Elkhart Products Corporation

For the perfect fit

AIR CONDITIONING AND REFRIGERATION WROT COPPER FITTINGS

MADE IN THE USA

Aalberts Industries

Strengthening Flow Control Market Position in North America

Aalberts Industries is an international group of industrial companies with two, mutually reinforcing, core activities: Industrial Services and Flow Control. The group companies are leading players in their respective markets and constantly strive to strengthen this position.

Flow Control's core activity is the development, production and assembly of products and systems for the distribution and regulation of liquids and gases. There is a continuous focus on a complete portfolio of products for residential new-build, renovation and maintenance, commercial buildings, utility networks, district heating, fire protection and security, irrigation systems, the beer and soft drinks industry, and other industries.

Aalberts Industries' products and systems are supplied worldwide to wholesalers, OEMs, utility companies (water and gas), district heating and various other industries. Due to its complete portfolio, market-oriented regional approach, widespread geographical presence and use of high-quality, efficient production technologies, Aalberts Industries ranks among the global market leaders in this field.

Aalberts Industries continuously strengthens its leading market positions through a combination of profitable organic growth and the selective acquisition of complementary companies that fit within the strategy. At the end of 2009, Aalberts Industries employed around 10,000 people who worked in more than 140 group companies in over 30 countries.

Elkhart Products Corporation

A Proud History, An Exciting Future

From its start in 1940 as a small manufacturer of screw machine products, Elkhart Products Corporation (EPC) has built a reputation for quality products and quality personnel. As the company expanded in the early 1950s and became a fabricator of various copper and aluminum tubular components, it also became known for its innovation and service.

Expansion continued with the purchase of machinery from Chase Brass and Copper Company in the late 1950s and wrot copper tube fittings for the plumbing industry were added to the product line. Growth continued with the construction of plants in Fayetteville, Arkansas and in Geneva, Indiana in the 1960s.

Over the last five years, Elkhart Products has branched into engineered fittings. EPC engineered fitting brands include TECTITE™, CopperBite and CopperLoc™ Sprint push-fit fittings, as well as APOLLOXPRESS™ press-fit fittings.

Today, EPC is part of Aalberts Industries N.V. and enjoys the distinction of being one of the world's largest manufacturers of wrot copper fittings. It's also recognized as a versatile supplier of custom fabricated tubular products to original equipment manufacturers in several industries, including automotive, and air conditioning and refrigeration.

The EPC corporate office in Elkhart, Indiana houses sales, accounting, engineering, data processing and experimental labs. Production activities here include the manufacture of a major portion of the wrot fitting line and the cleaning and boxing of all wrot fittings.

LASCO Fittings, Inc.

Providing the Highest Level of Integrity, Value and Service

In business since 1947, LASCO Fittings, Inc. is the industry leader in the production of plastic pipe fittings. LASCO's vast product line consists of DWV, Schedule 40, Schedule 80 and HVAC fittings, ranging from ½ inch through 12 inch sizes. LASCO is headquartered in a 500,000 square foot state-of-the-art manufacturing facility located in Western Tennessee. This location is ideally located in proximity to the customer base and to the petro-chemical industry for raw material procurement. The company also houses an engineering and machine shop, where tooling, molds and new products are designed and constructed.

Recently, LASCO has expanded their plumbing and industrial product lines in large diameter configurations. In plumbing, DWV is now available through 12 inches, with a complete line of large diameter (molded) wyes. In Schedule 80, the company recently introduced 10 inch and 12 inch PVC fittings.

LASCO services its customer base through distribution centers strategically located throughout the United States. The plumbing product line is readily available through Elkhart Products Corporation, its sister company. Together, Elkhart Products and LASCO can now supply the plumbing market with a complete package of metal and plastic fittings.

Conbraco Industries, Inc.

American-Made Success Since 1928

Conbraco Industries was created when two Detroit-based manufacturers of brass valves and fittings merged in 1928 forming Consolidated Brass Company. The company now known as Apollo® Valves earned a reputation for developing new products to meet emerging market demands.

In 1968, the company introduced its Apollo® Series 70 ball valve to the commercial market. A revolutionary innovation at the time, the product became the most specified ball valve in the world. Line extensions have resulted in new materials, new sizes and new applications for the classic Apollo® ball valve.

Conbraco was founded by Clarence Mosack, grandfather of company executive vice president of sales Cal Mosack, president Glenn Mosack and vice president of marketing Carole Mosack Lee. They assumed control of the company after their father Carl Mosack retired as president in 2001. The Mosack family has led the company for three generations.

Nearly all Apollo® valves are produced in U.S. facilities, including ISO-registered, state-of-the-art foundries and manufacturing facilities in Pageland and Conway, S.C. The company's headquarters is located in Matthews, N.C.

The company is constantly developing and introducing new products. By focusing on problem-solving innovations, U.S.-made quality, and the best delivery and fill rates in the industry, Apollo® Valves will continue to thrive.

Elkhart Products Corporation

ELKHART, IN - Corporate

GENEVA, IN

FAYETTEVILLE, AR

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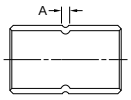
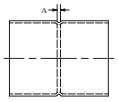
100 Coupling with Stop C x C



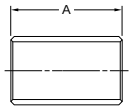
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020622	3/8	0.008	50	1000	3/32			
10020890	1/2	0.015	50	1000	3/32			
10020155	5/8	0.024	100	1000	3/32			
10020156	3/4	0.041	25	500	3/32			
10020157	7/8	0.056	50	500	3/32			
10020992	1	0.009	10	200	3/32			
10020158	1 1/8	0.122	25	250	3/32			
10020159	1 3/8	0.144	20	200	3/32			
10020160	1 5/8	0.216	10	100	3/32			
10020161	2 1/8	0.391	5	50	3/32			
10020162	2 5/8	0.624	5	50	3/32			
10020163	3 1/8	0.909	5	40	3/32			
10020164	3 5/8	1.369	1	16	3/32			
10020165	4 1/8	1.966	2	16	3/32			
10020166	5 1/8	3.365	1	6	3/16			
10020167	6 1/8	5.262	1	6	3/16			
10020168	8 1/8	12.941	1	1	1/8			

100-RS Coupling with Roll Stop C x C



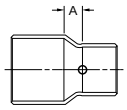
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020109	3/16	0.002	50	1000	1/16			
10020956	1/4	0.004	50	1000	1/16			
10020110	5/16	0.006	50	1000	1/16			
10020694	3/8	0.007	50	1000	3/32			
10020690	1/2	0.015	50	1000	3/32			
10020603	5/8	0.027	100	1000	3/32			
10020604	3/4	0.041	25	500	3/32			
10020122	7/8	0.056	50	500	3/32			
10020606	1	0.084	10	200	3/32			
10020608	1 1/8	0.122	25	250	3/32			
10020610	1 3/8	0.149	20	200	3/32			
10020612	1 5/8	0.213	10	100	3/32			
10020614	2 1/8	0.391	5	50	3/32			

101 Coupling without Stop C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020624	1/4	0.004	50	1000	11/16			
10020169	3/8	0.008	50	1000	23/32			
10020170	1/2	0.015	50	1000	55/64			
10020171	5/8	0.027	100	1000	1 3/32			
10020172	3/4	0.041	25	500	1 21/64			
10020173	7/8	0.056	50	500	1 19/32			
10020174	1 1/8	0.122	25	250	1 29/32			
10020175	1 3/8	0.149	20	200	2 1/32			
10020176	1 5/8	0.213	10	100	2 17/64			
10020616	2 1/8	0.391	5	50	2 49/64			
10020178	2 5/8	0.616	5	50	3 1/32			
10020179	3 1/8	0.912	5	40	3 13/32			
10020180	3 5/8	1.352	1	16	3 29/32			
10020339	4 1/8	1.878	2	16	4 13/32			

101-R Reducer Coupling with Stop C x C

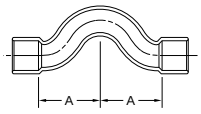


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020991	1/4 x 3/16	0.008	50	1000	3/32			
10020111	5/16 x 1/4	0.007	50	1000	3/32			
10020625	3/8 x 1/4	0.008	50	1000	5/32			
10020112	3/8 x 5/16	0.008	50	1000	3/32			
10020114	1/2 x 1/4	0.019	50	1000	1/4			
10020113	1/2 x 3/8	0.017	50	1000	3/16			
10020117	5/8 x 1/4	0.027	50	1000	23/64			
10020116	5/8 x 3/8	0.026	50	1000	1/4			
10020115	5/8 x 1/2	0.024	50	1000	5/32			
10020120	3/4 x 3/8	0.043	25	500	5/16			
10020119	3/4 x 1/2	0.033	25	500	7/32			
10020118	3/4 x 5/8	0.040	25	500	5/32			
10020125	7/8 x 3/8	0.053	50	500	7/16			
10020124	7/8 x 1/2	0.054	50	500	21/64			
10020123	7/8 x 5/8	0.061	50	500	3/16			
10020121	7/8 x 3/4	0.065	50	500	3/16			

