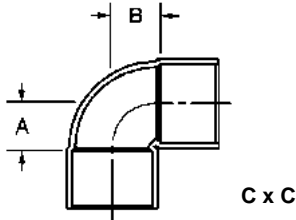


Cello  ELBOWS

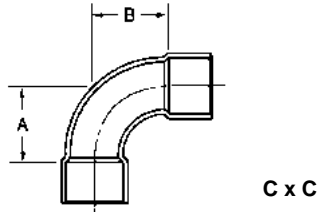
90° Elbow-Close Ruff
Copper to Copper



Nominal Size in inches	Dim. A	Dim. B
*1/8	1/4	1/4
*1/4	3/8	3/8
*3/8	21/64	21/64
*1/2	5/16	5/16
*5/8	17/32	17/32
*3/4	9/16	9/16
*1	5/8	5/8
*1-1/4	7/8	7/8
*1-1/2	1	1
*2	1-1/8	1-1/8
*2-1/2	1-3/8	1-3/8
*3	1-61/64	1-61/64
*3-1/2	2-7/32	2-7/32
4	2-17/32	2-17/32
5	3-1/8	3-1/8
6	3-13/16	3-13/16
*8	5-1/8	5-1/8
*3-1/8 x 1/4	41/64	39/64
*1/2 x 1/4	11/16	5/8
*1/2 x 3/8	7/16	3/8
**5/8 x 1/2	31/32	7/8
**3/4 x 3/8	—	—
*3/4 x 1/2	11/16	9/16
*1 x 1/2	1-1/8	7/8
*1 x 3/4	3/4	19/32
1-1/4 x 3/4	5/8	1-1/16
**1-1/4 x 1	7/8	1-15/32
**1-1/2 x 3/4	5/8	1
**1-1/2 x 1	3/4	13/16
1-1/2 x 1-1/4	1-9/64	55/64
**2 x 1	3/4	1-1/4
*2 x 1-1/2	1-9/16	1-13/64
*2-1/2 x 2	1-7/8	1-1/2

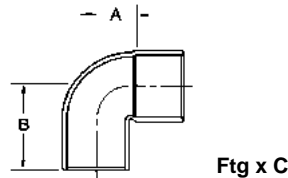
* Wrought Copper Only
** Cast Bronze Only

90° Elbow-Long Turn
Copper to Copper



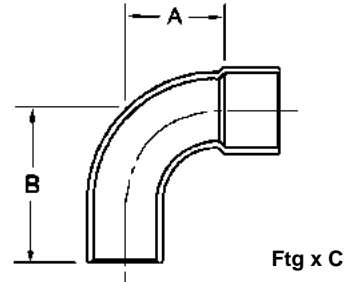
Nominal Size in inches	Dim. A	Dim. B
1/8	1/2	1/2
1/4	3/4	3/4
3/8	3/4	3/4
1/2	7/8	7/8
5/8	1-1/8	1-1/8
3/4	1-3/16	1-3/16
1	1-1/2	1-1/2
1-1/4	1-7/8	1-7/8
1-1/2	2-3/16	2-3/16
2	3	3
2-1/2	3-3/4	3-3/4
3	4-5/8	4-5/8
5/8 x 1/2	31/32	7/8
3/4 x 1/2	7/8	7/8
1 x 1/2	1-1/8	7/8
1 x 3/4	1-1/4	1-9/64
1-1/4 x 1/2	1-15/32	1-13/32
1-1/4 x 3/4	1-5/16	1-3/16
1-1/4 x 1	1-5/8	1-15/32
1-1/2 x 1	1-37/64	1-13/32
2 x 1-1/4	2-1/2	2-1/8

90° Street Elbow-Close Ruff
Fitting to Copper



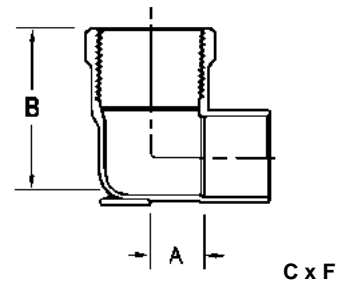
Nominal Size in inches	Dim. A	Dim. B
1/4	3/8	3/4
3/8	21/64	49/64
1/2	7/16	1
5/8	17/32	1-7/32
3/4	5/8	1-5/8
1	21/32	1-21/32
1-1/4	15/16	2-7/32
1-1/2	1-1/8	2-19/32
2	1-1/8	3-3/16
2-1/2	1-1/2	3-1/2
3	2	3-25/32
4	2-19/32	4-13/16

90° Street Elbow-Long Turn
Fitting to Copper



Nominal Size in inches	Dim. A	Dim. B
1/4	3/4	1-1/8
3/8	3/4	1-3/16
1/2	7/8	1-7/16
5/8	1-1/8	1-13/16
3/4	1-5/32	2
1	1-3/8	2-3/8
1-1/4	1-7/8	2-29/32
1-1/2	2-3/16	3-5/16

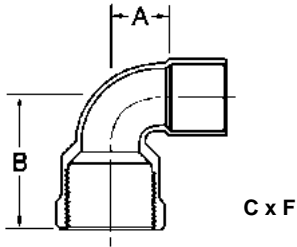
90° CxF Drop Ear Elbow
Copper to Female NPT



Nominal Size in inches	Dim. A	Dim. B
1/2	1/2	3/4
3/4	11/16	7/8
1	3/4	1-3/8
1/2 x 3/8	1/2	27/32
1/2 x 3/4	5/8	27/32
3/4 x 1/2	5/8	1-3/32

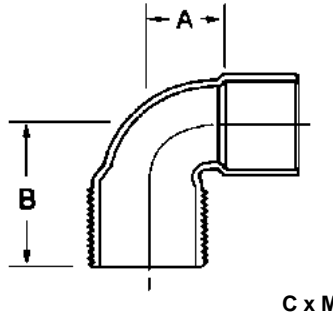
Cello ELBOWS & TEES

90° CxF Elbow
Copper to Female NPT



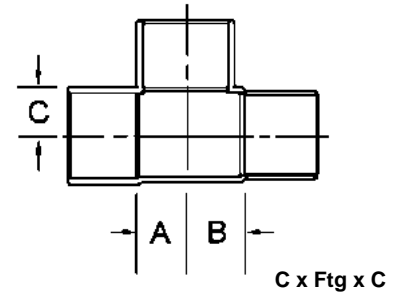
Nominal Size in inches	Dim. A	Dim. B
1/4	7/16	9/16
1/2	9/16	3/4
3/4	9/16	1-1/32
1	7/8	1-21/32
1-1/4	13/16	1-3/4
1-1/2	1-1/16	2-1/16
2	1-1/16	2-17/32
3	2	3-5/16
1/2 x 1/4	5/16	1
1/2 x 3/8	13/32	1
1/2 x 3/4	21/32	3/4
1/2 x 1	11/16	1-3/8
3/4 x 1/2	1/2	1-1/16
3/4 x 1	3/4	1-17/32
1 x 1/2	3/8	1-7/16
1 x 3/4	9/16	1-3/8
1-1/4 x 3/4	3/4	19/32
1-1/4 x 1	11/16	1-13/16

90° CxM Elbow
Copper to Male NPT



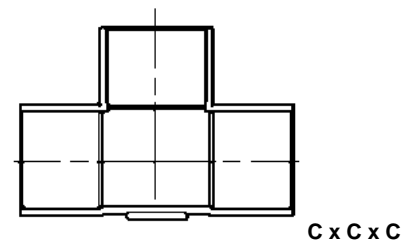
Nominal Size in inches	Dim. A	Dim. B
3/8	7/16	1
1/2	1/8	1-7/32
3/4	1/2	1-3/8
1	3/4	1-23/32
1-1/4	3/4	2
1-1/2	15/16	2-1/32
2	1-3/8	2-5/8
3	1-5/8	3-3/4
1/2 x 3/8	1/2	1-1/8
1/2 x 3/4	5/16	1-3/8
3/4 x 1/2	7/16	1-3/16

Street Tee
Copper to Fitting to Copper



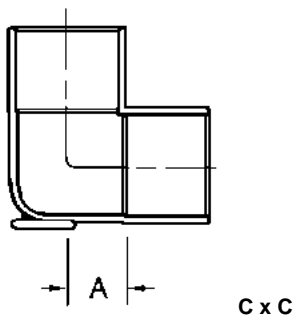
Nominal Size in inches	Dim. A	Dim. B	Dim. C
*1/2	3/8	1-1/32	11/32
3/4	1/2	1-37/64	1/2

CxCxC Drop Ear Tee
Copper to Copper to Copper



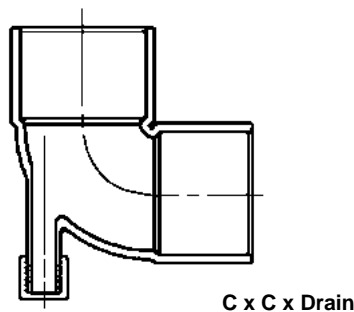
Nominal Size in inches
1/2

90° CxC Drop Ear Elbow
Copper to Copper



Nominal Size in inches	Dim. A
1/2	3/8
3/4	7/16
1	3/4

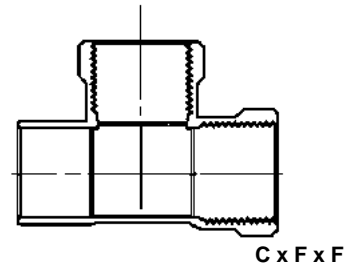
90° CxC Vent Elbow
Copper to Copper to Drain Cap



Nominal Size in inches
1/2
3/4

* Wrought Copper Only

CxFxF Tee
Copper to Female NPT to Female NPT

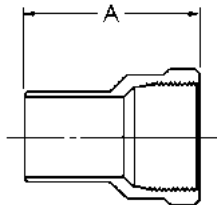


Nominal Size in inches
1/2
3/4
1/2 x 3/4 x 1/2
3/4 x 3/4 x 1/2



ADAPTERS & ELBOWS

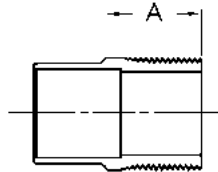
Female Street Adapter
Fitting to Female NPT



