
2 x 1-1/4	60.3	42.2	57.2	57.2
2 x 1	60.3	33.4	50.8	50.8
2 x 3/4	60.3	26.7	44.4	44.4
2 x 1/2	60.3	21.3		
2-1/2 x 2-1/2	73	73	76.2	76.2

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
2-1/2 x 2	73	60.3	69.8	69.8
2-1/2 x 1-1/2	73	48.3	66.5	66.5
2-1/2 x 1-1/4	73	42.2	63.5	63.5
2-1/2 x 1	73	33.4	57.2	57.2
3 x 3	88.9	88.9	85.9	85.9
3 x 2-1/2	88.9	73	82.6	82.6
3 x 2	88.9	60.3	76.2	76.2
3 x 1-1/2	88.9	48.3	73.2	73.2
3 x 1-1/4	88.9	42.2	69.8	69.8
3 x 1	88.9			
3-1/2 x 3-1/2	101.6	101.6	95.2	95.2
3-1/2 x 3	101.6	88.9	91.9	91.9
3-1/2 x 2-1/2	101.6	73	88.9	88.9
3-1/2 x 2	101.6	60.3	82.6	82.6
3-1/2 x 1-1/2	101.6	48.3	79.2	79.2
4 x 4	114.3	114.3	104.6	104.6
4 x 3-1/2	114.3	101.6	101.6	101.6
4 x 3	114.3	88.9	98.6	98.6
4 x 2-1/2	114.3	73	95.2	95.2
4 x 2	114.3	60.3	88.9	88.9
4 x 1-1/2	114.3	48.3	85.9	85.9
4 x 1-1/4	114.3	42.2	42.2	42.2
4 x 1	114.3		33.5	
5 x 5	141.3	141.3	124	124
5 x 4	141.3	114.3	117.3	117.3

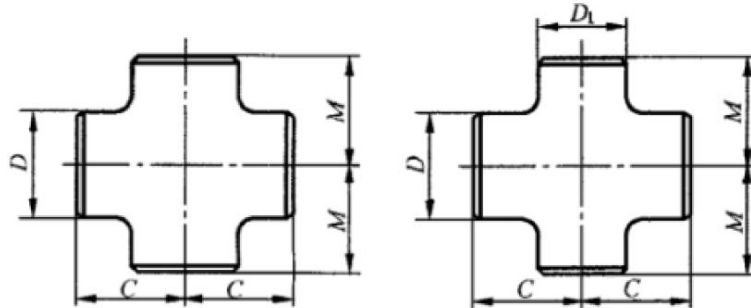
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
5 x 3-1/2	141.3	101.6	114.3	114.3
5 x 3	141.3	88.9	111.3	111.3
5 x 2-1/2	141.3	73	108	108
5 x 2	141.3	60.3	104.6	104.6
5 x 1-1/2*	141.3	48.3	48.3	48.3
6 x 6	168.3	168.3	142.7	142.7
6 x 5	168.3	141.3	136.7	136.7
6 x 4	168.3	114.3	130	130
6 x 3-1/2	168.3	101.6	127	127
6 x 3	168.3	88.9	124	124
6 x 2-1/2	168.3	73	120.6	120.6
6 x 2*	168.3	60.3	60.3	60.3
8 x 8	219.1	219.1	177.8	177.8
8 x 6	219.1	168.3	168.1	168.1
8 x 5	219.1	141.3	162.1	162.1
8 x 4	219.1	114.3	155.4	155.4
8 x 3-1/2	219.1	101.6	152.4	152.4
8 x 3	219.1			
10 x 10	273.1	273.1	215.9	215.9
10 x 8	273.1	219.1	203.2	203.2
10 x 6	273.1	168.3	193.5	193.5
10 x 5	273.1	141.3	190.5	190.5
10 x 4	273.1	114.3	184.2	184.2
12 x 12	323.9	323.9	254	254
12 x 10	323.9	273.1	241.3	241.3