101-R Reducer Coupling with Stop (Continued) C x C

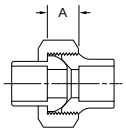
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020129	1⅛ x ½	0.098	25	250	½			
10020128	1⅛ x ⅝	0.104	25	250	7/16			
10020127	1⅛ x ¾	0.102	25	250	⅜			
10020126	1⅛ x ⅞	0.098	25	250	13/32			
10020132	1⅜ x ⅝	0.176	10	100	41/64			
10020131	1⅜ x ⅞	0.134	10	100	15/32			
10020130	1⅜ x 1⅛	0.152	10	100	5/16			
10020136	1⅝ x ⅝	0.219	10	100	25/32			
10020135	1⅝ x ⅞	0.218	10	100	21/32			
10020134	1⅝ x 1⅛	0.220	10	100	7/16			
10020133	1⅝ x 1⅜	0.220	10	100	11/32			
10020141	2⅛ x ⅝	0.420	10	100	1⅛			
10020140	2⅛ x ⅞	0.408	10	100	1			
10020139	2⅛ x 1⅛	0.383	10	100	25/32			
10020138	2⅛ x 1⅜	0.393	10	100	21/32			
10020137	2⅛ x 1⅝	0.366	10	100	13/32			
10020145	2⅝ x 1⅛	0.691	5	50	1⅛			
10020144	2⅝ x 1⅜	0.664	5	50	15/16			
10020143	2⅝ x 1⅝	0.666	5	50	⅞			
10020142	2⅝ x 2⅛	0.639	5	50	15/32			
10020148	3⅛ x 1⅝	1.106	2	20	1 5/32			
10020147	3⅛ x 2⅛	0.991	2	20	13/16			
10020146	3⅛ x 2⅝	0.946	2	20	½			
10020149	3⅝ x 3⅛	1.426	1	16	½			
10020153	4⅛ x 2⅛	2.192	2	32	1½			
10020152	4⅛ x 2⅝	2.029	2	32	1⅛			
10020151	4⅛ x 3⅛	1.940	2	32	⅞			
10020150	4⅛ x 3⅝	1.960	2	32	17/32			
10020154	5⅛ x 4⅛	3.310	1	6	25/32			

136 Cross-Over Coupling C x C



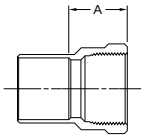
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020544	⅝	0.090	5	50	1 19/64			
10020181	⅞	0.198	5	50	1 23/32			

102 Union C x C



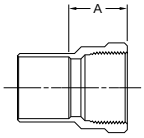
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020333	⅜	0.113	25	500	13/32			
10020594	½	0.131	25	250	27/64			
10020595	⅝	0.114	25	250	½			
10020596	⅞	0.257	20	200	21/32			
10020597	1⅛	0.557	10	100	7/16			
10020598	1⅜	0.698	5	50	7/16			
10020334	1⅝	0.878	5	50	29/64			
10020336	2⅛	1.499	2	20	15/32			

103 Female Adapter C x F



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020000	¼	0.033	50	1000	½			
10020002	⅜	0.043	50	1000	21/32			
10020006	½	0.082	50	500	⅞			
10020012	¾	0.143	25	250	1			

103-R Female Reducing Adapter C x F

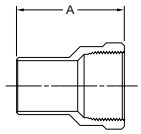


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020500	¼ x ⅛	0.029	50	1000	7/16			
10020003	⅜ x ⅛	0.024	50	1000	11/32			
10020666	⅜ x ¼	0.031	50	1000	15/32			
10020001	⅜ x ½	0.078	50	500	25/32			
10020007	½ x ¼	0.041	50	1000	15/32			
10020004	½ x ⅜	0.052	50	500	19/32			
10020005	½ x ¾	0.121	25	250	¾			
10020011	⅝ x ¼	0.047	50	500	15/32			
10020010	⅝ x ⅜	0.048	50	500	9/16			

103-R Female Reducing Adapter (Continued) C x F

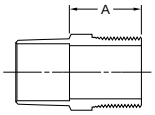
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020008	⅝ x ½	0.093	50	500	⅞			
10020009	⅝ x ¾	0.121	25	250	29/32			
10020013	¾ x ½	0.102	25	250	¾			
10020016	⅞ x ½	0.088	25	250	19/32			
10020014	⅞ x ¾	0.142	25	250	23/32			
10020015	⅞ x 1	0.218	20	200	17/32			
10020020	1⅛ x ½	0.239	10	100	11/16			
10020019	1⅛ x ¾	0.159	25	250	43/64			
10020017	1⅛ x 1	0.226	20	200	31/32			
10020018	1⅛ x 1¼	0.299	10	100	17/32			
10020023	1⅜ x 1	0.238	10	100	55/64			
10020021	1⅜ x 1¼	0.369	10	100	13/32			
10020022	1⅜ x 1½	0.431	10	100	119/64			
10020501	1⅝ x 1¼	0.388	10	100	⅞			
10020024	1⅝ x 1½	0.404	10	100	15/32			
10020025	1⅝ x 2	0.678	5	50	17/16			
10020502	2⅛ x 1½	0.730	5	50	13/16			
10020026	2⅛ x 2	0.667	5	50	1¼			
10020027	2⅝ x 2½	1.228	2	20	1½			

103-2-R Female Reducing Street Adapter FTG x F



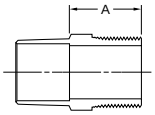
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020028	⅜ x ¼	0.030	50	1000	29/32			
10020029	½ x ⅜	0.049	50	1000	1 1/16			
10020503	⅝ x ¼	0.047	50	500	59/64			
10020177	⅝ x ⅜	0.062	50	500	1⅛			
10020030	⅝ x ½	0.088	50	500	1⅜			
10020031	⅞ x ¾	0.143	25	250	1 11/16			
10020032	1⅛ x 1	0.214	20	200	1 31/32			
10020033	1⅜ x 1¼	0.324	10	100	2 5/32			
10020034	1⅝ x 1½	0.437	10	100	2 7/16			
10020035	2⅛ x 2	0.641	5	50	2 19/32			

104 Male Adapter C x M



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020038	¼	0.034	50	1000	7/16			
10020041	⅜	0.060	50	1000	63/64			
10020045	½	0.072	50	500	15/16			
10020052	¾	0.129	25	250	1⅛			

104-R Male Reducing Adapter C x M

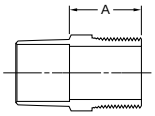


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020036	¼ x ⅛	0.019	50	1000	13/32			
10020037	¼ x ⅜	0.043	50	1000	¾			
10020042	⅜ x ⅛	0.014	50	1000	17/32			
10020039	⅜ x ¼	0.027	50	1000	15/32			
10020040	⅜ x ½	0.069	50	500	⅞			
10020046	½ x ¼	0.039	50	1000	⅝			
10020043	½ x ⅜	0.041	50	500	⅞			
10020044	½ x ¾	0.143	25	250	1 11/32			
10020051	⅝ x ¼	0.059	50	500	⅝			
10020050	⅝ x ⅜	0.053	50	500	47/64			
10020047	⅝ x ½	0.064	50	500	19/32			
10020049	⅝ x ¾	0.135	25	250	13/16			
10020048	⅝ x 1	0.240	20	200	1			
10020053	¾ x ½	0.075	25	500	11/16			
10020056	⅞ x ½	0.106	25	250	53/64			
10020054	⅞ x ¾	0.118	25	250	13/16			
10020055	⅞ x 1	0.234	20	200	⅞			
10020061	1⅛ x ½	0.176	25	250	31/32			
10020060	1⅛ x ¾	0.206	25	250	1 3/32			
10020057	1⅛ x 1	0.170	20	200	27/32			
10020059	1⅛ x 1¼	0.399	10	100	1 21/32			
10020058	1⅛ x 1½	0.544	10	100	1 29/32			
10020065	1⅜ x ¾	0.273	10	100	1			
10020064	1⅜ x 1	0.304	10	100	1¼			
10020062	1⅜ x 1¼	0.317	10	100	15/16			
10020063	1⅜ x 1½	0.523	10	100	1 45/64			
10020069	1⅝ x 1	0.435	10	100	1 9/64			
10020068	1⅝ x 1¼	0.386	10	100	1 27/64			