Ftg x F

Nominal Size in inches	Dim. A
*1/4	29/32
*3/8	1-1/16
†1/2	1-3/8
*3/4	1-11/16
*1	1-31/32
*1-1/4	2-5/32
*1-1/2	2-7/16
*2	2-19/32
*1/2 x 1/4	1-1/4
*1/2 x 3/8	1-1/4
**1/2 x 3/4	1-7/16
**3/4 x 1/2	1-7/16
**1 x 3/4	1-7/16

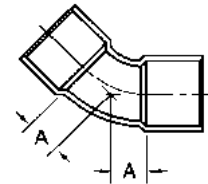
Male Adapter
Copper to Male NPT



C x M

Nominal Size in inches	Dim. A
*1/8	13/32
*1/4	15/32
*3/8	7/8
†1/2	19/32
†3/4	13/16
†1	27/32
1-1/4	1-1/2
1-1/2	1-9/16
2	7/8
2-1/2	1-1/8
3	1-3/8
**3-1/2	2
4	2
**5	—
**6	—
*1/8 x 1/4	7/16
*1/8 x 3/8	3/4
*1/4 x 1/8	7/8
*1/4 x 3/8	5/8
*1/4 x 1/2	15/16
*3/8 x 1/4	5/8
*3/8 x 1/2	3/4
†1/2 x 1/4	13/16
†1/2 x 3/8	1-19/32
†1/2 x 3/4	3/4
1/2 x 1	59/64
*5/8 x 1/2	1-31/64
†3/4 x 1/2	1-1/4
3/4 x 1	29/32
**3/4 x 1-1/4	1-3/32
1 x 1/2	1-21/32
1 x 3/4	1-29/32
1 x 1-1/4	1-1/8
1 x 1-1/2	1
**1-1/4 x 1/2	1-1/4
1-1/4 x 3/4	1-45/64
1-1/4 x 1	1-3/8
1-1/4 x 1-1/2	1-15/32
**1-1/4 x 2	1-27/64
1-1/2 x 1	1-25/32
*1-1/2 x 1-1/4	1-3/4
1-1/2 x 2	1-5/8
*2 x 1-1/4	1-9/64
2 x 1-1/2	1-5/8
2-1/2 x 2	1-9/64

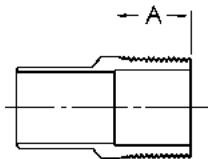
45° Elbow
Copper to Copper



C x C

Nominal Size in inches	Dim. A
*1/8	1/8
*1/4	15/64
*3/8	1/4
*1/2	1/4
*5/8	7/16
*3/4	5/16
*1	5/16
*1-1/4	7/16
*1-1/2	9/16
*2	11/16
*2-1/2	7/8
*3	63/64
*3-1/2	1-5/32
4	1-11/64
5	1-13/32
6	1-11/16
*8	2-1/4

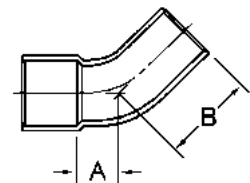
Male Street Adapter
Copper to Male NPT



Ftg x M

Nominal Size in inches	Dim. A
*1/4	1-1/16
*3/8	1-3/16
*1/2	1-7/16
*3/4	1-27/32
1	2-5/32
1-1/4	2-1/2
1-1/2	2-13/16
2	2-13/16
*2-1/2	—
*3	—
*1/2 x 3/8	—
*1/2 x 3/4	—
*3/4 x 1/2	1-23/32
*1 x 3/4	2

45° Street Elbow
Fitting to Copper



Ftg x C

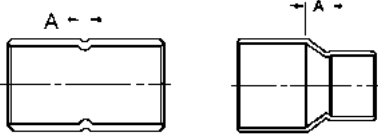
Nominal Size in inches	Dim. A	Dim. B
3/8	9/32	23/32
1/2	7/16	7/8
3/4	5/8	1-1/8
1	3/16	1-1/2
1-1/4	5/8	1-9/16
1-1/2	3/4	1-9/16
2	13/16	2-3/6
2-1/2	29/32	2-7/16
3	1	2-11/16
4	1-9/32	3-1/2

* Wrought Copper Only **Cast Bronze Only †Available in Bar Stock



COUPLINGS

Coupling With Stop Copper to Copper

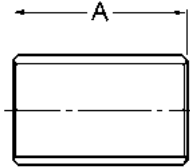


C x C

Nominal Size in inches	Dim. A
*1/8	1/16
*1/4	1/16
*3/8	1/16
*1/2	1/16
*5/8	1/16
*3/4	1/16
*1	1/16
*1-1/4	1/16
*1-1/2	1/16
*2	3/32
*2-1/2	3/32
*3	3/32
*3-1/2	1/8
*4	5/32
*5	5/32
*6	5/32
8	1/8
*1/4 x 1/8	5/32
*3/8 x 1/8	1/4
*3/8 x 1/4	3/16
*1/2 x 1/8	23/64
*1/2 x 1/4	1/4
*1/2 x 3/8	5/32
*5/8 x 1/4	5/16
*5/8 x 3/8	7/32
*5/8 x 1/2	5/32
*3/4 x 1/4	7/16
*3/4 x 3/8	21/64
*3/4 x 1/2	3/16
*3/4 x 5/8	3/16
*1 x 3/8	1/2
*1 x 1/2	7/16
*1 x 5/8	3/8

Nominal Size in inches	Dim. A
*1 x 3/4	13/32
*1-1/4 x 1/2	41/64
*1-1/4 x 3/4	15/32
*1-1/4 x 1	5/16
*1-1/2 x 1/2	25/32
*1-1/2 x 3/4	21/32
*1-1/2 x 1	7/16
*1-1/2 x 1-1/4	11/32
*2 x 1/2	1-1/8
*2 x 3/4	1
*2 x 1	11/16
*2 x 1-1/4	1/2
*2 x 1-1/2	7/16
*2-1/2 x 1	1-1/8
*2-1/2 x 1-1/4	15/16
*2-1/2 x 1-1/2	7/8
*2-1/2 x 2	3/8
*3 x 1-1/4	1-5/32
*3 x 1-1/2	13/16
*3 x 2	1/2
*3 x 2-1/2	1-1/8
*3-1/2 x 3	1/2
*4 x 2	1-1/2
*4 x 2-1/2	1-1/8
*4 x 3	7/8
*4 x 3-1/2	17/32
5 x 3	
**5 x 4	25/32
6 x 2	2-3/16
6 x 2-1/2	2-1/16
6 x 3	1-1/16
6 x 4	
6 x 5	1-3/16
*8 x 6	3/4

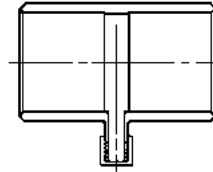
Coupling Without Stop Copper to Copper



C x C

Nominal Size in inches	Dim. A
1/8	11/16
1/4	11/16
3/8	13/16
1/2	1-1/8
3/4	1-5/8
1	1-29/32
1-1/4	2-5/16
1-1/2	2-17/64
2	2-23/32
2-1/2	3-1/16
3	3-13/32
3-1/2	3-15/16
4	4-7/16
5	5-15/32
6	6-3/8
8	8-1/4

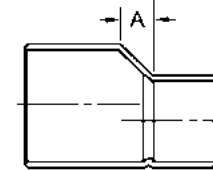
Jet Drain Coupling Copper to Copper to Drain Cap



C x C x Drain

Nominal Size in inches	Approx. Net Wt.
1/2	.09
3/4	.14

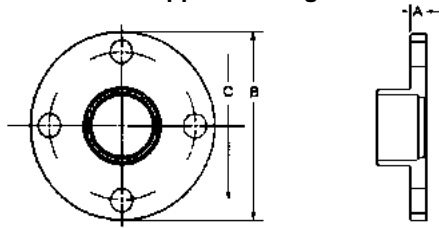
Eccentric Coupling Copper to Copper



C x C

125 lb. Companion Flange with A.S.M.E. Drilling

Copper to Flange

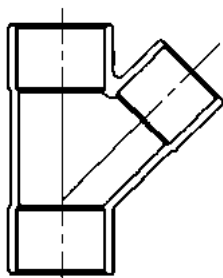


C x Flange

Nominal Size in inches	Dim. A
*3/4 x 1/2	3/8
**4 x 1/2	1/16
**1 x 3/4	13/32
**1-1/4 x 1/2	1/16
*1-1/4 x 3/4	5/8
*1-1/4 x 1	5/16
**1-1/2 x 1-1/4	1/16
**2 x 1-1/4	1/8
**2 x 1-1/2	3/32
**2-1/2 x 2	7/8
**3 x 2	3/16
**3 x 2-1/2	1/4

45° Y Branch

Copper to Copper to Copper



Nominal Size in inches
1/2
3/4
1
1-1/4
1-1/2
2

C x C x C

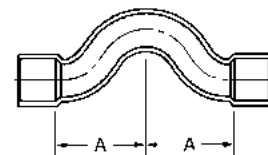
* Wrought Copper Only

** Cast Bronze Only

Nominal Size in inches	Dim. A Flange Thickness	Dim. B Flange O.D.	Dim. C Bolt Circle
1/2	0.19	3-1/2	2-3/8
3/4	0.19	3-7/8	2-3/4
1	0.19	4-1/4	3-1/8
1-1/4	0.19	4-5/8	3-1/2
1-1/2	0.25	5	3-7/8
2	0.31	6	4-3/4
2-1/2	0.31	7	5-1/2
3	0.38	7-1/2	6
3-1/2	0.38	8-1/2	7
4	0.38	9	7-1/2
5	0.38	10	8-1/2
6	0.38	11	9-1/2
8	0.50	13-1/2	11-3/4