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
12 x 8	323.9	219.1	228.6	228.6
12 x 6	323.9	168.3	218.9	218.9
12 x 5	323.9	141.3	215.9	215.9
14 x 14	355.6	355.6	279.4	279.4
14 x 12	355.6	323.9	269.7	269.7
14 x 10	355.6	273.1	257	257
14 x 8	355.6	219.1	247.6	247.6
14 x 6	355.6	168.3	238.3	238.3
16 x 16	406.4	406.4	304.8	304.8
16 x 14	406.4	355.6	304.8	304.8
16 x 12	406.4	323.9	295.1	295.1
16 x 10	406.4	273.1	282.4	282.4
16 x 8	406.4	219.1	373	373
16 x 6	406.4	168.3	263.7	263.7
18 x 18	457.2	457.2	342.9	342.9
18 x 16	457.2	406.4	330.2	330.2
18 x 14	457.2	355.6	330.2	330.2
18 x 12	457.2	323.9	320.5	320.5
18 x 10	457.2	273.1	307.8	307.8
18 x 8	457.2	219.1	298.4	298.4
20 x 20	508	508	381	381
20 x 18	508	457.2	369.3	369.3
20 x 16	508	406.4	355.6	355.6
20 x 14	508	355.6	355.6	355.6
20 x 12	508	323.9	345.9	345.9

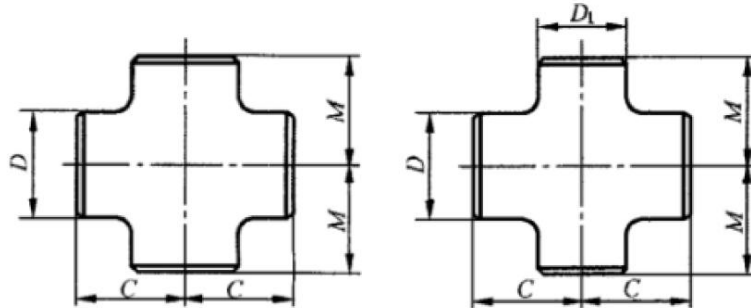
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
20 x 10	508	273.1	333.2	333.2
20 x 8	508	219.1	323.8	323.8
22 x 22	558.8	558.8	419.1	419.1
22 x 20	558.8	508	406.4	406.4
22 x 18	558.8	457.2	393.7	393.7
22 x 16	558.8	406.4	381	381
22 x 14	558.8	355.6	381	381
22 x 12	558.8	323.9	371.3	371.3
22 x 10	558.8	273.1	358.6	358.6
24 x 24	609.6	609.6	431.8	431.8
24 x 22	609.6	558.8	431.8	431.8
24 x 20	609.6	508	431.8	431.8
24 x 18	609.6	457.2	419.1	419.1
24 x 16	609.6	406.4	406.4	406.4
24 x 14	609.6	355.6	406.4	406.4
24 x 12	609.6	323.9	396.7	396.7
24 x 10	609.6	273.1	384	384
26 x 26	660.4	660.4	495.3	495.3
26 x 24	660.4	609.6	482.6	482.6
26 x 22	660.4	558.8	469.9	469.9
26 x 20	660.4	508	457.2	457.2
26 x 18	660.4	457.2	444.5	444.5
26 x 16	660.4	406.4	431.8	431.8
26 x 14	660.4	355.6	431.8	431.8
26 x 12	660.4	323.9	422.1	422.1