104-R Male Reducing Adapter (Continued) C x M

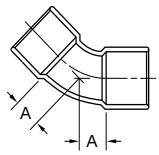
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020066	1⅝ x 1½	0.462	10	100	⅞			
10020067	1⅝ x 2	0.772	5	50	1 25/32			
10020071	2⅛ x 1¼	0.631	5	50	1¾			
10020504	2⅛ x 1½	0.650	5	50	1 23/64			
10020070	2⅛ x 2	0.675	5	50	31/32			
10020072	2⅝ x 2½	1.267	4	40	1 21/32			
10020073	3⅛ x 3	1.520	2	20	1 7/32			
10020074	4⅛ x 4	2.262	1	16	1 9/32			

104-2-R Male Reducing Street Adapter FTG x M



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020075	⅜ x ¼	0.033	50	1000	1 1/16			
10020076	½ x ⅜	0.049	50	1000	1 3/16			
10020241	⅝ x ⅜	0.053	50	500	---			
10020077	⅝ x ½	0.074	50	500	1 7/16			
10020505	⅝ x ¾	0.153	25	250	---			
10020506	⅞ x ½	0.093	25	250	1 23/32			
10020078	⅞ x ¾	0.143	25	250	1 27/32			
10020079	1⅛ x 1	0.232	20	200	2 5/32			
10020080	1⅜ x 1¼	0.444	10	100	2½			
10020081	1⅝ x 1½	0.508	10	100	2 13/16			
10020082	2⅛ x 2	0.749	5	50	2 13/16			

106 45° Elbow C x C

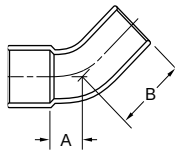


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020182	¼	0.006	50	1000	⅛			
10020183	⅜	0.013	50	1000	15/64			
10020184	½	0.024	50	1000	¼			
10020185	⅝	0.034	100	1000	17/64			
10020186	¾	0.056	25	250	5/16			
10020187	⅞	0.076	50	500	⅜			
10020188	1⅛	0.137	25	250	13/32			

106 45° Elbow (Continued) C x C

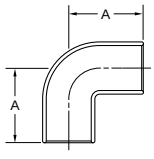
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020189	1⅜	0.229	25	200	33/64			
10020190	1⅝	0.343	20	160	19/32			
10020191	2⅛	0.625	10	80	25/32			
10020192	2⅝	0.970	5	40	⅞			
10020193	3⅛	1.460	3	24	63/64			
10020194	3⅝	2.180	1	16	1 5/32			
10020195	4⅛	3.800	1	8	1 11/64			

106-2 45° Street Elbow FTG x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020196	⅜	0.013	50	1000	15/16	41/64		
10020197	½	0.024	50	1000	9/32	23/32		
10020198	⅝	0.033	100	1000	5/16	25/32		
10020199	¾	0.056	25	250	5/16	1		
10020200	⅞	0.076	50	500	13/32	1 3/16		
10020201	1⅛	0.134	25	250	7/16	1 7/16		
10020202	1⅜	0.229	25	200	17/32	1 9/16		
10020203	1⅝	0.343	20	160	19/32	1¾		
10020204	2⅛	0.625	10	80	11/16	2 3/32		
10020205	2⅝	0.965	5	40	29/32	2 7/16		
10020206	3⅛	1.470	3	24	1	2 11/16		
10020207	3⅝	2.100	1	16	1 5/32	3		
10020627	4⅛	3.340	1	8	1 9/32	3½		

105-C 90° Street Elbow - Close Ruff FTG x FTG

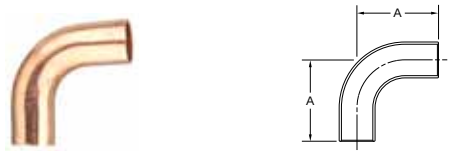


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020601	¼	0.008	25	500	5/8			
10020245	⅜	0.013	25	500	27/32			
10020246	½	0.029	25	500	15/16			
10020247	⅝	0.043	25	500	1 1/32			
10020508	¾	0.073	10	200	1¼			
10020628	⅞	0.086	25	250	1 13/32			

105-C 90° Street Elbow - Close Ruff (Continued) FTG x FTG

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020630	1⅛	0.166	10	100	1 21/32			
10020896	1⅜	0.269	5	50	1 29/32			

105-L 90° Street Elbow - Long Turn FTG x FTG

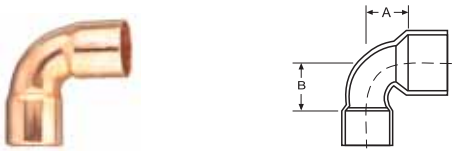


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020279	½	0.033	25	500	1 3/16			
10020280	⅝	0.057	25	250	1 7/16			
10020632	⅞	0.138	25	250	2			
10020634	1⅛	0.251	10	100	2 15/16			
10020509	1⅜	0.396	5	50	2 29/32			
10020510	1⅝	0.563	5	50	3 5/16			
10020645	2⅛	1.156	5	40	4⅜			

107-C 90° Elbow - Close Ruff C x C

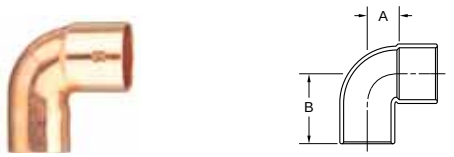
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020208	¼	0.008	50	1000	⅜	⅜		
10020209	⅜	0.012	50	1000	⅜	⅜		
10020210	½	0.026	50	1000	13/32	13/32		
10020211	⅝	0.038	100	1000	25/64	25/64		
10020213	¾	0.069	25	250	17/32	17/32		
10020215	⅞	0.096	50	500	9/16	9/16		
10020626	1⅛	0.208	20	200	47/64	47/64		
10020219	1⅜	0.259	25	200	15/16	15/16		
10020221	1⅝	0.371	20	120	1 11/64	1 11/64		
10020223	2⅛	0.848	10	60	1 29/64	1 29/64		
10020225	2⅝	1.248	5	40	1 21/32	1 21/32		
10020227	3⅛	1.943	3	24	1 61/64	1 61/64		
10020229	3⅝	2.728	1	8	2 7/32	2 7/32		
10020230	4⅛	4.557	1	8	2 17/32	2 17/32		
10020512	6⅛	15.200	1	1	3 13/16	3 13/16		

107-C-R 90° Reducing Elbow - Close Ruff C x C



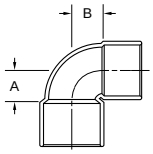
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020513	⅜ x ¼	0.012	50	1000	13/32	5/16		
10020894	½ x ⅜	0.027	50	1000	⅝	39/64		
10020664	⅝ x ⅜	0.034	50	500	11/16	43/64		
10020212	⅝ x ½	0.042	50	500	43/64	⅝		
10020214	¾ x ⅝	0.077	25	250	31/32	⅞		
10020216	⅞ x ⅝	0.073	50	500	⅝	15/32		
10020218	1⅛ x ⅝	0.129	25	250	1⅛	⅞		
10020217	1⅛ x ⅞	0.146	25	250	¾	19/32		
10020220	1⅜ x 1⅛	0.229	10	100	⅞	11/16		
10020222	1⅝ x 1⅜	0.338	10	100	1 9/64	55/64		
10020224	2⅛ x 1⅝	0.602	5	40	1½	1 13/64		
10020226	2⅝ x 2⅛	1.128	5	40	1⅞	1½		
10020228	3⅛ x 2⅝	1.598	3	24	2 3/32	1¾		

107-C-2 90° Street Elbow - Close Ruff FTG x C



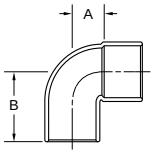
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020231	¼	0.006	50	1000	⅜	49/64		
10020232	⅜	0.012	50	1000	⅜	¾		
10020233	½	0.027	50	1000	13/32	15/16		
10020234	⅝	0.036	100	1000	29/64	1 1/32		
10020235	¾	0.061	25	250	17/32	17/32		
10020236	⅞	0.103	50	500	19/32	1 13/32		
10020237	1⅛	0.193	20	200	21/32	1 21/32		
10020238	1⅜	0.259	25	200	⅞	1 29/32		
10020239	1⅝	0.392	20	120	1 11/64	2⅜		
10020240	2⅛	0.805	10	60	1 29/64	2 27/32		
10020242	2⅝	1.187	5	40	1¾	3 21/64		
10020243	3⅛	1.920	3	24	2	3 25/32		
10020244	3⅝	2.798	1	8	2 15/64	4 15/64		
10020629	4⅛	4.446	1	8	2 19/32	4 13/16		