Crossover Coupling

Copper to Copper



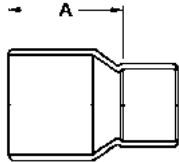
C x C

Nominal Size in inches	Dim. A
*1/2	1-19/64
**3/4	1-23/32



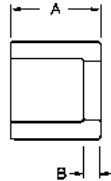
BUSHINGS & ADAPTERS

Bushing
Fitting to Copper



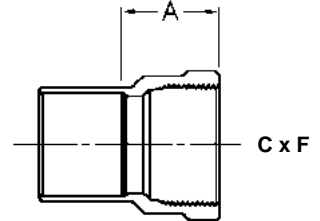
Ftg x C

Flush Bushing
Fitting to Copper



Ftg x C

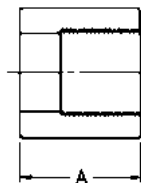
Female Adapter
Copper to Female NPT



Nominal Size In Inches	Dim. A
*1/4 x 1/8	1/2
*3/8 x 1/8	5/8
*3/8 x 1/4	17/32
*1/2 x 1/4	5/8
*1/2 x 3/8	11/16
*5/8 x 3/8	29/32
*5/8 x 1/2	25/32
*3/4 x 1/4	1-1/8
*3/4 x 3/8	1-1/16
*3/4 x 1/2	15/16
*3/4 x 5/8	15/16
*1 x 3/8	1-3/8
*1 x 1/2	1-1/4
*1 x 5/8	1-7/32
*1 x 3/4	1-1/16
*1-1/4 x 1/2	1-15/32
*1-1/4 x 3/4	1-3/8
*1-1/4 x 1	1-1/8
*1-1/2 x 1/2	1-7/8
*1-1/2 x 3/4	1-1/2
*1-1/2 x 1	1-1/2
*1-1/2 x 1-1/4	1-19/64
*2 x 1/2	2-7/16
*2 x 3/4	2-11/32
*2 x 1	2-1/8
*2 x 1-1/4	1-3/4
*2 x 1-1/2	1-3/4
*2-1/2 x 1	2-17/32
*2-1/2 x 1-1/4	2-1/8
*2-1/2 x 1-1/2	2-1/8
*2-1/2 x 2	1-15/16
*3 x 1-1/4	2-25/32
*3 x 1-1/2	2-11/16
*3 x 2	2-1/2
*3 x 2-1/2	2-3/32
*3-1/2 x 2	2-51/64
*3-1/2 x 2-1/2	2-7/16
*3-1/2 x 3	2-1/4
*4 x 2	3-17/32
*4 x 2-1/2	3-7/32
*4 x 3	2-15/16
*4 x 3-1/2	2-23/32
5 x 3	3-13/16
5 x 4	3-11/32
6 x 2	5-7/32
6 x 2-1/2	5-1/32
6 x 3	4-23/32
6 x 4	4-3/8
6 x 5	3-7/8
*8 x 6	5-7/32

Nominal Size in inches	Dim. A	Dim. B
1/2 x 1/4	1/2	3/16
1/2 x 3/8	9/16	1/8
3/4 x 1/2	13/16	1/4
1 x 3/4	31/32	3/32
1-1/4 x 3/4	1-3/64	1/8
1-1/4 x 1	1-1/32	1/32
1-1/2 x 1-1/4	1-5/32	1/8
2 x 1-1/2	1-13/32	1/4

Flush Bushing
Fitting to Female NPT



Ftg x F

Nominal Size in inches	Dim. A
1/2 x 1/8	9/16
1/2 x 1/4	9/16
3/4 x 1/8	13/16
3/4 x 3/8	13/16
1 x 1/2	31/32
1-1/4 x 1/2	1-1/32
1-1/4 x 3/4	1-1/32
1-1/4 x 1	1-1/32
1-1/2 x 1	1-5/32
Bar Stock	

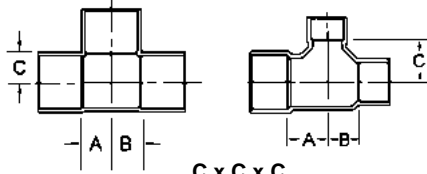
Nominal Size in inches	Dim. A
*1/8	7/16
*1/4	15/32
*3/8	19/32
†1/2	7/8
†3/4	23/32
1	31/32
1-1/4	1-3/32
1-1/2	1-5/32
2	1-1/4
2-1/2	1-1/2
**3	1-1/2
**4	2
**5	2
**6	2
*1/8 x 1/4	2-1/4
*1/4 x 1/8	1/2
*1/4 x 3/8	21/32
*3/8 x 1/4	7/16
*3/8 x 1/2	7/8
†1/2 x 1/8	9/16
†1/2 x 1/4	9/16
†1/2 x 3/8	9/16
†1/2 x 3/4	29/32
**1/2 x 1	1
*5/8 x 1/2	3/4
†3/4 x 1/2	11/16
3/4 x 1	1-4/32
**3/4 x 1-1/4	13/16
**3/4 x 1-1/2	1-3/8
1 x 1/2	11/16
†1 x 3/4	43/64
1 x 1-1/4	1-7/32
**1 x 1-1/2	1-1/8
**1-1/4 x 1/2	1/2
**1-1/4 x 3/4	1/2
1-1/4 x 1	55/64
1-1/4 x 1-1/2	1-19/64
1-1/4 x 2	7/8
**1-1/2 x 3/4	7/8
**1-1/2 x 1	7/8
1-1/2 x 1-1/4	7/8
1-1/2 x 2	7/8
2 x 1-1/2	1-3/16

* Wrought Copper Only
**Cast Bronze Only
†Available in Bar Stock

Cello TEES

Tee

Copper to Copper to Copper



C x C x C

Nominal Size in inches	Dim. A	Dim. B	Dim. C
*1/8	1/8	1/8	1/8
*1/4	17/64	17/64	1/4
*3/8	5/16	5/16	3/8
1/2	21/64	21/64	21/64
*5/8	7/8	7/16	1/2
3/4	1/2	1/2	17/32
1	21/32	21/32	21/32
*1-1/4	7/8	7/8	25/32
*1-1/2	1-5/32	1-5/32	1-5/32
*2	1-3/8	1-3/8	1-3/8
*2-1/2	1-21/32	1-21/32	1-11/16
*3	1-7/8	1-7/8	1-11/16
*3-1/2	2-5/32	2-5/32	2-1/4
4	2-13/32	2-13/32	2-9/16
5	2-37/64	2-37/64	2-29/32
6	3-1/8	3-1/8	3-11/16
*8	4-1/16	4-1/16	4-3/4
*1/8 x 1/8 x 1/4	13/32	13/32	1/4
*1/4 x 1/8 x 1/4	17/64	13/32	1/4
*1/4 x 1/4 x 1/8	13/64	13/64	7/32
3/8 x 1/4 x 3/8	5/16	15/32	3/8
3/8 x 3/8 x 1/8	5/16	5/16	39/64
3/8 x 3/8 x 1/4	5/16	5/16	15/32
3/8 x 3/8 x 1/2	17/32	17/32	11/32
1/2 x 3/8 x 3/8	5/16	1/2	13/32
1/2 x 3/8 x 1/2	3/8	17/32	11/32
1/2 x 1/2 x 1/8	9/32	9/32	1/2
1/2 x 1/2 x 1/4	9/32	9/32	13/32
1/2 x 1/2 x 3/8	5/16	5/16	13/32
1/2 x 1/2 x 3/4	33/64	33/64	15/32
1/2 x 1/2 x 1	15/16	15/16	3/4
5/8 x 5/8 x 3/8	27/64	27/64	21/32
3/4 x 1/2 x 3/8	25/64	5/8	11/16
3/4 x 1/2 x 1/2	25/64	5/8	19/32
3/4 x 1/2 x 3/4	1/2	25/32	17/32
3/4 x 3/4 x 3/8	25/64	25/64	11/16
3/4 x 3/4 x 1/2	25/64	25/64	1/2
3/4 x 3/4 x 1	3/4	3/4	17/32
1 x 1/2 x 1/2	23/64	13/16	11/16
1 x 1/2 x 3/4	1/2	15/16	5/8
1 x 1/2 x 1	21/32	5/64	21/32
1 x 3/4 x 1/2	23/64	9/16	11/16
1 x 3/4 x 3/4	1/2	11/16	5/8
1 x 3/4 x 1	21/32	53/64	21/32
1 x 1 x 3/8	23/64	23/64	13/16
1 x 1 x 1/2	23/64	23/64	3/4
1 x 1 x 3/4	1/2	1/2	3/4
1 x 1 x 1-1/4	1-5/32	1-5/32	31/32
1 x 1 x 1-1/2	1-1/4	1-1/4	1-5/32
1-1/4 x 1/2 x 3/4	9/16	5/8	7/8
1-1/4 x 1/2 x 1	3/4	3/4	7/8
1-1/4 x 1/2 x 1-1/4	7/8	7/8	25/32
1-1/4 x 3/4 x 1/2	1/2	1/2	25/32
1-1/4 x 3/4 x 3/4	5/8	5/8	25/32
1-1/4 x 3/4 x 1	3/4	3/4	25/32
1-1/4 x 3/4 x 1-1/4	7/8	7/8	25/32