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
28 x 28	711.2	711.2	520.7	520.7
28 x 26	711.2	660.4	520.7	520.7
28 x 24	711.2	609.6	508	508
28 x 22	711.2	558.8	495.3	495.3
28 x 20	711.2	508	482.6	482.6
28 x 18	711.2	457.2	469.9	469.9
28 x 16	711.2	406.4	457.2	457.2
28 x 14	711.2	355.6	457.2	457.2
28 x 12	711.2	323.9	447.5	447.5
30 x 30	762	762	558.8	558.8
30 x 28	762	711.2	546.1	546.1
30 x 26	762	660.4	546.1	546.1
30 x 24	762	609.6	533.4	533.4
30 x 22	762	558.8	520.7	520.7
30 x 20	762	508	508	508
30 x 18	762	457.2	495.3	495.3
30 x 16	762	406.4	482.6	482.6
30 x 14	762	355.6	482.6	482.6
30 x 12	762	323.9	472.6	472.6
30 x 10	762	273.1	460.2	460.2
32 x 32	812.8	812.8	596.9	596.9
32 x 30	812.8	762	584.2	584.2
32 x 28	812.8	711.2	571.5	571.5
32 x 26	812.8	660.4	571.5	571.5
32 x 24	812.8	609.6	558.8	558.8

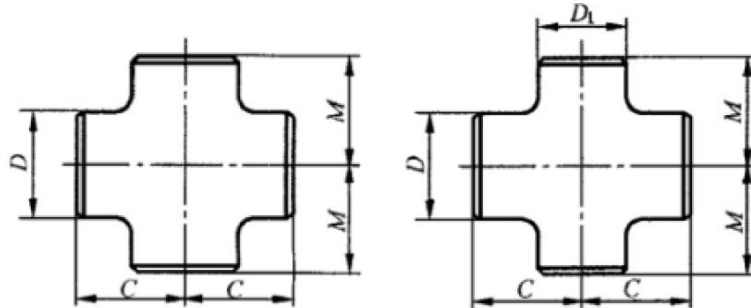
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
32 x 22	812.8	558.8	546.1	546.1
32 x 20	812.8	508	533.4	533.4
32 x 18	812.8	457.2	520.7	520.7
32 x 16	812.8	406.4	508	508
32 x 14	812.8	355.6	508	508
34 x 34	863.6	863.6	635	635
34 x 32	863.6	812.8	622.3	622.3
34 x 30	863.6	762	609.6	609.6
34 x 28	863.6	711.2	596.9	596.9
34 x 26	863.6	660.4	596.9	596.9
34 x 24	863.6	609.6	584.2	584.2
34 x 22	863.6	558.8	571.5	571.5
34 x 20	863.6	508	558.8	558.8
34 x 18	863.6	457.2	546.1	546.1
34 x 16	863.6	406.4	533.4	533.4
36 x 36	914.4	914.4	673.1	673.1
36 x 34	914.4	863.6	660.4	660.4
36 x 32	914.4	812.8	647.7	647.7
36 x 30	914.4	762	635	635
36 x 28	914.4	711.2	622.3	622.3
36 x 26	914.4	660.4	622.3	622.3
36 x 24	914.4	609.6	609.6	609.6
36 x 22	914.4	558.8	596.9	596.9
36 x 20	914.4	508	584.2	584.2
36 x 18	914.4	457.2	571.5	571.5

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
36 x 16	914.4	406.4	558.8	558.8
38 x 38	965.2	965.2	711.2	711.2
38 x 36	965.2	914.4	711.2	711.2
38 x 34	965.2	863.6	698.5	698.5
38 x 32	965.2	812.8	685.8	685.8
38 x 30	965.2	762	673.1	673.1
38 x 28	965.2	711.2	647.7	647.7
38 x 26	965.2	660.4	647.7	647.7
38 x 24	965.2	609.6	635	635
38 x 22	965.2	558.8	622.3	622.3
38 x 20	965.2	508	609.6	609.6
38 x 18	965.2	457.2	596.9	596.9
40 x 40	1016	1016	749.3	749.3
40 x 38	1016	965.2	749.3	749.3
40 x 36	1016	914.4	736.6	736.6
40 x 34	1016	863.6	723.9	723.9
40 x 32	1016	812.8	711.2	711.2
40 x 30	1016	762	698.5	698.5
40 x 28	1016	711.2	673.1	673.1
40 x 26	1016	660.4	673.1	673.1
40 x 24	1016	609.6	660.4	660.4
40 x 22	1016	558.8	647.7	647.7
40 x 20	1016	508	635	635
40 x 18	1016	457.2	622.3	622.3
42 x 42	1066.8	1066.8	762	762