107-MT 90° Elbow - Medium Turn C x C



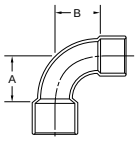
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020631	¼	0.010	50	1000	⅜	⅜		
10020898	⅜	0.016	50	1000	⅜	⅜		
10020633	½	0.043	50	1000	½	½		
10020514	⅝	0.068	50	500	19/32	19/32		
10020990	¾	0.109	25	250	⅞	⅞		
10020515	⅞	0.141	25	250	13/16	13/16		
10020602	1⅛	0.252	10	100	1	1		

107-MT-2 90° Street Elbow - Medium Turn FTG x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020516	¼	0.010	50	1000	⅜	¾		
10020517	⅜	0.017	50	1000	⅜	¾		
10020518	½	0.044	50	1000	½	15/16		
10020635	⅝	0.066	50	500	19/32	1 3/16		
10020636	¾	0.104	25	250	⅞	1½		
10020637	⅞	0.146	25	250	13/16	1⅝		
10020638	1⅛	0.271	10	100	1 1/16	2 1/32		

107-L 90° Elbow - Long Turn C x C

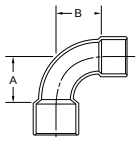


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020248	3/16	0.007	50	1000	5/16	5/16		
10020249	¼	0.008	50	1000	½	½		
10020250	5/16	0.013	50	1000	9/16	9/16		
10020251	⅜	0.019	50	1000	¾	¾		
10020252	½	0.033	50	500	23/32	23/32		
10020254	⅝	0.058	50	500	55/64	55/64		
10020255	¾	0.088	25	250	1 1/16	1 1/16		

107-L 90° Elbow - Long Turn (Continued) C x C

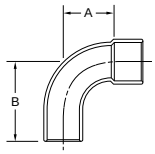
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020257	⅞	0.123	25	250	1 5/32	1 5/32		
10020261	1	0.231	10	100	1 15/32	1 15/32		
10020262	1⅛	0.270	10	100	1 29/64	1 29/64		
10020263	1⅜	0.381	10	80	1⅞	1⅞		
10020264	1⅝	0.563	10	80	2 3/16	2 3/16		
10020265	2⅛	1.156	5	30	3	3		
10020266	2⅝	1.737	1	10	3 3/16	3 3/16		
10020267	3⅛	3.320	1	8	4⅝	4⅝		
10020640	3⅝	4.850	1	1	5¼	5¼		
10020641	4⅛	7.400	1	1	5⅞	5⅞		

107-L-R 90° Reducing Elbow - Long Turn C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020253	½ x ⅜	0.027	50	1000	39/64	⅝		
10020639	⅝ x ½	0.042	50	500	⅝	43/64		
10020256	¾ x ⅝	0.077	25	250	⅞	31/32		
10020260	⅞ x ½	0.073	50	500	11/16	27/32		
10020259	⅞ x ⅝	0.086	50	500	⅞	⅞		
10020258	⅞ x ¾	0.113	25	250	1 1/16	1 5/32		
10020993	1⅛ x ⅞	0.244	25	250	1 9/64	1¼		
10020994	1⅝ x 1⅛	0.299	5	50	1 13/32	1 11/16		
10020665	1⅝ x 1⅜	0.483	5	50	2	2¼		
10020332	2⅛ x 1⅝	0.754	5	40	2 3/16	2 5/16		

107-L-2 90° Street Elbow - Long Turn FTG x C

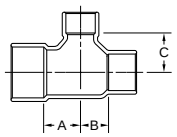


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020268	¼	0.008	50	1000	½	⅞		
10020269	⅜	0.019	50	1000	23/64	1 1/16		
10020270	½	0.033	50	500	23/32	1 7/32		
10020271	⅝	0.058	50	500	55/64	1 7/16		
10020272	¾	0.088	25	250	1 1/16	1 27/32		
10020273	⅞	0.139	25	250	1⅛	2 1/16		

107-L-2 90° Street Elbow - Long Turn (Continued) FTG x C

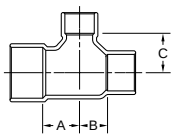
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020274	1⅛	0.269	10	100	1 13/32	2 9/16		
10020275	1⅜	0.381	10	80	1⅞	2 29/32		
10020276	1⅝	0.563	10	80	2 3/16	3 5/16		
10020277	2⅛	1.156	5	30	2 31/32	4⅜		
10020278	2⅝	1.963	1	10	3 3/16	4 23/32		
10020642	3⅛	3.300	1	8	4⅝	6 11/32		
10020643	3⅝	3.850	1	8	4	5 31/32		
10020644	4⅛	5.890	1	1	4 29/64	6 23/32		

111 Tee C x C x C



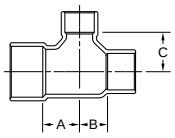
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020362	3/16	0.009	50	1000	3/16	3/16	3/16	
10020363	¼	0.016	50	1000	13/64	13/64	7/32	
10020367	5/16	0.020	50	1000	7/32	7/32	9/32	
10020371	⅜	0.028	50	1000	17/64	17/64	¼	
10020379	½	0.045	50	500	5/16	5/16	⅜	
10020386	⅝	0.059	50	500	21/64	21/64	11/32	
10020396	¾	0.110	25	250	7/16	7/16	½	
10020402	⅞	0.144	25	250	½	½	17/32	
10020416	1⅛	0.293	10	100	41/64	41/64	19/32	
10020429	1⅜	0.397	5	50	41/64	41/64	41/64	
10020444	1⅝	0.544	5	50	1 1/16	1 1/16	1 1/16	
10020466	2⅛	1.082	5	40	1 1/16	1 1/16	1 15/64	
10020490	2⅝	1.961	1	10	1 21/32	1 21/32	1 11/16	
10020561	3⅛	2.632	1	10	1⅞	1⅞	1 11/16	
10020588	3⅝	4.167	1	8	2 5/32	2 5/32	2¼	
10020589	4⅛	5.210	1	8	2 13/32	2 13/32	2 9/16	
10020590	5⅛	7.998	1	1	2 37/64	2 37/64	2 29/32	
10020591	6⅛	12.613	1	1	3⅛	3⅛	3 11/16	
10020592	8⅛	32.086	1	1	4 1/16	4 1/16	4¾	

111-BH Bullhead Tee C x C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020364	¼ x ¼ x 5/16	0.020	50	1000	17/64	17/64	9/32	
10020365	¼ x ¼ x ⅜	0.028	50	1000	13/32	13/32	¼	
10020373	⅜ x ⅜ x ½	0.045	50	500	15/32	15/32	⅜	
10020372	⅜ x ⅜ x ⅝	0.063	50	500	21/32	21/32	11/32	
10020380	½ x ½ x ⅝	0.063	50	500	17/32	17/32	11/32	
10020389	⅝ x ⅝ x ¾	0.110	50	500	21/32	21/32	½	
10020388	⅝ x ⅝ x ⅞	0.118	25	250	33/64	33/64	15/32	
10020387	⅝ x ⅝ x 1⅛	0.290	10	100	15/16	15/16	¾	
10020397	¾ x ¾ x ⅞	0.170	25	250	11/16	11/16	17/32	
10020403	⅞ x ⅞ x 1⅛	0.202	10	100	¾	¾	17/32	
10020417	1⅛ x 1⅛ x 1⅜	0.405	5	50	1 5/32	1 5/32	31/32	
10020655	1⅛ x 1⅛ x 1⅝	0.680	5	50	1¼	1¼	1 5/32	
10020431	1⅜ x 1⅜ x 1⅝	0.680	5	50	1 3/16	1 3/16	1 5/32	
10020430	1⅜ x 1⅜ x 2⅛	1.352	5	40	1¾	1¾	1⅜	
10020445	1⅝ x 1⅝ x 2⅛	1.352	5	40	1 37/64	1 37/64	1⅜	
10020467	2⅛ x 2⅛ x 2⅝	1.961	1	10	2	2	1 11/16	
10020491	2⅝ x 2⅝ x 3⅛	2.744	1	10	2⅝	2⅝	1⅞	
10020562	3⅛ x 3⅛ x 4⅛	6.396	1	8	3 21/32	3 21/32	2 9/16	