* Wrought Copper Only

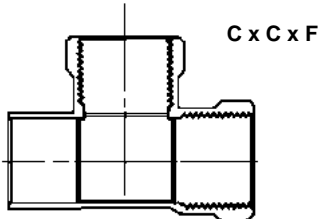
Nominal Size in inches	Dim. A	Dim. B	Dim. C
1-1/4 x 1 x 1/2	1/2	1/2	25/32
1-1/4 x 1 x 3/4	5/8	5/8	25/32
1-1/4 x 1 x 1	3/4	3/4	25/32
1-1/4 x 1 x 1-1/4	7/8	7/8	25/32
1-1/4 x 1-1/4 x 1/2	1/2	1/2	25/32
1-1/4 x 1-1/4 x 3/4	5/8	5/8	25/32
1-1/4 x 1-1/4 x 1	3/4	3/4	25/32
1-1/4 x 1-1/4 x 1-1/2	1-3/16	1-3/16	1-5/32
1-1/4 x 1-1/4 x 2	1-3/4	1-3/4	1-3/8
1-1/2 x 1/2 x 1-1/2	1-5/32	1/31/16	1-5/32
1-1/2 x 3/4 x 1/2	9/16	64	31/32
1-1/2 x 3/4 x 3/4	11/64	15/16	31/32
1-1/2 x 3/4 x 1	27/32	1-1/32	1-1/16
1-1/2 x 3/4 x 1-1/4	31/32	1-5/16	1-1/16
1-1/2 x 3/4 x 1-1/2	1-5/32	1-1/4	1-5/32
1-1/2 x 1 x 1/2	9/16	1-19/32	31/32
1-1/2 x 1 x 3/4	11/16	64	31/32
1-1/2 x 1 x 1	27/32	1-1/16	1-1/16
1-1/2 x 1 x 1-1/4	31/32	1-1/16	1-1/16
1-1/2 x 1 x 1-1/2	1-5/32	1-1/4	1-5/32
1-1/2 x 1-1/4 x 1/2	9/16	13/16	31/32
1-1/2 x 1-1/4 x 3/4	11/16	7/8	31/32
1-1/2 x 1-1/4 x 1	27/32	1-3/16	1-1/16
1-1/2 x 1-1/4 x 1-1/4	31/32	1-3/16	1-1/16
1-1/2 x 1-1/4 x 1-1/2	1-7/32	1-3/16	1-7/32
1-1/2 x 1-1/2 x 1/2	9/16	9/16	31/32
1-1/2 x 1-1/2 x 3/4	11/16	11/16	31/32
1-1/2 x 1-1/2 x 1	27/32	27/32	1-1/16
1-1/2 x 1-1/2 x 1-1/4	31/32	31/32	1-1/16
1-1/2 x 1-1/2 x 2	1-37/64	1-37/64	1-3/8
2 x 1/2 x 2	1-3/8	1-7/8	1-3/8
2 x 3/4 x 2	1-3/8	1-3/4	1-3/8
2 x 1 x 1	27/32	1-9/32	1-11/32
2 x 1 x 2	1-3/8	1-25/32	1-3/8
2 x 1-1/4 x 1/2	5/8	1-5/64	1-1/4
2 x 1-1/4 x 3/4	11/16	1-5/32	1-1/4
2 x 1-1/4 x 1	13/16	1-9/32	1-5/16
2 x 1-1/4 x 1-1/4	31/32	1-3/16	1-3/8
2 x 1-1/4 x 1-1/2	1-1/32	1-3/8	1-11/32
2 x 1-1/4 x 2	1-3/8	1-25/32	1-3/8
2 x 1-1/2 x 1/2	5/8	15/16	1-1/4
2 x 1-1/2 x 3/4	11/16	1-1/16	1-1/4
2 x 1-1/2 x 1	13/16	1-1/16	1-5/16
2 x 1-1/2 x 1-1/4	31/32	1-3/16	1-3/8
2 x 1-1/2 x 1-1/2	1-1/32	1-19/64	1-11/32
2 x 1-1/2 x 2	1-3/8	1-37/64	1-3/8
2 x 2 x 1/2	5/8	5/8	1-1/4
2 x 2 x 3/4	11/16	11/16	1-1/4
2 x 2 x 1	13/16	13/16	1-5/16
2 x 2 x 1-1/4	31/32	31/32	1-3/8
2 x 2 x 1-1/2	1-1/32	1-1/32	1-11/32
2 x 2 x 2-1/2	2	2	1-11/16
2-1/2 x 2 x 3	1-13/16	1-13/16	1-3/32
2-1/2 x 1/2 x 2-1/2	1-1/2	2-7/32	1-1/2
2-1/2 x 3/4 x 2	1-7/16	3-7/8	1-11/16
2-1/2 x 3/4 x 2-1/2	1-21/32	3-7/16	1-11/16
2-1/2 x 1 x 2	1-7/16	2-7/8	1-11/16
2-1/2 x 1 x 2-1/2	1-21/32	3-7/32	1-11/16
2-1/2 x 1-1/4 x 1-1/4	1	2-9/32	1-39/64
2-1/2 x 1-1/4 x 1-1/2	1-3/16	2-17/32	1-19/32
2-1/2 x 1-1/4 x 2	1-7/16	2-45/64	1-11/16
2-1/2 x 1-1/4 x 2-1/2	1-21/32	2-31/32	1-11/16
2-1/2 x 1-1/2 x 3/4	3/4	1-15/16	1-31/64
2-1/2 x 1-1/2 x 1	7/8	2-1/16	1-5/8
2-1/2 x 1-1/2 x 1-1/4	1	2-3/16	1-39/64
2-1/2 x 1-1/2 x 1-1/2	1-3/16	2-19/64	1-19/32
2-1/2 x 1-1/2 x 2	1-7/16	2-15/32	1-11/16
2-1/2 x 1-1/2 x 2-1/2	1-21/32	2-21/32	1-11/16
2-1/2 x 2 x 1/2	1/2	1-11/32	1-1/2

Nominal Size in inches	Dim. A	Dim. B	Dim. C
2-1/2 x 2 x 3/4	3/4	1-3/8	1-31/64
2-1/2 x 2 x 1	7/8	1-9/16	1-19/32
2-1/2 x 2 x 1-1/4	1	1-11/16	1-5/8
2-1/2 x 2 x 1-1/2	1-3/16	1-3/4	1-39/64
2-1/2 x 2 x 2	1-7/16	2-3/64	1-19/32
2-1/2 x 2 x 2-1/2	2	2	1-11/16
2-1/2 x 2-1/2 x 1/2	1/2	1/2	1-11/16
2-1/2 x 2-1/2 x 3/4	3/4	3/4	1-1/2
2-1/2 x 2-1/2 x 1	7/8	7/8	1-31/64
2-1/2 x 2-1/2 x 1-1/4	1	1	1-5/8
2-1/2 x 2-1/2 x 1-1/2	1-3/16	1-3/16	1-39/64
2-1/2 x 2-1/2 x 2	1-7/16	1-7/16	1-19/32
2-1/2 x 2-1/2 x 3	2-5/8	2-5/8	1-11/16
3 x 3/4 x 3	1-7/8	4-1/32	1-7/8
3 x 1 x 3	1-7/8	3-29/32	1-7/8
3 x 1-1/4 x 3	1-7/8	3-23/32	1-7/8
3 x 1-1/2 1-1/4	31/32	2-21/32	1-59/64
3 x 1-1/2 x 1-1/2	1-3/16	2-25/32	1-29/32
3 x 1-1/2 x 2	1-7/16	3-1/8	1-31/32
3 x 1-1/2 x 3	1-7/8	3-9/16	1-7/8
3 x 2 x 1/2	9/16	1-27/32	1-11/16
3 x 2 x 3/4	3/4	1-31/32	1-13/16
3 x 2 x 1	7/8	2	1-59/64
3 x 2 x 1-1/4	31/32	2-3/16	1-59/64
3 x 2 x 1-1/2	1-3/16	2-5/16	1-29/32
3 x 2 x 2	1-7/16	2-9/16	1-31/32
3 x 2 x 2-1/2	1-11/16	2-23/32	1-31/32
3 x 2 x 3	1-7/8	3-1/16	1-7/8
3 x 2-1/2 x 1/2	9/16	1-13/32	1-11/16
3 x 2-1/2 x 3/4	3/4	1-17/32	1-13/16
3 x 2-1/2 x 1	7/8	1-5/8	1-59/64
3 x 2-1/2 x 1-1/4	31/32	1-3/4	1-59/64
3 x 2-1/2 x 1-1/2	1-3/16	1-7/8	1-29/32
3 x 2-1/2 x 2	1-7/16	2-1/8	1-31/32
3 x 2-1/2 x 2-1/2	1-11/16	2-13/32	1-31/32
3 x 2-1/2 x 3	1-7/8	2-5/8	1-7/8
3 x 3 x 1/2	9/16	9/16	1-11/16
3 x 3 x 3/4	3/4	3/4	1-13/16
3 x 3 x 1	7/8	7/8	1-59/64
3 x 3 x 1-1/4	31/32	31/32	1-56/64
3 x 3 x 1-1/2	1-3/16	1-3/16	1-29/32
3 x 3 x 2	1-7/16	1-7/16	1-31/32
3 x 3 x 2-1/2	1-11/16	1-11/16	1-31/32
4 x 1 x 3	2-1/32	4-15/16	2-1/2
4 x 1 x 4	2-13/32	5-9/32	2-25/64
4 x 2 x 2	1-1/2	3-17/32	2-7/16
4 x 2 x 3	2-1/32	3-31/32	2-1/2
4 x 2 x 4	2-13/32	4-1/2	2-35/64
4 x 2-1/2 x 2-1/2	1-25/32	3-5/16	2-19/32
4 x 2-1/2 x 3	2-1/32	3-37/64	2-1/2
4 x 2-1/2 x 4	2-13/32	4-1/16	2-35/64
4 x 3 1-1/2	1-3/16	2-1/2	2-9/16
4 x 3 x 2	1-1/2	2-23/32	2-7/16
4 x 3 x 2-1/2	1-25/32	2-29/32	2-19/32
4 x 3 x 3	2-1/32	3-1/32	2-1/2
*4 x 3 x 4	2-13/32	3-21/32	2-35/64
*4 x 4 x 1/2	1/2	1/2	2-5/16
*4 x 4 x 3/4	13/32	13/32	2-5/16
*4 x 4 x 1	15/16	15/16	2-5/16
*4 x 4 x 1-1/4	1-3/32	1-3/32	2-1/2
*4 x 4 x 1-1/2	1-3/16	1-3/16	2-9/16
*4 x 4 x 2	1-1/2	1-1/2	2-7/16
*4 x 4 x 2-1/2	1-25/32	1-25/32	2-19/32
*4 x 4 x 3	2-1/32	2-1/32	2-1/2
5 x 5 x 2	1-5/64	1-5/64	2-7/8
*6 x 4 x 4	2-13/64	4-3/16	3-7/16
6 x 6 x 2	1-7/32	1-7/32	3-7/16
*6 x 6 x 2-1/2	—	1-7/16	3-7/16
*6 x 6 x 3	1-7/16	1-11/16	3-7/16
6 x 6 x 4	1-11/16	2-13/64	3-7/16

