

## CTS Fittings Fig. 601, 610, 618, 619, 621, 650, 652, 660



### Material Specifications

#### Cast Copper Alloy Fittings

Copper Alloy conforming to CDA C89833 or C83470

#### Wrought Copper Fittings

(For Figure 652 Groove by Copper Fittings Only)

ASTM B 75 C12200; wall thickness per ASTM B 88 Type L.

#### Maximum Working Pressure

Fittings are rated at the pressure rating of the Gruvlok Coupling or Adapter in use.

Gruvlok Full-Flow Grooved Fittings for Copper Piping Systems provide an economical and efficient method of changing direction. These copper fittings are available in sizes 2" to 8" (50 - 200mm).

Cast fittings in 90° and 45° elbows, tees, caps, concentric reducers, and reducing tees are cast with a copper alloy conforming to CDA C89833. Cast fittings are stronger and more durable than wrought copper fittings and are less susceptible to damage in transit or during installation. Reducing fittings are available with Groove x Groove or Groove x Cup End configurations.

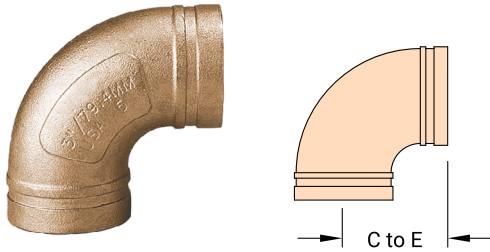
Fittings are standard radius, full flow, designed for installation with Gruvlok Copper System products.

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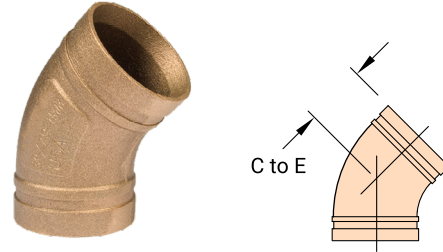


PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

**Fig. 610**  
90° CTS Elbow



**Fig. 601**  
45° CTS Elbow



Nominal Size	Copper Tubing O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
2	2.125	2.91	1.9
50	54.0	73.9	0.9
2½	2.625	3.31	2.7
65	66.7	84.1	1.2
3	3.125	3.81	3.6
80	79.4	96.8	1.6
4	4.125	4.75	7.1
100	104.8	120.7	3.2
5	5.125	5.94	11.9
125	130.2	150.9	5.4
6	6.125	6.94	16.7
150	155.6	176.7	7.6
8	8.125	7.75	25.3
200	206.4	196.9	11.5

Nominal Size	Copper Tubing O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
2	2.125	2.19	1.6
50	54.0	55.6	0.7
2½	2.625	2.31	2.1
65	66.7	58.7	1.0
3	3.125	2.59	2.7
80	79.4	65.8	1.2
4	4.125	3.19	5.5
100	104.8	81.0	2.5
5	5.125	3.25	7.7
125	130.2	82.6	3.5
6	6.125	3.50	10.1
150	155.6	88.9	4.6
8	8.125	4.25	16.6
200	206.4	108.0	7.5

**Note:**

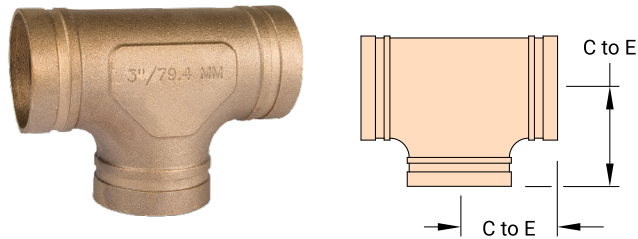
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See page 1 for CTS Fitting Specifications.