111-R Reducing Tee C x C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020366	¼ x ¼ x ⅛	0.016	50	1000	5/16	5/16	7/32	
10020370	5/16 x ¼ x ¼	0.020	50	1000	7/32	11/32	11/32	
10020369	5/16 x ¼ x 5/16	0.020	50	1000	7/32	11/32	9/32	
10020368	5/16 x 5/16 x ¼	0.020	50	1000	7/32	7/32	11/32	
10020378	⅜ x ¼ x ¼	0.028	50	1000	17/64	13/32	13/32	
10020377	⅜ x ¼ x 5/16	0.028	50	1000	17/64	13/32	11/32	
10020376	⅜ x ¼ x ⅜	0.028	50	1000	17/64	13/32	¼	
10020375	⅜ x ⅜ x 3/16	0.028	50	1000	17/64	17/64	7/16	
10020374	⅜ x ⅜ x ¼	0.028	50	1000	17/64	17/64	13/32	
10020385	½ x ¼ x ½	0.045	50	500	5/16	9/16	⅜	
10020384	½ x ⅜ x ¼	0.045	50	500	5/16	15/32	⅝	
10020654	½ x ⅜ x ⅜	0.045	50	500	5/16	15/32	15/32	
10020383	½ x ⅜ x ½	0.045	50	500	5/16	15/32	⅜	

111-R Reducing Tee (Continued) C x C x C

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020382	½ x ½ x ¼	0.045	50	500	5/16	5/16	39/64	
10020381	½ x ½ x ⅜	0.045	50	500	5/16	5/16	15/32	
10020395	⅝ x ⅜ x ⅜	0.064	50	500	9/32	⅝	13/32	
10020706	⅝ x ⅜ x ⅝	0.063	50	500	⅜	21/32	11/32	
10020394	⅝ x ½ x ½	0.064	50	500	5/16	½	13/32	
10020393	⅝ x ½ x ⅝	0.063	50	500	⅜	17/32	11/32	
10020392	⅝ x ⅝ x ¼	0.064	50	500	9/32	9/32	½	
10020391	⅝ x ⅝ x ⅜	0.064	50	500	9/32	9/32	13/32	
10020390	⅝ x ⅝ x ½	0.064	50	500	5/16	5/16	13/32	
10020401	¾ x ⅝ x ⅝	0.107	25	250	27/64	⅝	½	
10020400	¾ x ¾ x ⅜	0.107	25	250	27/64	27/64	23/32	
10020399	¾ x ¾ x ½	0.107	25	250	27/64	27/64	21/32	
10020398	¾ x ¾ x ⅝	0.107	25	250	27/64	27/64	½	
10020415	⅞ x ½ x ½	0.132	25	250	25/64	23/32	11/16	
10020414	⅞ x ½ x ⅞	0.159	25	250	½	29/32	17/32	
10020413	⅞ x ⅝ x ⅜	0.140	25	250	25/64	⅝	¾	
10020412	⅞ x ⅝ x ½	0.137	25	250	25/64	⅝	11/16	
10020410	⅞ x ⅝ x ⅝	0.109	25	250	25/64	⅝	19/32	
10020409	⅞ x ⅝ x ⅞	0.144	25	250	½	25/32	17/32	
10020408	⅞ x ¾ x ¾	0.150	25	250	½	11/16	¾	
10020407	⅞ x ⅞ x ⅜	0.135	25	250	25/64	25/64	¾	
10020406	⅞ x ⅞ x ½	0.131	25	250	25/64	25/64	11/16	
10020405	⅞ x ⅞ x ⅝	0.112	25	250	25/64	25/64	19/32	
10020404	⅞ x ⅞ x ¾	0.153	25	250	½	½	¾	
10020428	1⅛ x ⅝ x ⅝	0.183	10	100	23/64	13/16	11/16	
10020427	1⅛ x ⅝ x ⅞	0.220	10	100	½	15/16	⅝	
10020426	1⅛ x ⅝ x 1⅛	0.290	10	100	21/32	5/64	21/32	
10020425	1⅛ x ⅞ x ½	0.270	10	100	23/64	9/16	13/16	
10020424	1⅛ x ⅞ x ⅝	0.183	10	100	23/64	9/16	11/16	
10020423	1⅛ x ⅞ x ⅞	0.220	10	100	½	11/16	⅝	
10020422	1⅛ x ⅞ x 1⅛	0.290	10	100	21/32	53/64	21/32	
10020421	1⅛ x 1⅛ x ½	0.183	10	100	23/64	23/64	13/16	
10020420	1⅛ x 1⅛ x ⅝	0.183	10	100	23/64	23/64	11/16	
10020419	1⅛ x 1⅛ x ¾	0.319	10	100	½	½	15/16	
10020418	1⅛ x 1⅛ x ⅞	0.220	10	100	½	½	⅝	
10020443	1⅜ x ⅝ x 1⅜	0.405	5	50	⅞	⅞	25/32	
10020442	1⅜ x ⅞ x ⅝	0.267	5	50	½	½	25/32	
10020441	1⅜ x ⅞ x ⅞	0.297	5	50	⅝	⅝	25/32	
10020440	1⅜ x ⅞ x 1⅛	0.391	5	50	¾	¾	25/32	
10020439	1⅜ x ⅞ x 1⅜	0.405	5	50	⅞	⅞	25/32	
10020438	1⅜ x 1⅛ x ⅝	0.267	5	50	½	½	25/32	
10020437	1⅜ x 1⅛ x ⅞	0.297	5	50	⅝	⅝	25/32	
10020436	1⅜ x 1⅛ x 1⅛	0.391	5	50	¾	¾	25/32	
10020435	1⅜ x 1⅛ x 1⅜	0.405	5	50	⅞	⅞	25/32	
10020434	1⅜ x 1⅜ x ⅝	0.259	5	50	19/64	19/64	11/16	
10020433	1⅜ x 1⅜ x ⅞	0.314	5	50	7/16	7/16	¾	