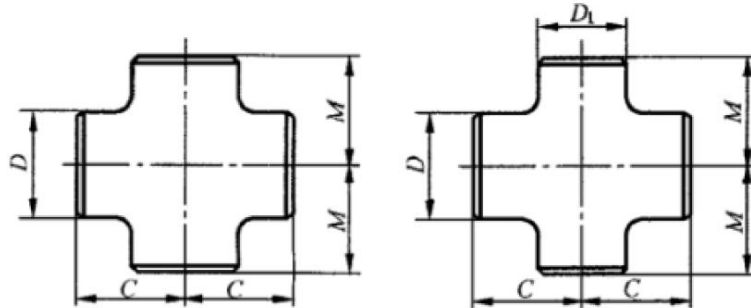
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
42 x 40	1066.8	1016	711.2	711.2
42 x 38	1066.8	965.2	711.2	711.2
42 x 36	1066.8	914.4	711.2	711.2
42 x 34	1066.8	863.6	711.2	711.2
42 x 32	1066.8	812.8	711.2	711.2
42 x 30	1066.8	762	711.2	711.2
42 x 28	1066.8	711.2	762	698.5
42 x 26	1066.8	660.4	698.5	698.5
42 x 24	1066.8	609.6	660.4	660.4
42 x 22	1066.8	558.8	660.4	660.4
42 x 20	1066.8	508	660.4	660.4
42 x 18	1066.8	457.2	647.7	647.7
42 x 16	1066.8	406.4	635	635
44 x 44	1117.6	1117.6	812.8	762
44 x 42	1117.6	1066.8	762	762
44 x 40	1117.6	1016	749.3	749.3
44 x 38	1117.6	965.2	736.6	736.6
44 x 36	1117.6	914.4	723.9	723.9
44 x 34	1117.6	863.6	723.9	723.9
44 x 32	1117.6	812.8	711.2	711.2
44 x 30	1117.6	762	711.2	711.2
44 x 28	1117.6	711.2	698.5	698.5
44 x 26	1117.6	660.4	698.5	698.5
44 x 24	1117.6	609.6	698.5	698.5
44 x 22	1117.6	558.8	685.8	685.8

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
44 x 20	1117.6	508	685.8	685.8
46 x 46	1168.4	1168.4	850.9	800.1
46 x 44	1168.4	1117.6	800.1	800.1
46 x 42	1168.4	1066.8	787.4	787.4
46 x 40	1168.4	1016	774.7	774.7
46 x 38	1168.4	965.2	762	762
46 x 36	1168.4	914.4	762	762
46 x 34	1168.4	863.6	749.3	749.3
46 x 32	1168.4	812.8	749.3	749.3
46 x 30	1168.4	762	736.6	736.6
46 x 28	1168.4	711.2	736.6	736.6
46 x 26	1168.4	660.4	736.6	736.6
46 x 24	1168.4	609.6	723.9	723.9
46 x 20	1168.4	508	723.9	723.9
48 x 48	1219.2	1219.2	889	838.2
48 x 46	1219.2	1168.4	838.2	838.2
48 x 44	1219.2	1117.6	838.2	838.2
48 x 42	1219.2	1066.8	812.8	812.8
48 x 40	1219.2	1016	812.8	812.8
48 x 38	1219.2	965.2	812.8	812.8
48 x 36	1219.2	914.4	787.4	787.4
48 x 34	1219.2	863.6	787.4	787.4
48 x 32	1219.2	812.8	889	787.4
48 x 30	1219.2	762	762	762
48 x 28	1219.2	711.2	762	762