Cello  **TEES & PLUGS**

CxCxF Tee

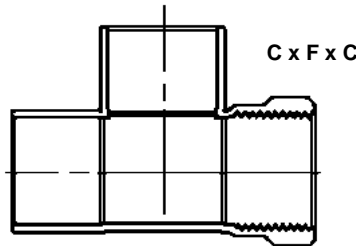
Copper to Copper to Female NPT



Nominal Size in inches
1/2
3/4
1
1-1/4
1-1/2
1/2 x 1/2 x 1/4
1/2 x 1/2 x 3/8
1/2 x 1/2 x 3/4
3/4 x 1/2 x 1/2
3/4 x 1/2 x 3/4
3/4 x 3/4 x 3/8
3/4 x 3/4 x 1/2
3/4 x 3/4 x 1
1 x 3/4 x 3/4
1 x 1 x 1/2
1 x 1 x 3/4
1-1/4 x 1-1/4 x 1/2
1-1/4 x 1-1/4 x 3/4
1-1/4 x 1-1/4 x 1
1-1/2 x 1-1/2 x 1/2
1-1/2 x 1-1/2 x 3/4
1-1/2 x 1-1/2 x 1
2 x 2 x 1/2
2 x 2 x 3/4
2 x 2 x 1

CxFxC Tee

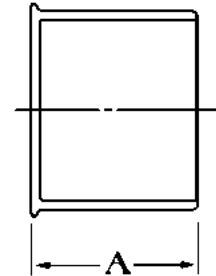
Copper to Female NPT to Copper



Nominal Size in inches
3/8
1/2
3/4
1
1-1/4
1/2 x 3/4 x 1/2
3/4 x 1/2 x 1/2
3/4 x 1/2 x 3/4
3/4 x 3/4 x 1/2
1 x 1/2 x 1
1 x 3/4 x 1

Fitting End Plug

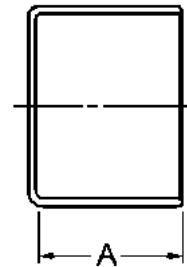
For Fitting End



Nominal Size in inches	Dim. A
1/2	0.60
3/4	0.85
1	1.00

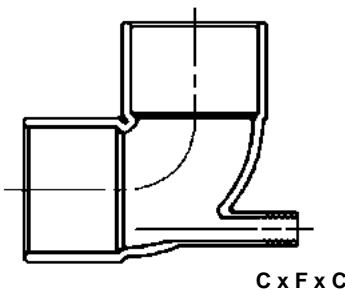
Tube End Cap

For Tube End



Baseboard Tee

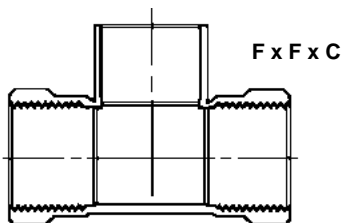
Copper to Female NPT to Copper



Nominal Size in inches
1/2 x 1/8 x 1/2
3/4 x 1/8 x 3/4
1 x 1/8 x 1
1-1/4 x 1/8 x 1-1/4

FxFxC Tee

Female NPT to Female NPT to Copper



Nominal Size in inches
1/2
3/4
3/4 x 1/2 x 1/2
3/4 x 1/2 x 3/4
3/4 x 3/4 x 1/2

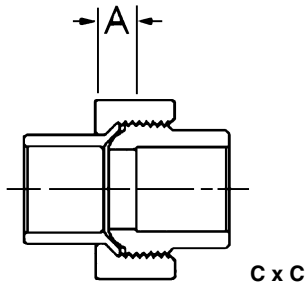
Nominal Size in inches	Dim. A
*1/8	0.25
*1/4	0.31
*3/8	0.38
*1/2	0.50
*5/8	0.62
*3/4	0.75
*1	0.91
*1-1/4	0.97
*1-1/2	1.09
*2	1.34
*2-1/2	1.47
*3	1.66
*3-1/2	1.91
*4	2.16
**5	2.66
**6	3.09
**8	3.97

* Wrought Copper Only **Cast Bronze Only



UNIONS, CROSSES, ELBOWS, RETURN BENDS

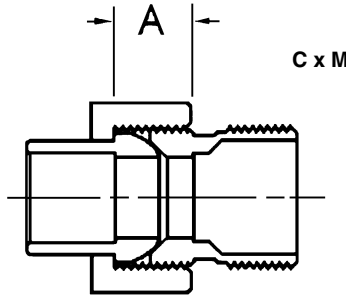
Union
Copper to Copper



Nominal Size in inches	Dim. A
*1/8	3/8
*1/4	13/32
*3/8	27/64
†*1/2	1/2
†*3/4	21/32
*1	3/4
-1-1/4	9/16
-1-1/2	5/8
-2	3/4
-2-1/2	1-1/16
-3	1-5/16
-wrot #1 tailpiece	

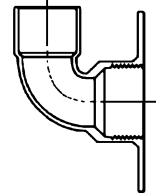
* Wrought Copper Only † Available in Bar Stock

CxM Union
Copper to Male NPT



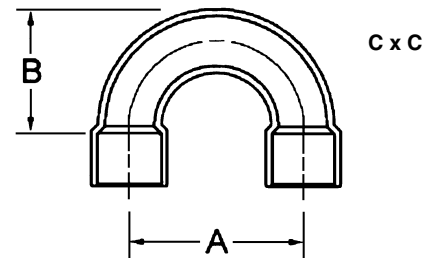
Nominal Size in inches	Dim. A
3/8	1-13/32
1/2	1-3/8
3/4	1-11/16
1	1-1/4
1-1/4	2-1/4
1-1/2	2-7/16
2	1-7/16
2-1/2	3

90° Flanged Sink Elbow
Copper to Flange



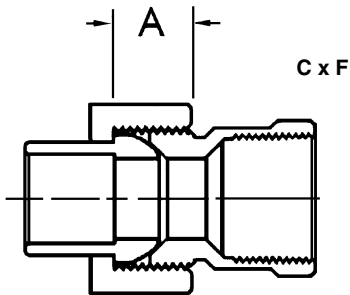
Nominal Size in inches
1/2

Return Bend
Copper to Copper



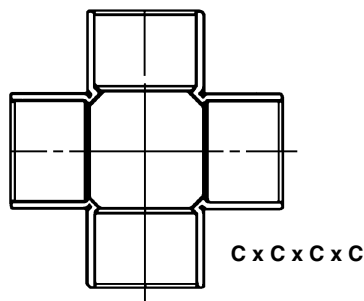
Nominal Size in inches	Dim. A	Dim. B
3/8 x 1-1/2	1-1/2	1
1/2 x 1-1/2	1-1/2	1-1/16
1/2 x 1-9/16	1-3/4	1-3/16
1/2 x 1-3/8	2	1-5/16
1/2 x 3	3	1-13/16
3/4 x 2-1/2	2-1/2	1-11/16
1 x 3	3	2-1/16
1-1/4 x 3	3	2-3/8
1-1/4 x 4	4	2-11/16
1-1/2 x 4-3/8	4-3/8	3
2 x 5-1/2	5-1/2	3-13/16

CxF Union
Copper to Female NPT



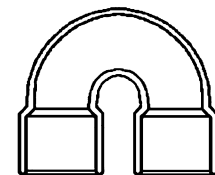
Nominal Size in inches	Dim. A
1/2	1-1/8
3/4	1-5/32
1	1-3/8
1-1/4	2-11/16
1-1/2	2-1/4
2	2-1/8
2-1/2	—

Cross
Copper to Copper to Copper to Copper



Nominal Size in inches
1/2
3/4
1
1-1/4
1-1/2
2

Close Return Bend
Copper to Copper



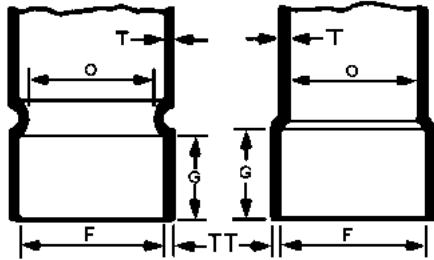
Nominal Size in inches
1/2
3/4
1



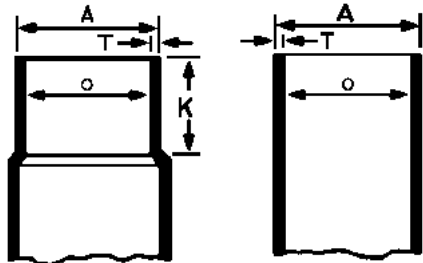
ENGINEERING DATA

Dimensions of Solder Joint Ends-Pressure Fittings

Wrought-Copper and Wrought-Copper Alloy
Solder Joint Pressure Fittings



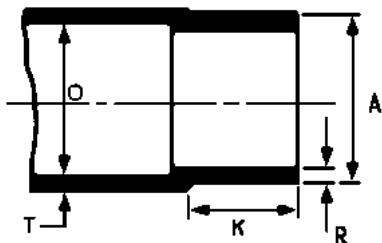
Female (Copper)



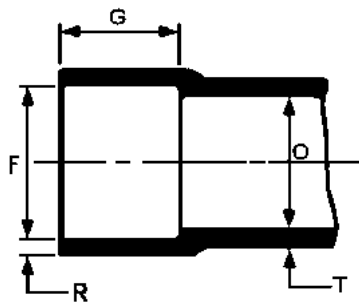
Male (Fitting)