111-R Reducing Tee (Continued) C x C x C

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020432	1⅜ x 1⅜ x 1⅛	0.348	5	50	17/32	17/32	25/32	
10020465	1⅝ x ⅝ x 1⅝	0.680	5	50	1 5/32	1 31/64	1 5/32	
10020464	1⅝ x ⅞ x ⅝	0.460	5	50	9/16	15/16	31/32	
10020463	1⅝ x ⅞ x ⅞	0.583	5	50	11/64	1 1/32	31/32	
10020462	1⅝ x ⅞ x 1⅛	0.591	5	50	27/32	1 5/16	1 1/16	
10020461	1⅝ x ⅞ x 1⅜	0.661	5	50	31/32	1 ¼	1 1/16	
10020460	1⅝ x ⅞ x 1⅝	0.680	5	50	1 5/32	1 19/64	1 5/32	
10020459	1⅝ x 1⅛ x ⅝	0.460	5	50	9/16	13/16	31/32	
10020458	1⅝ x 1⅛ x ⅞	0.583	5	50	1 1/16	1	31/32	
10020457	1⅝ x 1⅛ x 1⅛	0.591	5	50	27/32	1 1/8	1 1/16	
10020456	1⅝ x 1⅛ x 1⅜	0.661	5	50	31/32	1 5/16	1 1/16	
10020455	1⅝ x 1⅛ x 1⅝	0.680	5	50	1 5/32	1 ¼	1 5/32	
10020454	1⅝ x 1⅜ x ⅝	0.460	5	50	9/16	13/16	31/32	
10020453	1⅝ x 1⅜ x ⅞	0.583	5	50	1 1/16	⅞	31/32	
10020452	1⅝ x 1⅜ x 1⅛	0.591	5	50	27/32	1 3/16	1 1/16	
10020451	1⅝ x 1⅜ x 1⅜	0.661	5	50	31/32	1 3/16	1 1/16	
10020450	1⅝ x 1⅜ x 1⅝	0.680	5	50	17/32	1 3/16	1 7/32	
10020449	1⅝ x 1⅝ x ⅝	0.296	5	50	21/64	21/64	29/32	
10020448	1⅝ x 1⅝ x ⅞	0.332	5	50	7/16	7/16	13/16	
10020447	1⅝ x 1⅝ x 1⅛	0.376	5	50	9/16	9/16	13/16	
10020446	1⅝ x 1⅝ x 1⅜	0.457	5	50	1 1/16	1 1/16	13/16	
10020489	2⅛ x ⅝ x 2⅛	1.352	5	40	1 3/8	1 7/8	1 3/8	
10020487	2⅛ x ⅞ x 2⅛	1.352	5	40	1 3/8	1 ¾	1 3/8	
10020486	2⅛ x 1⅛ x 1⅛	1.023	5	40	27/32	1 9/32	1 11/32	
10020485	2⅛ x 1⅛ x 2⅛	1.352	5	40	1 3/8	1 25/32	1 3/8	
10020484	2⅛ x 1⅜ x ⅝	0.850	5	40	⅝	1 5/64	1 ¼	
10020483	2⅛ x 1⅜ x ⅞	0.960	5	40	1 1/16	1 5/32	1 ¼	
10020482	2⅛ x 1⅜ x 1⅛	1.023	5	40	13/16	1 9/32	1 5/16	
10020481	2⅛ x 1⅜ x 1⅜	1.013	5	40	31/32	1 3/16	1 3/8	
10020480	2⅛ x 1⅜ x 1⅝	1.097	5	40	1 1/32	1 3/8	1 11/32	
10020479	2⅛ x 1⅜ x 2⅛	1.352	5	40	1 3/8	1 25/32	1 3/8	
10020478	2⅛ x 1⅝ x ⅝	0.850	5	40	⅝	15/16	1 ¼	
10020477	2⅛ x 1⅝ x ⅞	0.960	5	40	1 1/16	1 1/16	1 ¼	
10020476	2⅛ x 1⅝ x 1⅛	1.023	5	40	13/16	1 1/16	1 5/16	
10020475	2⅛ x 1⅝ x 1⅜	1.013	5	40	31/32	1 3/16	1 3/8	
10020474	2⅛ x 1⅝ x 1⅝	1.097	5	40	1 1/32	1 19/64	1 11/32	
10020473	2⅛ x 1⅝ x 2⅛	1.352	5	40	1 3/8	1 37/64	1 3/8	
10020472	2⅛ x 2⅛ x ⅝	0.551	5	40	5/16	5/16	1 1/8	
10020471	2⅛ x 2⅛ x ⅞	0.624	5	40	7/16	7/16	1 5/32	
10020470	2⅛ x 2⅛ x 1⅛	0.673	5	40	½	½	1 3/32	
10020469	2⅛ x 2⅛ x 1⅜	0.742	5	40	1 1/16	1 1/16	1 1/8	
10020468	2⅛ x 2⅛ x 1⅝	0.893	5	40	¾	¾	1 3/32	
10020560	2⅝ x ⅞ x 2⅝	1.961	1	10	1 21/32	3 7/16	1 11/16	
10020559	2⅝ x 1⅛ x 2⅝	1.961	1	10	1 21/32	3 7/32	1 11/16	
10020558	2⅝ x 1⅜ x 2⅛	1.673	1	10	1 7/16	2 45/64	1 11/16	
10020557	2⅝ x 1⅜ x 2⅝	1.961	1	10	1 21/32	2 31/32	1 11/16	

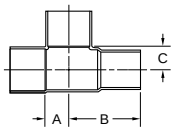
111-R Reducing Tee (Continued) C x C x C

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020556	2⅝ x 1⅝ x 1⅜	1.341	1	10	1	2 3/16	1 39/64	
10020555	2⅝ x 1⅝ x 1⅝	1.460	1	10	1 3/16	2 19/64	1 19/32	
10020554	2⅝ x 1⅝ x 2⅛	1.673	1	10	1 7/16	2 15/32	1 11/16	
10020553	2⅝ x 1⅝ x 2⅝	1.961	1	10	1 21/32	2 21/32	1 11/16	
10020552	2⅝ x 2⅛ x ⅝	1.081	1	10	½	1 11/32	1½	
10020551	2⅝ x 2⅛ x ⅞	1.258	1	10	¾	1⅜	1 31/64	
10020550	2⅝ x 2⅛ x 1⅛	1.356	1	10	⅞	1 9/16	1⅝	
10020499	2⅝ x 2⅛ x 1⅜	1.341	1	10	1	1 11/16	1 39/64	
10020498	2⅝ x 2⅛ x 1⅝	1.460	1	10	1 3/16	1¾	1 19/32	
10020497	2⅝ x 2⅛ x 2⅛	1.673	1	10	1 7/16	2 3/64	1 11/16	
10020496	2⅝ x 2⅛ x 2⅝	1.961	1	10	1 21/32	2	1 11/16	
10020495	2⅝ x 2⅝ x ⅝	1.081	1	10	½	½	1½	
10020494	2⅝ x 2⅝ x ⅞	1.258	1	10	¾	¾	1 31/64	
10020657	2⅝ x 2⅝ x 1⅛	1.356	1	10	⅞	⅞	1⅝	
10020656	2⅝ x 2⅝ x 1⅜	1.341	1	10	1	1	1 39/64	
10020493	2⅝ x 2⅝ x 1⅝	1.460	1	10	1 3/16	1 3/16	1 19/32	
10020492	2⅝ x 2⅝ x 2⅛	1.673	1	10	1 7/16	1 7/16	1 11/16	
10020660	3⅛ x ⅞ x 3⅛	2.744	1	10	1⅞	4 1/32	1⅞	
10020659	3⅛ x 1⅛ x 3⅛	2.744	1	10	1⅞	3 29/32	1⅞	
10020658	3⅛ x 1⅜ x 3⅛	2.744	1	10	1⅞	3 23/32	1⅞	
10020587	3⅛ x 1⅝ x 1⅝	2.024	1	10	1 3/16	2 25/32	1 29/32	
10020586	3⅛ x 1⅝ x 2⅛	2.270	1	10	1 7/16	3⅛	1 31/32	
10020585	3⅛ x 1⅝ x 2⅝	2.351	1	10	1 11/16	3 5/16	1 31/32	
10020584	3⅛ x 1⅝ x 3⅛	2.744	1	10	1⅞	3 9/16	1⅞	
10020583	3⅛ x 2⅛ x 1⅛	1.757	1	10	⅞	2	1 59/64	
10020582	3⅛ x 2⅛ x 1⅜	1.939	1	10	31/32	2 3/16	1 59/64	
10020581	3⅛ x 2⅛ x 1⅝	2.024	1	10	1 3/16	2 5/16	1 29/32	
10020580	3⅛ x 2⅛ x 2⅛	2.270	1	10	1 7/16	2 9/16	1 31/32	
10020579	3⅛ x 2⅛ x 2⅝	2.351	1	10	1 11/16	2 23/32	1 31/32	
10020578	3⅛ x 2⅛ x 3⅛	2.744	1	10	1⅞	3 1/16	1⅞	
10020577	3⅛ x 2⅝ x ⅞	1.691	1	10	¾	1 17/32	1 13/16	
10020576	3⅛ x 2⅝ x 1⅛	1.757	1	10	⅞	1⅝	1 59/64	
10020574	3⅛ x 2⅝ x 1⅜	1.939	1	10	31/32	1¾	1 59/64	
10020573	3⅛ x 2⅝ x 1⅝	2.024	1	10	1 3/16	1⅞	1 29/32	
10020572	3⅛ x 2⅝ x 2⅛	2.270	1	10	1 7/16	2⅛	1 31/32	
10020571	3⅛ x 2⅝ x 2⅝	2.351	1	10	1 11/16	2 13/32	1 31/32	
10020570	3⅛ x 2⅝ x 3⅛	2.744	1	10	1⅞	2⅝	1⅞	
10020569	3⅛ x 3⅛ x ⅝	1.542	1	10	9/16	9/16	1 11/16	
10020568	3⅛ x 3⅛ x ⅞	1.691	1	10	¾	¾	1 13/16	
10020567	3⅛ x 3⅛ x 1⅛	1.757	1	10	⅞	⅞	1 59/64	
10020566	3⅛ x 3⅛ x 1⅜	1.939	1	10	31/32	31/32	1 59/64	
10020565	3⅛ x 3⅛ x 1⅝	2.024	1	10	1 3/16	1 3/16	1 29/32	
10020564	3⅛ x 3⅛ x 2⅛	2.270	1	10	1 7/16	1 7/16	1 31/32	
10020563	3⅛ x 3⅛ x 2⅝	2.351	1	10	1 11/16	1 11/16	1 31/32	
10020519	4⅛ x 1⅛ x 4⅛	6.396	1	8	2 13/32	5 9/32	2 25/64	
10020520	4⅛ x 1⅝ x 4⅛	6.396	1	8	2 13/32	4 29/32	2 35/64	

