Specifications

All of the advantages found in copper as a metal have been capitalized to the utmost in the manufacture of NIBCO® Fittings. Because of the accuracy of construction and design, copper plumbing is more efficient and less expensive.

NIBCO manufactures nine general types of fittings: Wrot Pressure; Cast Pressure; Wrot Drainage; Cast Drainage; Flanges; Flared Tube; Threaded Bronze; Insert Fittings for PEX; Barbed Insert Fittings for Polybutylene. Each has its particular place and use and each offers its own advantages when used for the proper service requirement.

Material & Construction — NIBCO Fittings are made from the highest quality raw materials — Cast Fittings are offered in traditional copper alloys C83600, and C84400 and high quality lead-free* dezincification-resistant (DZR) silicon bronze alloy C87850 cast or 69300 forged Performance Bronze™ per ASTM Specification B584. Wrot Copper Fittings are made from commercially pure copper mill products already meeting current lead-free* requirements per ASTM Specifications B75 Alloy C12200.

Lead Free refers to the wetted surface of pipe, fittings and fixtures in potable water systems that have a weighted average lead content ≤ 0.25%.

NIBCO Fittings are produced to meet the requirements of applicable standards.

The majority of NIBCO® brand wrot and cast fittings are manufactured in the U.S.A. and Mexico*. The manufacturing plants at Stuarts Draft, VA, Nacogdoches, TX and Reynosa, Mexico are registered to ISO 9001 quality standards.

Following is suggested phrasing to be incorporated in your specifications or bills of material for Copper Tube Fittings.

WROT SOLDER JOINT FITTINGS — "Solder Joint Fittings shall be produced to one of the following specifications:

1. "Material and workmanship shall be in accordance with ASME/ANSI B16.22; Wrought Copper and Copper Allo y Solder Joint Pressure Fittings."
2. "The dimensional, material and workmanship shall meet the requirements of MSS SP-104; Wrought Copper Solder Joint Pressure Fittings."
3. "The dimensional, material and workmanship of 5"–12" copper fittings shall meet the requirements of MSS SP-109 "Welded Fabricated Copper Solder Joint Pressure Fittings."
4. "Third party certified to NSF/ANSI61."
5. "Lead-free* fittings are third party certified to NSF/ANSI 61

CAST COPPER ALLOY SOLDER JOINT FITTINGS — "Cast Copper Alloy Solder Joint Fittings shall be in accordance with ASME B16.18."

WROT DRAINAGE FITTINGS — "Wrot Drainage Fittings shall be in accordance with ASME B16.29."

CAST COPPER ALLOY SOLDER JOINT DRAINAGE FITTINGS — "Cast Copper Alloy Solder Joint Drainage Fittings shall be in accordance with ASME B16.23."

CAST COPPER ALLOY FLARED TUBE FITTINGS — "Cast Copper Alloy Flared Tube Fittings shall be in accordance with ASME B16.26."

CAST COPPER ALLOY FLANGES AND FLANGED FITTINGS —

CLASS 150 — "Cast Copper Alloy Flanges and Flanged Fittings shall meet the requirements of MSS SP-106" and/or "the workmanship and dimensions of Federal Specifications WW-F-406 or ASME Std. B16.24."

"CLASS 125 — Material, workmanship and dimensions of flanges shall be in accordance with MSS SP-106."

CAST BRONZE THREADED FITTINGS — "Cast Bronze Threaded Fittings shall be in accordance with ASME B16.15."

POLYBUTYLENE COPPER INSERT TYPE VALVES AND FITTINGS — "Wrot Copper Insert Fittings shall be manufactured per MSS SP-103."

NIBCO® Copper Tube Fittings are all produced to above Standards. To simplify, write your specifications to read: "Copper Tube Fittings to be in accordance with specifications as outlined in NIBCO Copper Fittings Catalog."

WROT COPPER MEDICAL GAS SYSTEM COMPONENTS — "Wrot copper fittings that are to be installed in medical gas applications shall be prepared in accordance with NFPA 99, Health Care Facilities Gas and Vacuum Systems and the Compressed Gas Association, Pamphlet G4.1. Packaging shall be adequately protective and include labeling that identifies the preparer and states that the product has been cleaned and bagged for oxygen or med gas service."

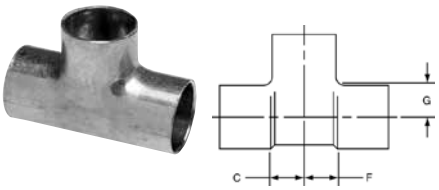
For technical information and dimensions refer to the engineering section contained in this catalog.

* NIBCO, may, from time to time, source and/or supplement a wrot or cast fitting product from suppliers outside of the U.S.A. and/or Mexico.

Visit our website for the most current information.