Stand-ard Water Tube Size	Male End (fitting end)			Female End (copper end)			Inside Dia. Of Thickness T Min.	Fitting O Min.
	Outside Diameter A Min.	Max.	Length K Min.	Inside Diameter F Min.	Max.	Metal Depth G Min.		
1/8	0.248	0.251	0.31	0.252	0.256	0.25	0.019	0.18
1/4	0.373	0.376	0.38	0.377	0.381	0.31	0.023	0.30
3/8	0.497	0.501	0.44	0.502	0.506	0.38	0.026	0.39
1/2	0.622	0.626	0.56	0.627	0.631	0.50	0.029	0.52
5/8	0.747	0.751	0.69	0.752	0.756	0.62	0.031	0.63
3/4	0.872	0.876	0.81	0.877	0.881	0.75	0.033	0.74
1	1.122	1.127	0.97	1.128	1.132	0.91	0.040	0.98
1-1/4	1.372	1.377	1.03	1.378	1.382	0.97	0.044	1.23
1-1/2	1.621	1.627	1.16	1.628	1.633	1.09	0.051	1.47
2	2.121	2.127	1.41	2.128	2.133	1.34	0.059	1.94
2-1/2	2.621	2.627	1.53	2.628	2.633	1.47	0.067	2.42
3	3.121	3.127	1.72	3.128	3.133	1.66	0.075	2.89
3-1/2	3.621	3.627	1.97	3.628	3.633	1.91	0.086	3.37
4	4.121	4.127	2.22	4.128	4.133	2.16	0.096	3.84
5	5.121	5.127	2.72	5.128	5.133	2.66	0.111	4.70
6	6.121	6.127	3.22	6.128	6.133	3.09	0.124	5.72
8	8.119	8.127	4.09	8.128	8.133	3.97	0.173	7.55

Cast Copper Alloy Solder Joint Pressure Fittings



Male (Fitting)



Female (Copper)

Standard Water Tube Size	Male End (fitting end)			Female End (copper end)			Metal Thickness +/- 10%		Inside Dia. Of Fitting O Min.
	Outside Diameter A Min.	Max.	Length K Min.	Inside Diameter F Min.	Max.	Depth G Min.	Body T	Joint R	
1/4	0.373	0.376	0.38	0.377	0.381	0.31	0.08	0.05	0.31
3/8	0.497	0.501	0.44	0.502	0.506	0.38	0.09	0.05	0.43
1/2	0.622	0.626	0.56	0.627	0.631	0.50	0.09	0.05	0.54
3/4	0.872	0.876	0.81	0.877	0.881	0.75	0.10	0.06	0.78
1	1.122	1.127	0.97	1.128	1.132	0.91	0.11	0.07	1.02
1-1/4	1.372	1.377	1.03	1.387	1.382	0.97	0.12	0.07	1.26
1-1/2	1.621	1.627	1.16	1.628	1.633	1.09	0.13	0.08	1.50
2	2.121	2.127	1.41	2.128	2.133	1.34	0.15	0.09	1.98
2-1/2	2.621	2.627	1.53	2.628	2.633	1.47	0.17	0.10	2.46
3	3.121	3.127	1.72	3.128	3.133	1.66	0.19	0.11	2.94
3-1/2	3.621	3.627	1.97	3.628	3.633	1.91	0.20	0.12	3.42
4	4.121	4.127	2.22	4.128	4.133	2.16	0.22	0.13	3.90
5	5.121	5.127	2.72	5.128	5.133	2.66	0.28	0.17	4.87
6	6.121	6.127	3.22	6.128	6.133	3.09	0.34	0.20	5.84
8	8.119	8.127	4.09	8.128	8.133	3.97	0.38	0.31	7.72
10	10.119	10.127	4.12	10.128	10.133	4.00	0.48	0.48	9.62
12	12.119	12.127	4.62	12.128	12.133	4.50	0.56	0.56	11.56



ENGINEERING DATA

Rated Internal Working Pressure for Copper Fittings

Standard Water Tube Size	-20 – 100° F	150° F	200° F	250° F	300° F	350° F	400° F
1/4	912	775	729	729	714	608	456
3/8	779	662	623	623	610	519	389
1/2	722	613	577	577	565	481	361
5/8	631	537	505	505	495	421	316
3/4	582	495	466	466	456	388	291
1	494	420	395	395	387	330	247
1-1/4	439	373	351	351	344	293	219
1-1/2	408	347	327	327	320	272	204
2	364	309	291	291	285	242	182
2-1/2	336	285	269	269	263	224	168
3	317	270	254	254	248	211	159
3-1/2	304	258	243	243	238	202	152
4	293	249	235	235	230	196	147
5	269	229	215	215	211	179	135
6	251	213	201	201	196	167	125
8	270	230	216	216	212	180	135

Copper fittings have the same rated internal working pressure as straight, seamless ASTM B88 Type L annealed copper water tube. The actual bursting pressure of both fittings and tube exceed 4 times the internal working pressures shown above.

Solder Requirements for Solder Joint Pressure Fittings in lbs./100 joints

Tube Nominal Size in inches	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6	8
Quantity in pounds	0.10	0.16	0.16	0.39	0.55	0.89	1.12	1.48	2.38	3.73	4.34	5.70	7.45	11.4	15.8	27.0

- Notes: 1. Actual consumption will depend on workmanship.
 2. Includes an allowance of 100% to cover usage and loss.
 3. Flux requirements are usually 2 oz. per 16 lbs. of solder.

Typical Brazing Filler Metal Requirements in lbs./100 joints.

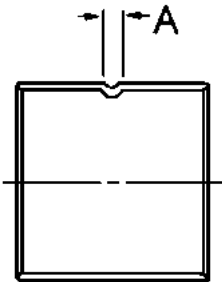
Tube Nominal Size in inches	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6	8
Quantity in pounds	0.04	0.06	0.10	0.15	0.21	0.32	0.42	0.56	0.90	1.22	1.64	2.18	2.81	4.30	5.97	10.2

- Notes: 1. Assumes 2/3 penetration of socket.
 2. Actual consumption could be 2 to 3 times as shown, depending on workmanship.



COUPLINGS, BUSHINGS & ADAPTERS-DWV

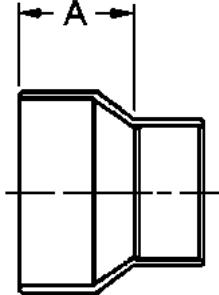
DWV-Coupling With Stop
Copper to Copper



C x C

Nominal Size in inches	Dim. A
*1-1/4	3/32
*1-1/2	3/32
*2	3/32
*3	1/8
*4	5/32
*6	5/32
*1-1/2 x 1-1/4	1/4
*2 x 1-1/4	5/16
*2 x 1-1/2	5/16
*3 x 1-1/4	5/8
*3 x 1-1/2	1
*3 x 2	5/8
**4 x 1-1/4	3/4
**4 x 1-1/2	3/4
**4 x 2	5/8
**4 x 3	7/16

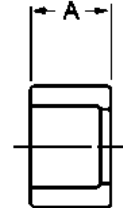
DWV-Bushing
Fitting to Copper



Ftg x C

Nominal Size in inches	Dim. A
*1-1/2 x 1-1/4	7/8
*2 x 1-1/4	1-3/32
*2 x 1-1/2	1-3/32
*3 x 1-1/4	2
*3 x 1-1/2	1-21/32
*3 x 2	1-7/16
**4 x 1-1/4	2
**4 x 1-1/2	2-1/4
**4 x 2	2-1/16
**4 x 3	1-13/16

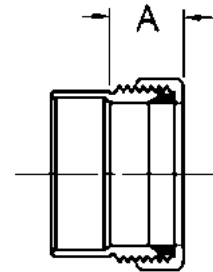
DWV-Ftg Flush Bushing
Fitting to Copper



Ftg x C

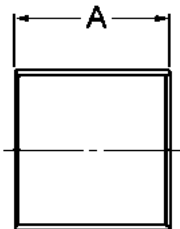
Nominal Size in inches	Dim. A
1-1/2 x 1-1/4	3/4
2 x 1-1/2	13/16

DWV-C x SJ Adapter
Copper to Slip Joint



C x SJ

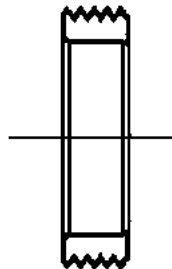
DWV-Coupling - Without Stop
Copper to Copper



C x C

Nominal Size in inches	Dim. A
1-1/4	1-1/8
1-1/2	1-3/32
2	1-1/4
3	1-5/8
4	2-5/32
6	

DWV-Marvel Trap Bushing
Copper to Male NPT



C x M

Nominal Size in inches
1-1/4
1-1/2
2

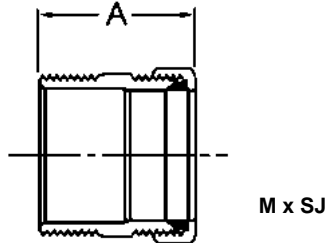
Nominal Size in inches	Dim. A
1-1/4 x 1-1/4 OD	13/16
1-1/4 x 1-1/2 OD	13/16
1-1/2 x 1-1/4 OD	13/16
1-1/2 x 1-1/2 OD	15/16
2 x 2 OD	1-1/16

* Wrought Copper Only

**Cast Bronze Only

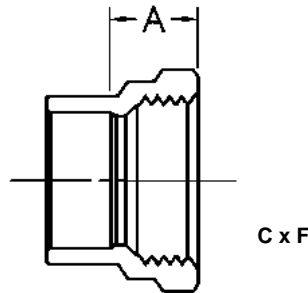
Cello ADAPTERS-DWV

DWV-M x SJ Adapter
Male NPT to Slip Joint



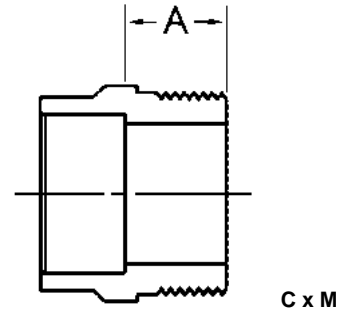
Nominal Size in inches	Dim. A
1-1/4 x 1-1/4 OD	1-11/16
1-1/2 x 1-1/4 OD	1-13/16
1-1/2 x 1-1/2 OD	1-13/16