111-R Reducing Tee (Continued) C x C x C

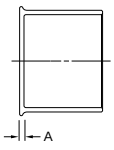
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020521	4⅛ x 2⅛ x 2⅛	4.880	1	8	1½	3 17/32	2 7/16	
10020522	4⅛ x 2⅛ x 4⅛	6.396	1	8	2 13/32	4½	2 35/64	
10020523	4⅛ x 2⅝ x 2⅝	5.361	1	8	1 25/32	3 5/16	2 19/32	
10020524	4⅛ x 2⅝ x 4⅛	6.396	1	8	2 13/32	4 1/16	2 35/64	
10020525	4⅛ x 3⅛ x 2⅛	4.880	1	8	1½	2 23/32	2 7/16	
10020526	4⅛ x 3⅛ x 2⅝	5.361	1	8	1 25/32	2 29/32	2 19/32	
10020527	4⅛ x 3⅛ x 3⅛	5.714	1	8	2 1/32	3 1/32	2½	
10020528	4⅛ x 3⅛ x 4⅛	6.396	1	8	2 13/32	3 21/32	2 35/64	
10020529	4⅛ x 4⅛ x ⅝	2.296	1	16	½	½	2 5/16	
10020530	4⅛ x 4⅛ x ⅞	2.410	1	16	13/32	13/32	2 5/16	
10021002	4⅛ x 4⅛ x 1⅛	4.715	1	8	15/16	15/16	2 5/16	
10021003	4⅛ x 4⅛ x 1⅜	4.715	1	8	1 3/32	1 3/32	2½	
10020531	4⅛ x 4⅛ x 1⅝	4.985	1	8	1 3/16	1 3/16	2 9/16	
10020708	4⅛ x 4⅛ x 2⅛	4.880	1	8	1½	1½	2 7/16	
10020662	4⅛ x 4⅛ x 2⅝	5.361	1	8	1 25/32	1 25/32	2 19/32	
10020661	4⅛ x 4⅛ x 3⅛	5.714	1	8	2 1/32	2 1/32	2½	
10020532	6⅛ x 6⅛ x 2⅛	7.132	1	1	1 17/32	1 17/32	3 7/16	
10020533	6⅛ x 6⅛ x 2⅝	7.663	1	1	1 7/16	1 7/16	3 7/16	
10020534	6⅛ x 6⅛ x 3⅛	8.093	1	1	1 11/16	1 11/16	3 7/16	

111-2 Street Tee C x FTG x C



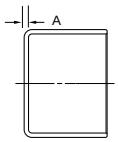
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020593	⅜ x ¼ x ⅜	0.016	50	1000	17/64	⅜	¼	
10020535	⅝ x ½ x ⅝	0.069	50	500	⅜	1 1/32	⅜	
10020536	⅞ x ¾ x ⅞	0.148	25	250	½	1 7/16	15/32	

116 Fitting End Plug FTG



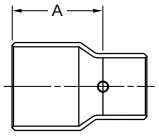
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020287	½	0.010	50	1000	1/16			
10020288	⅝	0.016	100	1000	3/32			
10020289	⅞	0.036	50	500	⅛			
10020290	1⅛	0.059	25	250	5/32			

117 Tube Cap C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020095	¼	0.003	50	1000	1/32			
10020096	⅜	0.005	50	1000	1/16			
10020097	½	0.010	50	1000	3/32			
10020098	⅝	0.016	100	1000	5/64			
10020099	¾	0.030	25	500	⅛			
10020100	⅞	0.036	50	500	5/64			
10020101	1⅛	0.059	50	500	⅛			
10020102	1⅜	0.108	25	250	5/32			
10020103	1⅝	0.159	20	200	5/32			
10020104	2⅛	0.284	10	100	5/32			
10020105	2⅝	0.469	5	50	5/32			
10020106	3⅛	0.713	5	50	3/16			
10020107	3⅝	0.970	1	10	3/16			
10020108	4⅛	1.384	1	10	7/32			

118 Fitting Reducer FTG x C

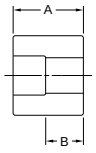


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020291	¼ x ⅛	0.004	50	1000	33/64			
10020292	⅜ x ¼	0.007	50	1000	½			
10020294	½ x ¼	0.016	50	1000	⅝			
10020293	½ x ⅜	0.015	50	1000	17/32			
10020296	⅝ x ⅜	0.022	50	1000	47/64			
10020295	⅝ x ½	0.022	50	1000	23/32			
10020299	¾ x ⅜	0.038	25	500	15/16			
10020298	¾ x ½	0.029	25	500	29/32			
10020297	¾ x ⅝	0.038	25	500	25/32			
10020303	⅞ x ⅜	0.049	50	500	1⅛			
10020302	⅞ x ½	0.037	50	500	1 1/16			
10020301	⅞ x ⅝	0.057	50	500	1			
10020300	⅞ x ¾	0.052	50	500	15/16			
10020307	1⅛ x ½	0.088	25	250	1⅜			
10020306	1⅛ x ⅝	0.095	25	250	1 9/32			
10020305	1⅛ x ¾	0.089	25	250	1 7/32			
10020304	1⅛ x ⅞	0.092	25	250	1 3/16			

118 Fitting Reducer (Continued) FTG x C

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020310	1⅜ x ⅝	0.169	10	100	1 15/32			
10020309	1⅜ x ⅞	0.118	10	100	1 11/32			
10020308	1⅜ x 1⅛	0.150	10	100	1¼			
10020314	1⅝ x ⅝	0.207	10	100	1⅞			
10020313	1⅝ x ⅞	0.200	10	100	1 11/16			
10020312	1⅝ x 1⅛	0.208	10	100	1 17/32			
10020311	1⅝ x 1⅜	0.206	10	100	1 19/64			
10020319	2⅛ x ⅝	0.426	10	100	2 7/16			
10020318	2⅛ x ⅞	0.403	10	100	2 11/32			
10020317	2⅛ x 1⅛	0.357	10	100	2⅛			
10020316	2⅛ x 1⅜	0.360	10	100	1 15/16			
10020315	2⅛ x 1⅝	0.374	10	100	1 11/16			
10020323	2⅝ x 1⅛	0.655	5	50	2 17/32			
10020322	2⅝ x 1⅜	0.628	5	50	2 5/16			
10020321	2⅝ x 1⅝	0.666	5	50	2¼			
10020320	2⅝ x 2⅛	0.643	5	50	1 15/16			
10020327	3⅛ x 1⅜	1.029	2	20	2 25/32			
10020326	3⅛ x 1⅝	1.027	2	20	2 11/16			
10020325	3⅛ x 2⅛	0.948	2	20	2 33/64			
10020324	3⅛ x 2⅝	0.893	2	20	2 3/32			
10020340	3⅝ x 2⅛	1.380	1	10	2 51/64			
10020329	3⅝ x 2⅝	1.344	1	10	2 7/16			
10020328	3⅝ x 3⅛	1.336	1	10	2¼			
10020344	4⅛ x 2⅛	2.003	2	32	3 17/32			
10020343	4⅛ x 2⅝	1.952	2	32	3 7/32			
10020342	4⅛ x 3⅛	1.860	2	32	2 15/16			
10020341	4⅛ x 3⅝	1.850	2	32	2 23/32			

119 Flushing Bushing FTG x C

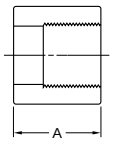


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020084	⅜ x ¼	0.008	50	1000	⅜	1/16		
10020085	½ x ⅜	0.011	50	1000	⅜	1/16		
10020086	⅝ x ⅜	0.034	50	1000	½	3/16		
10020330	⅝ x ½	0.019	50	1000	9/16	3/16		
10020088	¾ x ½	0.054	25	500	⅝	¼		
10020087	¾ x ⅝	0.028	25	500	⅝	⅛		
10020331	⅞ x ⅝	0.070	50	500	⅝	¼		
10020089	⅞ x ¾	0.040	50	500	¾	⅛		
10020091	1⅛ x ⅝	0.211	25	250	29/32	13/32		

119 Flushing Bushing (Continued) FTG x C

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020090	1⅛ x ⅞	0.115	25	250	29/32	5/32		
10020692	1⅜ x 1⅛	0.146	25	250	31/32	1/16		
10020620	1⅝ x 1⅜	0.199	20	200	1 3/32	⅛		
10020092	2⅛ x 1⅝	0.648	5	50	1 11/32	¼		

119-3 Female Flushing Bushing FTG x F



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020094	⅝ x ⅛	0.034	50	1000	9/16			
10020093	⅝ x ¼	0.021	50	1000	9/16			