NIBCO INC. WORLD HEADQUARTERS • 1516 MIDDLEBURY ST. • ELKHART, IN 46516-4740 • USA • PH: 1.800.234.0227
TECH SERVICES PH: 1.888.446.4226 • FAX: 1.888.234.0557 • INTERNATIONAL OFFICE PH: +1.574.295.3327 • FAX: +1.574.295.3455
www.nibco.com

TEES *continued*



611
Tee C x C x C – Wrot continued

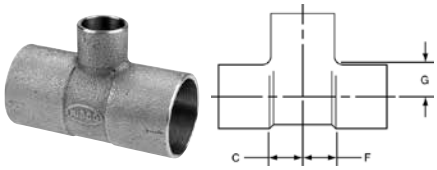
NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES C	F	G
5	8.29	2 27/32	2 27/32	3 13/32
5 x 2 x 5	9.47	2 27/32	5 29/32	3 13/32
5 x 4 x 4	8.18	2 1/4	4 17/32	3 3/8
5 x 4 x 5	8.58	2 27/32	4 29/32	3 13/32
5 x 5 x 1	4.20	23/32	23/32	3 3/16
5 x 5 x 1 1/4	4.76	1 7/32	1 7/32	3 3/16
5 x 5 x 1 1/2	4.88	1 1/32	1 1/32	3 3/16
5 x 5 x 2	5.30	1 9/32	1 9/32	3 3/16
5 x 5 x 2 1/2	5.91	1 5/8	1 5/8	3 3/16
5 x 5 x 3	5.91	1 25/32	1 25/32	3 3/16
5 x 5 x 4	7.10	2 9/32	2 9/32	3 3/16
6	13.50	3 9/32	3 9/32	4 1/32
6 x 4 x 1 1/2	9.62	13/16	3 27/32	3 11/16
6 x 4 x 4	11.37	2 9/32	5 3/32	3 11/16
6 x 4 x 6	16.60	3 9/32	6 5/32	4 1/32
6 x 6 x 1/2	7.17	15/16	15/16	4 11/16
6 x 6 x 3/4	7.19	15/16	15/16	4 21/32
6 x 6 x 1	7.18	15/16	15/16	3 11/16
6 x 6 x 1 1/4	6.67	29/32	29/32	3 11/16
6 x 6 x 1 1/2	6.87	1	1	3 11/16
6 x 6 x 2	7.78	1 9/32	1 9/32	3 11/16
6 x 6 x 2 1/2	8.12	1 17/32	1 17/32	3 3/4
6 x 6 x 3	8.92	1 25/32	1 25/32	3 11/16
6 x 6 x 4	10.17	2 9/32	2 9/32	3 11/16
6 x 6 x 5	11.67	2 25/32	2 25/32	4 1/32
8	36.81	4 17/32	4 17/32	5 1/32
8 x 8 x 2	18.02	1 9/32	1 9/32	4 3/4
8 x 8 x 2 1/2	19.02	1 17/32	1 17/32	4 3/4
8 x 8 x 3	20.02	1 25/32	1 25/32	4 3/4
8 x 8 x 4	22.26	2 9/32	2 9/32	4 1/2
8 x 8 x 5	24.90	2 25/32	2 25/32	4 15/16
8 x 8 x 6	27.86	3 9/32	3 9/32	5 1/8

NOTE: Tee sizes are read Run x Run x Outlet.

Consult price sheet for Made to Order items and for minimum order quantities.

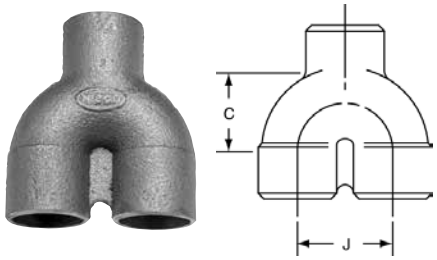
611-HE
Heat Exchanger Tee
C x C x C – Wrot

Tube slips entirely through fitting on small end of run. Sizes same as listed under 611 where tee has one or more reductions on one end of run.



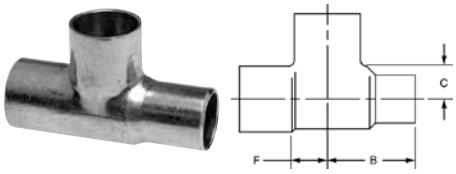
711
Tee C x C x C – Cast

NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES C	F	G
1 1/4 x 1/2 x 1/2	0.50	5/8	27/32	1/2
▲ 1 1/4 x 1/2 x 1	0.48	3/4	3/4	3/8
1 1/2 x 1/2 x 1 1/4	0.70	7/8	31/32	1/2
2 x 3/4 x 3/4	0.82	21/32	7/8	1/2
2 x 1 x 1 1/2	1.23	1	1 1/4	5/8
2 x 2 x 3	3.11	1 21/32	1 21/32	1 3/16
2 1/2 x 1/2 x 2 1/2	2.46	1 1/2	2 7/32	1/2
2 1/2 x 1 1/2 x 1 1/2	1.76	1	1 7/32	7/8
2 1/2 x 1 1/2 x 2	2.02	1 1/4	1 15/32	7/8
2 1/2 x 2 1/2 x 3	2.98	1 3/4	1 3/4	1 13/32
3 x 2 x 1 1/2	2.63	1	1 1/4	1 5/32
3 x 2 1/2 x 1 1/2	2.53	1	1 3/32	1 13/32
3 x 3 x 4	6.96	2 11/32	2 11/32	1 23/32
4 x 2 x 2	4.64	1 1/4	1 3/4	2 5/32