DWV-Female Adapter
Copper to Female NPT



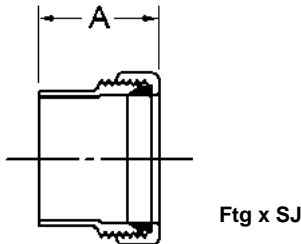
Nominal Size in inches	Dim. A
1-1/4	13/16
1-1/2	13/16
2	13/16
3	1-1/2
4	1-7/8
6	—
1-1/4 x 1-1/2	1-5/16
1-1/2 x 1-1/4	11/16
1-1/2 x 2	1-9/16
2 x 1-1/2	7/8

DWV-Male Adapter
Copper to Male NPT



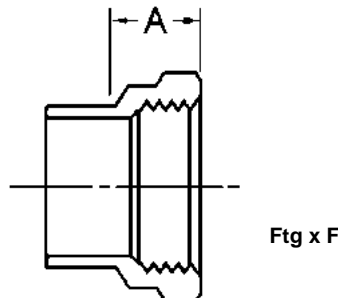
Nominal Size in inches	Dim. A
1-1/4	7/8
1-1/2	15/16
2	1-1/16
3	9/16
4	25/32
6	—
1-1/4 x 1-1/2	13/16
1-1/2 x 1-1/4	15/16
1-1/2 x 2	1-3/4
2 x 1-1/2	1-13/16

DWV-Ftg x SJ Adapter
Fitting to Slip Joint



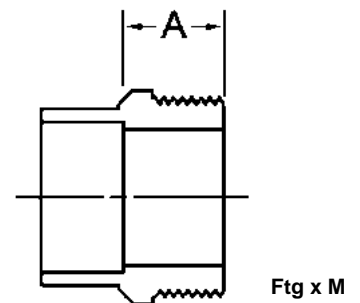
Nominal Size in inches	Dim. A
1-1/4 x 1-1/4 OD	1-15/16
1-1/4 x 1-1/2 OD	1-15/16
1-1/2 x 1-1/4 OD	1-7/8
1-1/2 x 1-1/2 OD	1-11/16

DWV-Ftg x F Adapter
Fitting to Female NPT



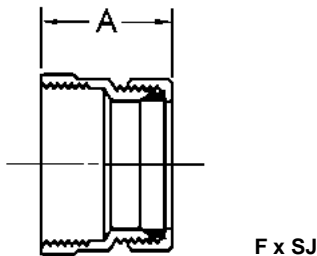
Nominal Size in inches	Dim. A
1-1/2	31/32
2	1-1/16
3	1-1/2

DWV - Ftg x M Adapter
Fitting to Male NPT



Nominal Size in inches	Dim. A
1-1/4	7/8
1-1/2	15/16
2	1-1/16

DWV-F x SJ Adapter
Female NPT to Slip Joint

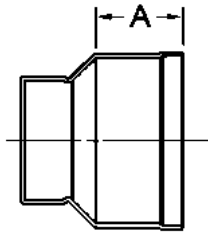


Nominal Size in inches	Dim. A
1-1/4 x 1-1/4 OD	1-7/6
1-1/2 x 1-1/4 OD	1-13/16
1-1/2 x 1-1/2 OD	1-7/8



ADAPTERS, FERRULES & ELBOWS-DWV

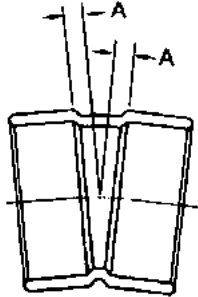
DWV-MJ Soil Pipe Adapter
Copper to No Hub



C x MJ

Nominal Size in inches	Dim. A
1-1/4 x 2	1-7/16
1-1/4 x 3	1
1-1/4 x 4	1-1/8
1-1/2 x 2	7/8
1-1/2 x 3	1
1-1/2 x 4	1-17/32
2 x 2	1
2 x 3	1
2 x 4	1-17/32
3 x 3	7/8
3 x 4	1-11/32
4 x 4	7/8
6 x 6	2-11/16

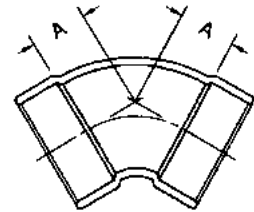
11-1/4° DWV Elbow
Copper to Copper



C x C

Nominal Size in inches	Dim. A
1-1/4	3/32
1-1/2	3/16
2	3/16
3	3/8
4	5/16

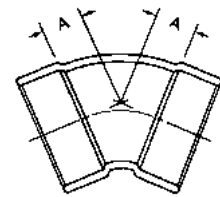
60° DWV Elbow
Copper to Copper



C x C

Nominal Size in inches	Dim. A
1-1/4	1/2
1-1/2	3/4
2	7/8
3	1-7/8
4	2-5/8

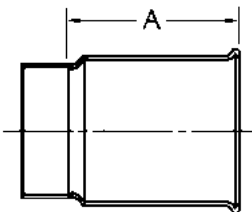
45° DWV Elbow
Copper to Copper



C x C

Nominal Size in inches	Dim. A
*1-1/4	7/16
*1-1/2	1/2
*2	13/16
*3	2-1/4
**4	1

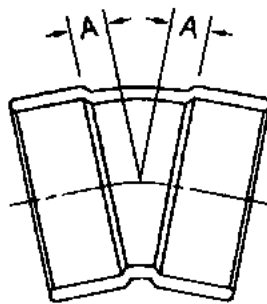
DWV-MJ Soil Pipe Ferrule
Copper to Soil Hub



C x SP

Nominal Size in inches	Dim. A
1-1/4 x 2	2-15/16
1-1/4 x 3	3-1/2
1-1/4 x 4	3-5/8
1-1/2 x 2	2-13/16
1-1/2 x 3	3-5/8
1-1/2 x 4	3-1/16
2 x 2	2-9/16
2 x 3	3-1/2
2 x 4	3-1/16
3 x 3	3-1/4
3 x 4	3
4 x 4	2-15/16
3 x 4 eccentric	3-9/16

22-1/2° DWV Elbow
Copper to Copper

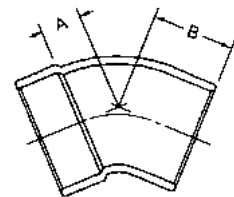


C x C

Nominal Size in inches	Dim. A
1-1/4	3/16
1-1/2	1/4
2	5/16
3	3/4
4	13/16

* Wrought Copper Only **Cast Bronze Only

45° DWV Street Elbow
Fitting to Copper

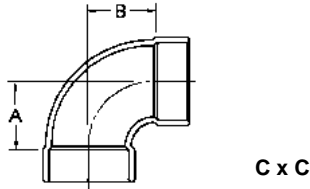


Ftg x C

Nominal Size in inches	Dim. A	Dim. B
*1-1/4	11/16	11/16
*1-1/2	1	1
*2	1-3/16	1-3/16
*3	1-1/8	1-1/8
**4	1-7/16	1-7/16

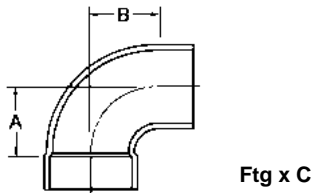
Cello ELBOWS & Y'S-DWV

90° DWV Elbow
Copper to Copper



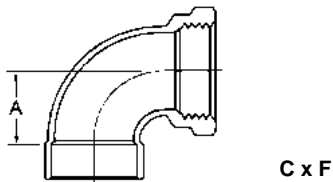
Nominal Size in inches	Dim. A	Dim. B
*1-1/4	1	1
*1-1/2	1-5/16	1-5/16
*2	1-15/16	1-15/16
3	3-9/16	3-9/16
**4	3-7/8	3-7/8
**1-1/2 x 1-1/4	1	1-3/16
**2 x 1-1/4	1-1/4	1-1/2
**2 x 1-1/2	1-1/4	1-3/8

90° DWV Street Elbow
Fitting to Copper



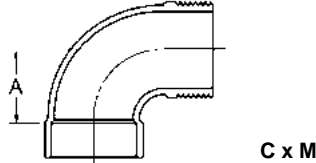
Nominal Size in inches	Dim. A	Dim. B
*1-1/4	1-1/4	1-11/16
*1-1/2	1-3/8	2-3/16
*2	1-5/8	2-9/16
*3	2-1/2	3-1/4
**4	3-5/16	4-3/8

90° DWV CxF Elbow
Copper to Female



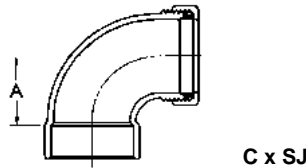
Nominal Size in inches	Dim. A
1-1/4	1-1/2
1-1/2	1-3/4
2	1-7/8
3	2-3/4

90° DWV CxM Elbow
Copper to Male NPT



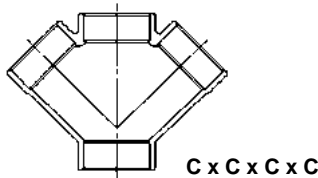
Nominal Size in inches	Dim. A
1-1/4	1-1/2
1-1/2	1-3/4
2	2

90° DWV CxSJ Elbow
Copper to Slip Joint



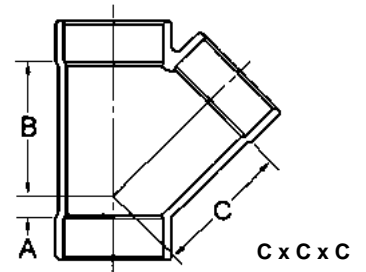
Nominal Size in inches	Dim. A
1-1/4	1-1/2
1-1/2	1-3/4
2	2
1-1/2 x 1-1/4	1-3/4

45° DWV Double Y
Copper to Copper to Copper to Copper



Nominal Size in inches
1-1/4
1-1/2
2
3
1-1/2 x 1-1/2 x 1-1/4 x 1-1/4
1-1/2 x 1-1/4 x 1-1/2 x 1-1/2
2 x 2 x 1-1/4 x 1-1/4
2 x 2 x 1-1/2 x 1-1/2
3 x 3 x 1-1/4 x 1-1/4
3 x 3 x 1-1/2 x 1-1/2
3 x 3 x 2 x 2