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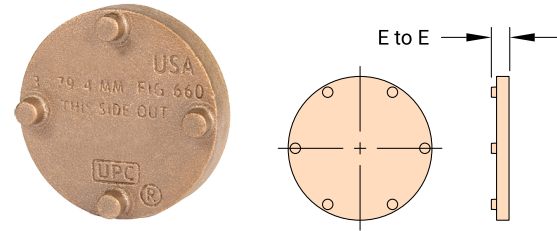
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**Fig. 619**  
CTS Tee



Nominal Size	Copper Tubing O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
2	2.125	2.69	2.5
50	54.0	68.3	1.1
2½	2.625	3.20	3.8
65	66.7	81.3	1.7
3	3.125	3.52	4.7
80	79.4	89.4	2.1
4	4.125	4.25	9.0
100	104.8	108.0	4.1
5	5.125	5.94	17.7
125	130.2	150.9	8.0
6	6.125	6.94	24.8
150	155.6	176.3	11.3
8	8.125	7.75	46.2
200	206.4	196.9	21.0

**Fig. 660**  
CTS Cap



Nominal Size	Copper Tubing O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
2	2.125	0.92	0.6
50	54.0	23.4	0.3
2½	2.625	0.92	1.0
65	66.7	23.4	0.4
3	3.125	0.92	1.3
80	79.4	23.4	0.6
4	4.125	0.92	2.2
100	104.8	23.4	1.0
5	5.125	0.92	5.8
125	130.2	23.4	2.6
6	6.125	0.92	8.1
150	155.6	23.4	3.7
8	8.125	1.03	14.1
200	206.4	26.2	6.4

**Note:**

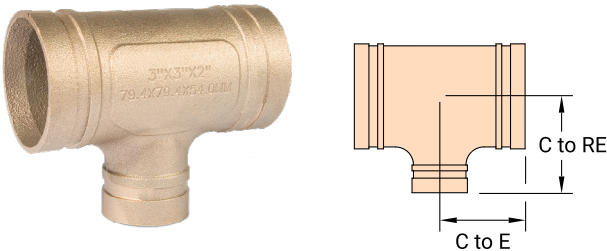
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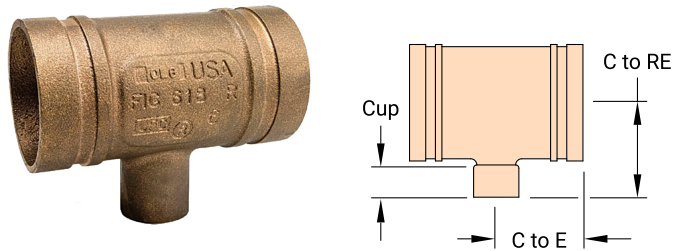
**Fig. 621**  
CTS Reducing Tee



Nominal Size	Copper Tubing O.D.	C to E	C to RE	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	In./mm	Lbs./kg
2½ x 2½ x 2 65 x 65 x 50	2.625 x 2.625 x 2.125 66.7 x 66.7 x 54.0	3.28 83.3	3.5 1.6	1.6 50
3 x 3 x 2 80 x 80 x 50	3.125 x 3.125 x 2.125 79.4 x 79.4 x 54.0	3.00 76.2	3.8 1.7	1.6 50
3 x 3 x 2½ 80 x 80 x 65	3.125 x 3.125 x 2.625 79.4 x 79.4 x 66.7	3.25 82.6	4.3 2.0	1.6 50
4 x 4 x 2 100 x 100 x 50	4.125 x 4.125 x 2.125 104.8 x 104.8 x 54.0	3.66 93.0	6.9 3.2	1.6 50
4 x 4 x 2½ 100 x 100 x 65	4.125 x 4.125 x 2.625 104.8 x 104.8 x 66.7	3.94 100.1	7.5 3.4	1.6 50
4 x 4 x 3 100 x 100 x 80	4.125 x 4.125 x 3.125 104.8 x 104.8 x 79.4	4.19 106.4	8.7 4.0	1.6 50
5 x 5 x 3 125 x 125 x 80	5.125 x 5.125 x 3.125 130.2 x 130.2 x 79.4	3.75 95.3	10.0 4.5	1.6 50
5 x 5 x 4 125 x 125 x 100	5.125 x 5.125 x 4.125 130.2 x 130.2 x 104.8	4.25 108.0	11.4 5.2	1.6 50
6 x 6 x 2½ 150 x 150 x 65	6.125 x 6.125 x 2.625 155.6 x 155.6 x 66.7	3.63 92.2	11.5 5.2	1.6 50
6 x 6 x 3 150 x 150 x 80	6.125 x 6.125 x 3.125 155.6 x 155.6 x 79.4	3.69 93.7	11.9 5.4	1.6 50
6 x 6 x 4 150 x 150 x 100	6.125 x 6.125 x 4.125 155.6 x 155.6 x 104.8	4.19 106.4	13.7 6.2	1.6 50
6 x 6 x 5 150 x 150 x 125	6.125 x 6.125 x 5.125 155.6 x 155.6 x 130.2	4.69 119.1	15.9 7.2	2.0 50