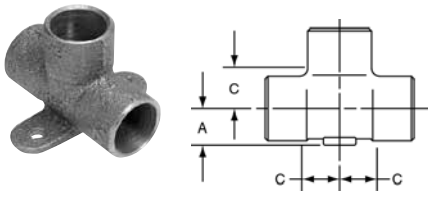
711-A
Supply and Return Tee
C x C x C – Cast

NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES C	J
1/2	0.17	13/16	1



611-2
Fitting Tee C x Ftg x C – Wrot

NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES B	C	F
1/2	0.07	1 1/32	3/8	15/32
3/4	0.15	1 13/32	1/2	1/2



711-5
Drop Tee C x C x C – Cast

NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES A	C
▲ 1/2	0.16	3/8	7/16

▲ Also available in Lead-Free*. For additional details, see our Lead-Free* literature on www.nibco.com.

*Weighted average lead content ≤ 0.25%

Visit our website for the most current information.

RATED INTERNAL WORKING PRESSURE[1] FOR COPPER FITTINGS, PSI (BAR)

Nominal Water Tube Size (In Inches)	Water Temperature Range						
	-20° to 100°F (-29° to 38°C)	150°F (66°C)	200°F (95°C)	250°F (120°C)	300°F (149°C)	350°F (177°C)	400°F (204°C)
1/4	912 (62)	775 (53)	729 (50)	729 (50)	714 (49)	608 (42)	456 (31)
3/8	779 (54)	662 (46)	623 (43)	623 (43)	610 (42)	519 (36)	389 (27)
1/2	722 (50)	613 (42)	577 (40)	577 (40)	565 (39)	481 (33)	361 (25)
5/8	631 (43)	537 (37)	505 (35)	505 (35)	495 (34)	421 (29)	316 (21)
3/4	582 (40)	495 (34)	466 (32)	466 (32)	456 (31)	388 (27)	291 (20)
1	494 (34)	420 (29)	395 (27)	395 (27)	387 (26)	330 (23)	247 (17)
1 1/4	439 (30)	373 (26)	351 (24)	351 (24)	344 (23)	293 (20)	219 (15)
1 1/2	408 (28)	347 (24)	327 (23)	327 (23)	320 (22)	272 (19)	204 (14)
2	364 (25)	309 (21)	291 (20)	291 (20)	285 (20)	242 (17)	182 (13)
2 1/2	336 (23)	285 (20)	269 (19)	269 (19)	263 (18)	224 (15)	168 (12)
3	317 (22)	270 (19)	254 (17)	254 (17)	248 (17)	211 (15)	159 (11)
3 1/2	304 (21)	258 (18)	243 (17)	243 (17)	238 (16)	202 (14)	152 (10)
4	293 (20)	249 (17)	235 (16)	235 (16)	230 (16)	196 (13)	147 (10)
5	269 (19)	229 (16)	215 (15)	215 (15)	211 (15)	179 (12)	135 (9)
6	251 (17)	213 (15)	201 (14)	201 (14)	196 (14)	167 (12)	125 (8)
8	270 (19)	230 (16)	216 (15)	216 (15)	212 (15)	180 (12)	135 (9)

[1] The fitting pressure rating applies to the largest opening of the fitting.

RATED INTERNAL WORKING PRESSURES OF CAST COPPER ALLOY FLANGES AND FLANGED FITTINGS

Nominal Size Joint (In Inches)	Temperature °F (°C) [A]	Pressure (PSI)		
		Class 125 [A, B]	Class 150 [B]	Class 150 [A, C]
1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3, 4, 5, 6, 8 (also 10" for Class 125)	0 – 150 (0 – 66)	105 (7)	210 (14)	225 (15)
	175 (79)	100 (7)	205 (14)	220 (15)
	200 (93)	95 (7)	195 (13)	210 (15)
	225 (107)	90 (6)	190 (13)	205 (14)
	250 (121)	90 (6)	180 (12)	195 (13)
	275 (135)	85 (6)	175 (12)	190 (13)
	300 (149)	85 (6)	170 (12)	180 (12)
	350 (177)	75 (5)	150 (10)	165 (11)
	406 (208)	70 (5)	140 (9)	150 (10)

[A] MSS SP-106

[B] ASTM B584, UNS C83800 and UNS C84400

[C] ASTM B62, UNS C83600 and ASTM B584, UNS C83600

U.S. customary units in this document are the standard; the metric units are provided for reference only. The values stated in each system are not exact equivalents.

Visit our website for the most current information.

NIBCO INC. WORLD HEADQUARTERS • 1516 MIDDLEBURY ST. • ELKHART, IN 46516-4740 • USA • PH: 1.800.234.0227
TECH SERVICES PH: 1.888.446.4226 • FAX: 1.888.234.0557 • INTERNATIONAL OFFICE PH: +1.574.295.3327 • FAX: +1.574.295.3455
www.nibco.com