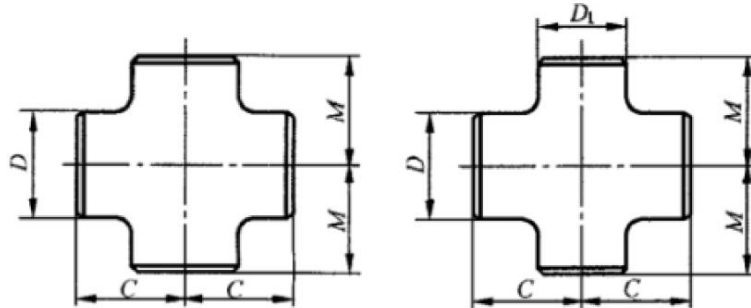
## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
48 x 26	1219.2	660.4	762	762
48 x 24	1219.2	609.6	736.6	736.6
48 x 22	1219.2	558.8	736.6	736.6
52 x 52	1320.8	1320.8	965.2	914.4
52 x 48	1320.8	1219.2	863.6	863.6
52 x 44	1320.8	1117.6	812.8	812.8
52 x 40	1320.8	1016	762	762
54 x 54	1371.6	1371.6	1003.3	952.5
54 x 52	1371.6	1320.8	914.4	914.4
54 x 48	1371.6	1219.2	863.6	863.6
54 x 44	1371.6	1117.6	863.6	863.6
54 x 40	1371.6	1016	812.8	812.8
54 x 28	1371.6	711.2	787.4	787.4
54 x 20	1371.6	508	787.4	787.4
56 x 56	1422.4	1422.4	1041.4	965.2
56 x 52	1422.4	1320.8	914.4	914.4
56 x 48	1422.4	1219.2	863.6	863.6
56 x 44	1422.4	1117.6	812.8	812.8
56 x 40	1422.4	1016	812.8	812.8
56 x 28	1422.4	711.2	812.8	812.8
56 x 20	1422.4	508	812.8	812.8
60 x 60	1524	1524	1117.6	1016
60 x 56	1524	1422.4	965.2	965.2
60 x 52	1524	1320.8	914.4	914.4
60 x 48	1524	1219.2	863.6	863.6

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
60 x 40	1524	1016	863.6	863.6
60 x 28	1524	711.2	863.6	863.6
60 x 20	1524	508	863.6	863.6
64 x 64	1626	1626	1194	1092
64 x 56	1626	1422	1524	1067
64 x 52	1626	1321	1016	965
64 x 48	1626	1219	914	914
66 x 66	1676.4	1676.4	1219.2	1066.8
68 x 68	1727	1727	1270	1168
68 x 64	1727	1626	1143	1143
68 x 60	1727	1524	1118	1118
68 x 56	1727	1422	1067	1067
68 x 52	1727	1321	1016	1016
68 x 48	1727	1219	965	965
72 x 72	1829	1829	1320	1245
72 x 68	1829	1727	1219	1219
72 x 64	1829	1626	1194	1194
72 x 60	1829	1524	1168	1168
72 x 56	1829	1422	1320	1118
72 x 52	1829	1321	1067	1067
72 x 48	1829	1219	1016	1016
76 x 76	1930	1930	1422	1320
76 x 72	1930	1829	1295	1295
76 x 68	1930	1727	1270	1270
76 x 64	1930	1626	1245	1245

## Equal Cross / Reducing Cross



Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
76 x 60	1930	1524	1219	1219
76 x 56	1930	1422	1168	1168
76 x 52	1930	1321	1118	1118
76 x 48	1930	1219	1067	1067
80 x 80	2032	2032	1499	1397
80 x 76	2032	1930	1372	1372
80 x 72	2032	1829	1346	1346

Nominal Pipe Size (NPS)	Outside Diameter At Bevel D (mm)		Center to End C (mm)	
	Run	Outlet	Run(C)	Outlet(M)
80 x 68	2032	1727	1321	1321
80 x 64	2032	1626	1295	1295
80 x 60	2032	1524	1270	1270
80 x 56	2032	1422	1219	1219
80 x 52	2032	1321	1168	1168
80 x 48	2032	1219	1118	1118