**Note:**  
Dimensional information in this chart is for cast fittings.

**Fig. 618**  
CTS Reducing Tee (Groove x Groove x Cup)



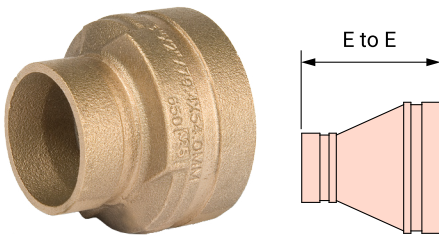
Nominal Size	Copper Tubing O.D.	C to E	C to RE	Cup	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	In./mm	In./mm	Lbs./kg
2 x 2 x ¾ 50 x 50 x 20	2.125 x 2.125 x 0.825 54.0 x 54.0 x 21.0	2.20 55.9	2.04 51.8	0.75 19.0	1.6 0.7
2 x 2 x 1 50 x 50 x 25	2.125 x 2.125 x 1.125 54.0 x 54.0 x 25.4	2.33 59.1	2.26 57.4	0.91 23.1	1.8 0.8
2 x 2 x 1¼ 50 x 50 x 32	2.125 x 2.125 x 1.375 54.0 x 54.0 x 34.9	2.48 63.0	2.41 61.2	0.97 24.6	2.0 0.9
2 x 2 x 1½ 50 x 50 x 40	2.125 x 2.125 x 1.625 54.0 x 54.0 x 38.1	2.55 64.7	2.34 59.4	1.09 27.7	2.0 0.9
2½ x 2½ x ¾ 65 x 65 x 20	2.625 x 2.625 x 0.875 66.7 x 66.7 x 21.0	2.27 57.7	2.24 57.0	0.75 19.0	2.2 1.0
2½ x 2½ x 1 65 x 65 x 25	2.625 x 2.625 x 1.125 66.7 x 66.7 x 25.4	2.40 61.0	2.46 62.5	0.91 23.1	2.3 1.0
2½ x 2½ x 1¼ 65 x 65 x 32	2.625 x 2.625 x 1.375 66.7 x 66.7 x 34.9	2.52 64.0	2.63 66.8	0.97 24.6	2.5 1.1
2½ x 2½ x 1½ 65 x 65 x 40	2.625 x 2.625 x 1.625 66.7 x 66.7 x 38.1	2.70 68.6	2.74 69.6	1.09 27.7	2.7 1.2
3 x 3 x ¾ 80 x 80 x 20	3.125 x 3.125 x 0.875 79.4 x 79.4 x 21.0	2.45 62.2	2.64 67.1	0.75 19.0	2.9 1.3
3 x 3 x 1 80 x 80 x 25	3.125 x 3.125 x 1.125 79.4 x 79.4 x 25.4	2.54 64.5	2.85 72.4	0.91 23.1	3.0 1.4
3 x 3 x 1¼ 80 x 80 x 32	3.125 x 3.125 x 1.375 79.4 x 79.4 x 34.9	2.63 66.8	2.95 74.9	0.97 24.6	3.1 1.4
3 x 3 x 1½ 80 x 80 x 40	3.125 x 3.125 x 1.625 79.4 x 79.4 x 38.1	2.85 72.4	3.06 77.7	1.09 27.7	3.4 1.5
4 x 4 x ¾ 100 x 100 x 20	4.125 x 4.125 x 0.875 104.8 x 104.8 x 21.0	2.95 74.9	3.06 77.7	0.75 19.0	5.2 2.4
4 x 4 x 1 100 x 100 x 25	4.125 x 4.125 x 1.125 104.8 x 104.8 x 25.4	3.10 78.7	3.28 83.3	0.91 23.1	5.5 2.6
4 x 4 x 1¼ 100 x 100 x 32	4.125 x 4.125 x 1.375 104.8 x 104.8 x 34.9	3.25 82.5	3.53 89.7	0.97 24.6	5.7 2.6
4 x 4 x 1½ 100 x 100 x 40	4.125 x 4.125 x 1.625 104.8 x 104.8 x 38.1	3.35 85.1	3.71 94.2	1.09 27.7	6.1 2.8