45° DWV Y
Copper to Copper to Copper

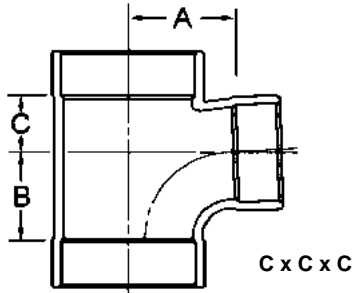


Nominal Size in inches	Dim. A	Dim. B	Dim. C
1-1/4	1/4	1-3/4	1-11/16
1-1/2	5/16	2-3/16	2-1/8
2	1/2	2-11/16	2-3/8
3	11/16	4-5/16	4-5/16
4	11/16	5-1/8	5-1/2
1-1/2 x 1-1/4 x 1-1/4	1/8	1-7/8	1-7/8
1-1/2 x 1-1/4 x 1-1/2	4/16	1-3/4	1-3/4
1-1/2 x 1-1/2 x 1-1/4	1/4	2	2
2 x 1-1/4 x 1-1/4	3/8	2-5/16	2-1/16
2 x 1-1/4 x 1-1/2	4/16	2-5/16	2-1/8
2 x 1-1/4 x 2	7/16	2-5/8	2-3/8
2 x 1-1/2 x 1-1/4	1/4	2-1/2	2-1/8
2 x 1-1/2 x 1-1/2	1/8	2-3/16	2-3/16
2 x 1-1/2 x 2	1/4	2-1/8	2-1/4
2 x 2 x 1-1/4	9/16	2-5/8	2-3/8
2 x 2 x 1-1/2	3/8	1-7/8	2-1/8
3 x 3 x 1-1/4	—	2-7/8	3-1/4
3 x 3 x 1-1/2	—	2-13/16	3-1/4
3 x 3 x 2	3/16	3-1/8	3-5/16
4 x 4 x 1-1/2	—	3-1/4	3-13/16
4 x 4 x 2	1/16	3-1/4	3-3/8
4 x 4 x 3	5/16	4-1/4	4-3/16

* Wrought Copper Only
** Cast Bronze Only

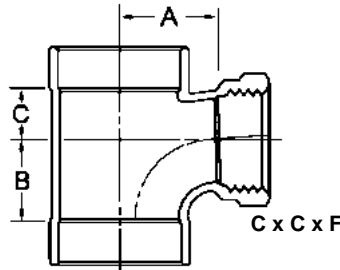
Cello  **TY'S-DWV**

90° DWV TY
Copper to Copper to Copper



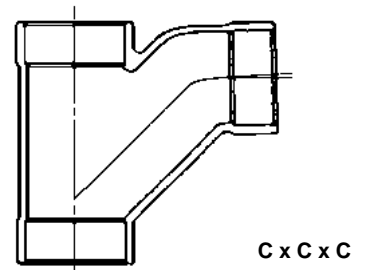
Nominal Size in inches	Dim. A	Dim. B	Dim. C
1-1/4	1-5/16	1-1/16	11/16
1-1/2	1-5/16	1-3/8	11/16
2	1-13/16	1-11/16	15/16
3	2-1/4	2-7/16	1-3/8
4	3-3/4	3-3/4	2-1/8
1-1/2 x 1-1/4 x 1-1/4	1-3/16	1-1/4	3/4
1-1/2 x 1-1/4 x 1-1/2	1-3/8	1-1/4	3/4
1-1/2 x 1-1/2 x 1-1/4	1-1/4	1-1/8	5/8
2 x 1-1/4 x 1-1/4	1-5/8	1-5/16	7/8
2 x 1-1/4 x 1-1/2	1-5/8	1-1/4	15/16
2 x 1-1/4 x 2	1-5/8	1-3/4	1-3/8
2 x 1-1/2 x 1-1/4	1-3/8	1-3/8	3/4
2 x 1-1/2 x 1-1/2	1-1/2	1-1/4	15/16
2 x 1-1/2 x 2	2-1/16	1-15/16	1-1/16
2 x 2 x 1-1/4	1-3/8	1-1/8	3/4
2 x 2 x 1-1/2	1-5/8	1-3/8	3/4
3 x 1-1/2 x 1-1/4	2-5/16	1-5/16	3/8
3 x 2 x 1-1/2	1-7/8	1-5/8	1
3 x 3 x 1-1/4	2-1/8	1-1/8	3/4
3 x 3 x 1-1/2	2-1/8	1-7/16	3/4
3 x 3 x 2	2-3/16	1-9/16	1-1/4
4 x 4 x 1-1/2	2-3/4	1-3/8	13/16
4 x 4 x 2	2-7/8	1-13/16	1-1/16
4 x 4 x 3	3-3/8	2-3/4	1-5/8

DWV-Female TY
Copper to Copper to Female NPT



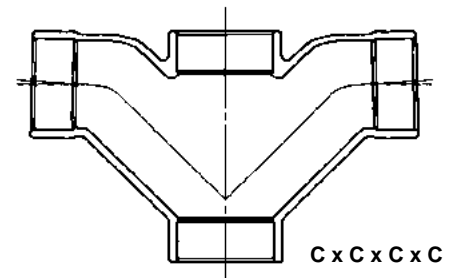
Nominal Size in inches	Dim. A	Dim. B	Dim. C
1-1/4	—	—	—
1-1/2	1-5/16	1-7/16	3/4
2	—	—	—
2 x 1-1/2 x 1-1/2	1-5/8	1-5/16	7/8

DWV-Long Turn TY
Copper to Copper to Copper



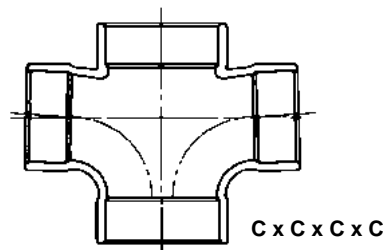
Nominal Size in inches
1-1/2

DWV-Double Long Turn TY
Copper to Copper to Copper to Copper



Nominal Size in inches
1-1/4
1-1/2
2
1-1/2 x 1-1/2 x 1-1/4 x 1-1/4
2 x 2 x 1-1/4 x 1-1/4
2 x 2 x 1-1/2 x 1-1/2

DWV-Double TY
Copper to Copper to Copper to Copper

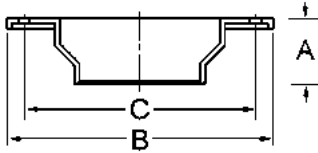


Nominal Size in inches
1-1/4
3/4
1-1/2
2
3
1-1/2 x 1-1/4 x 1-1/4 x 1-1/4
1-1/2 x 1-1/4 x 1-1/2 x 1-1/2
1-1/2 x 1-1/2 x 1-1/4 x 1-1/4
2 x 2 x 1-1/4 x 1-1/4
2 x 2 x 1-1/2 x 1-1/2
3 x 3 x 1-1/4 x 1-1/4
3 x 3 x 1-1/2 x 1-1/2
3 x 3 x 2 x 2



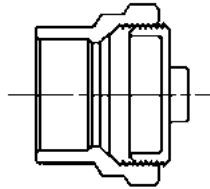
CLOSET FLANGES, CLEANOUTS & TRAPS-DWV

DWV-Closet Flange
Copper to Closet



Nominal Size in inches	Dim. A	Dim. B	Dim. C
3	2-1/8	6-15/16	5-3/4
4	7/8	6-7/8	6
3 eccentric	1-3/4	6-1/2	5-1/2
3 fitting	2	6-7/8	6
3 fitting eccentric	1-3/4	6-1/2	5-1/2
3 MJ	2	6-7/8	6
4 caulking	1-5/8	6-9/16	5-3/4
4 lead, 8 oz	1/4	6-1/2	5-3/8
4 lead, 14 oz	1/8	6-13/16	5-7/8

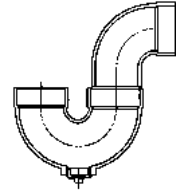
DWV-Tube End Cleanout
Copper to Cleanout with Plug



C x c/o

Nominal Size in inches
1-1/4
1-1/2
2
3
4

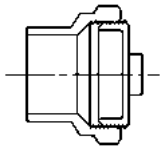
DWV- P Trap With Cleanout
Copper to Copper with Cleanout



C x C x c/o

Nominal Size in inches
1-1/4
1-1/2
2
3

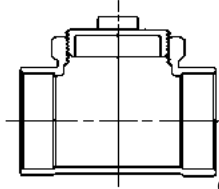
DWV-Fitting Cleanout
Fitting to Cleanout With Plug



Ftg x c/o

Nominal Size in inches
1-1/4
1-1/2
2
3
4

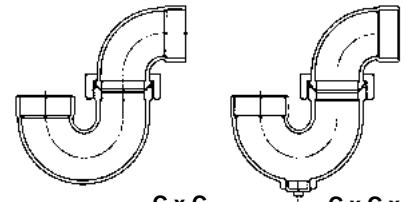
DWV-Line Cleanout (Test Tee)
Copper to Copper Cleanout with Plug



C x C x c/o

Nominal Size in inches
1-1/4
1-1/2
2
3
4

DWV- P Trap-Ground Swivel Joint
Copper to Copper

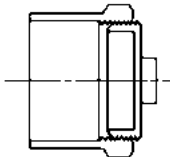


C x C

C x C x c/o

Nominal Size in inches
1-1/2 Less Cleanout
1-1/2 With Cleanout

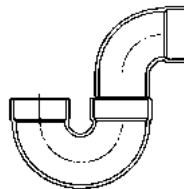
DWV-Flush Fitting Cleanout
Fitting to Cleanout With Plug



Ftg x c/o

Nominal Size in inches
1-1/4 x 3/4
1-1/2 x 1
2 x 1-1/2
3 x 2-1/2
4 x 3

DWV- P Trap Less Cleanout
Copper to Copper



C x C

Nominal Size in inches
1-1/4
1-1/2
2
3

DWV-Test Cap

Copper



Nominal Size in inches
1/2
3/4
1
1-1/4
1-1/2
2
3