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**Fig. 650**  
CTS Concentric Reducer



Nominal Size	Copper Tubing O.D.	End to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
2½ x 2 65 x 50	2.625 x 2.125 66.7 x 54.0	3.29 83.6	1.4 0.6
3 x 2 80 x 50	3.125 x 2.125 79.4 x 54.0	2.50 63.5	1.4 0.6
3 x 2½ 80 x 65	3.125 x 2.625 79.4 x 66.7	2.50 63.5	1.4 0.6
4 x 2 100 x 50	4.125 x 2.125 104.8 x 54.0	4.75 120.7	3.0 1.4
4 x 2½ 100 x 65	4.125 x 2.625 104.8 x 66.7	3.00 76.2	2.3 1.1
4 x 3 100 x 80	4.125 x 3.125 104.8 x 79.4	3.00 76.2	2.3 1.1
5 x 3 125 x 80	5.125 x 3.125 130.2 x 79.4	3.88 98.6	3.7 1.7
5 x 4 125 x 100	5.125 x 4.125 130.2 x 104.8	3.38 85.9	3.7 1.7
6 x 3 150 x 80	6.125 x 3.125 155.6 x 79.4	4.38 111.3	5.1 2.3
6 x 4 150 x 100	6.125 x 4.125 155.6 x 104.8	3.88 98.6	5.2 2.4
6 x 5 150 x 125	6.125 x 5.125 155.6 x 130.2	3.38 85.9	4.8 2.2
8 x 6 200 x 150	8.125 x 6.125 206.4 x 155.6	5.00 127	9.7 4.4

**Fig. 652**  
CTS Concentric Reducer (Groove x Cup)



Nominal Size	Copper Tubing O.D.	End to End	Cup	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm		Lbs./kg
2 x 1 50 x 25	2.125 x 1.125 54.0 x 25.4	2.70 68.6	0.91 23.1	0.5 0.2
2 x 1¼ 50 x 32	2.125 x 1.375 54.0 x 34.9	3.00 76.2	0.97 24.6	0.4 0.2
2 x 1½ 50 x 40	2.125 x 1.625 54.0 x 38.1	2.94 74.7	1.09 27.7	0.4 0.2
2½ x 1 65 x 25	2.625 x 1.125 66.7 x 25.4	3.25 82.6	0.91 23.1	0.5 0.2
2½ x 1¼ 65 x 32	2.625 x 1.375 66.7 x 34.9	3.52 89.4	0.97 24.6	0.6 0.3
2½ x 1½ 65 x 40	2.625 x 1.625 66.7 x 38.1	3.45 87.6	1.09 27.7	0.6 0.3
2½ x 2 65 x 50	2.625 x 2.125 66.7 x 54.0	3.38 85.9	1.34 34.0	0.6 0.3
3 x 1½ 80 x 40	3.125 x 1.625 79.4 x 38.1	3.68 93.5	1.09 27.7	0.7 0.3
3 x 2 80 x 50	3.125 x 2.125 79.4 x 54.0	4.10 104.1	1.34 34.0	1.0 0.5
4 x 2 100 x 50	4.125 x 2.125 104.8 x 54.0	4.75 120.7	1.34 34.0	1.4 0.6

**Note:**

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