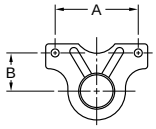
120 Copper Tube Strap - Double Hole

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020353	¼	0.008	100	2000				
10020354	⅜	0.011	100	2000				
10020355	½	0.014	100	2000				
10020356	⅝	0.016	100	1000				
10020357	¾	0.021	100	1000				
10020358	⅞	0.022	100	1000				
10020359	1⅛	0.025	100	1000				
10020360	1⅜	0.041	50	500				
10020361	1⅝	0.048	50	500				
10020996	2⅛	0.062	100	800				

120-S Copper Tube Strap - Single Hole Heavy Duty

Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020998	¼	0.009	100	2000				
10020999	⅜	0.009	100	2000				
10021000	½	0.012	100	2000				
10021001	⅝	0.014	100	2000				

124 Hi Ear Hanger

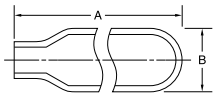


Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020537	⅝	0.029	100	1000	1⅝	47/64		
10020538	⅞	0.038	50	500	1⅝	⅞		
10020539	1⅛	0.043	25	250	1⅝	1		

125 Perforated Copper Strap ¾" Wide

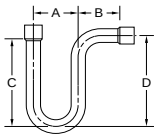
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020352	10 FT ROLL	0.704	6	48				
10020653	25 FT ROLL	1.766	6	48				

122 Air Chamber for Fitting End



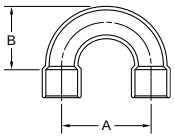
Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020540	⅝ x 1⅛ x 6	0.218	50	300	6	1		
10020083	⅝ x 1⅛ x 12	0.423	50	50	12	1		

123 Suction Line P-Trap C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020281	5/8	0.213	5	50	2 1/4	2 3/16	2 5/32	3 47/64
10020282	3/4	0.465	10	60	3	2 7/8	5 9/32	6
10020283	7/8	0.541	10	60	3 1/2	2 3/4	5 7/32	5 3/16
10020284	1 1/8	0.902	10	10	3 17/32	2 11/64	4 59/64	5 9/32
10020285	1 3/8	1.439	5	5	5	3 1/2	5 1/4	7
10020286	1 5/8	2.491	5	5	7	4 1/2	7 3/4	9 1/2
10020646	2 1/8	4.468	3	3	6	3 3/4	8 9/16	9 21/32

138 Return Bend C x C



Item #	O.D. Size (in)	Wt (lbs)	Inner	Master	Dim A	Dim B	Dim C	Dim D
10020995	1/4 x 1	0.013	50	1000	1	5/8		
10020346	3/8 x 1 1/4	0.028	50	500	1 1/4	13/16		
10020345	3/8 x 1 1/2	0.031	50	500	1 1/2	15/16		
10020348	1/2 x 1 1/2	0.054	25	250	1 1/2	1		
10020347	1/2 x 2	0.069	25	250	2	1 1/4		
10020647	5/8 x 1 9/16	0.078	25	250	1 9/16	1 3/32		
10020541	5/8 x 1 1/2	0.074	25	250	1 1/2	1 1/16		
10020351	5/8 x 2 1/4	0.102	25	250	2 1/4	1 7/16		
10020350	5/8 x 2 1/2	0.113	25	250	2 1/2	1 9/16		
10020349	5/8 x 3	0.128	25	250	3	1 13/16		
10020648	3/4 x 2 1/8	0.129	10	100	2 1/8	1 7/16		
10020700	3/4 x 2 1/4	0.138	10	100	2 1/4	1 5/8		
10020542	7/8 x 2 3/8	0.178	10	100	2 3/8	1 5/8		
10020649	7/8 x 2 1/2	0.194	10	100	2 1/2	1 11/16		
10020651	1 1/8 x 3	0.383	5	50	3	2 1/16		
10020650	1 1/8 x 3 1/4	0.412	5	50	3 1/4	2 3/16		
10020702	1 3/8 x 4	0.606	5	40	4	2 11/16		
10020704	1 5/8 x 4 3/8	0.810	5	40	4 3/8	3		
10020543	2 1/8 x 5 1/8	1.725	4	32	5 1/8	3 5/8		
10020652	2 1/8 x 5 1/2	1.802	4	32	5 1/2	3 13/16		

Rated Internal Working Pressures for Copper Tube Types K, L, M and DWV

Size, Inches	Rated Internal Working Pressures, psi.							
	Type K		Type L		Type M		Type DWV	
	Annealed	Drawn	Annealed	Drawn	Annealed	Drawn	Annealed	Drawn
(Service Temperature up to 150°F (S = 5,100 psi, annealed 9,000 psi, drawn)								
1/4	913	2029	775	1722	-	-	-	-
3/8	979	2135	662	1471	485	1077	-	-
1/2	769	1683	614	1362	420	932	-	-
5/8	633	1389	536	1192	-	-	-	-
3/4	735	1609	495	1099	346	769	-	-
1	563	1236	420	933	286	636	-	-
1 1/4	456	1003	373	823	287	638	280	621
1 1/2	424	933	347	771	281	625	249	552
2	372	820	309	686	254	563	185	410
2 1/2	341	751	286	633	233	517	-	-
3	330	579	269	476	215	380	135	239
3 1/2	313	549	258	456	214	378	-	-
4	308	540	249	440	313	377	128	225
5	295	517	229	404	198	349	128	227
6	296	520	213	376	185	328	126	223
8	315	554	230	406	195	344	124	219
10	315	554	230	407	196	345	-	-
12	316	555	213	375	196	345	-	
-(Service Temperature up to 200°F (S = 4,800 psi, annealed 9,000 psi, drawn)								
1/4	860	2029	730	1722	-	-	-	-
3/8	921	2135	623	1471	456	1077	-	-
1/2	724	1683	578	1362	395	932	-	-
5/8	596	1389	505	1192	-	-	-	-
3/4	691	1609	466	1099	326	769	-	-
1	530	1236	395	933	270	636	-	-
1 1/4	429	1003	351	828	270	638	264	621
1 1/2	399	933	326	771	265	625	235	552
2	350	820	291	686	239	563	174	410
2 1/2	321	751	269	633	219	517	-	-
3	310	579	254	476	202	380	127	239
3 1/2	294	549	243	456	202	378	-	-
4	290	540	234	440	201	377	120	225
5	278	517	215	404	186	349	121	227
6	278	520	201	376	174	328	118	223
8	297	554	216	406	183	344	117	219
10	297	554	217	407	184	345	-	-
12	298	555	200	375	184	345	-	-
(Service Temperature up to 300°F (S = 4,700 psi, annealed 8,700 psi, drawn)								
1/4	842	1974	714	1676	-	-	-	-
3/8	902	2077	610	1431	446	1048	-	-
1/2	709	1638	565	1325	387	907	-	-
5/8	583	1351	494	1160	-	-	-	-
3/4	662	1566	456	1069	319	748	-	-
1	520	1203	387	908	264	619	-	-
1 1/4	420	976	344	806	265	621	258	604
1 1/2	391	908	319	750	359	608	230	537
2	343	798	285	667	234	548	170	399
2 1/2	314	731	263	616	215	503	-	-
3	304	560	248	449	198	367	124	231
3 1/2	288	531	238	441	197	366	-	-
4	283	522	229	425	197	365	117	218
5	272	500	211	391	182	337	118	220
6	272	502	197	364	171	317	116	216
8	290	535	211	393	179	333	114	209
10	290	535	212	394	180	334	-	-
12	291	536	196	363	180	334	-	-

Size, Inches	Rated Internal Working Pressures, psi							
	Type K		Type L		Type M		Type DWV	
	Annealed	Drawn	Annealed	Drawn	Annealed	Drawn	Annealed	Drawn
(Service Temperature up to 400°F (S = 4,700 psi, annealed 8,700 psi, drawn)								
1/4	537	771	456	654	-	-	-	-
3/8	576	811	390	559	285	409	-	-
1/2	453	640	361	518	247	354	-	-
5/8	373	528	316	453	-	-	-	-
3/4	432	611	291	418	204	292	-	-
1	331	470	247	355	169	242	-	-
1 1/4	268	381	220	315	169	242	165	236
1 1/2	250	355	204	293	166	238	147	210
2	219	312	182	261	150	214	109	156
2 1/2	201	285	168	241	137	196	-	-
3	194	527	159	520	127	346	80	218
3 1/2	184	500	152	415	126	344	-	-
4	181	492	147	401	126	343	75	205
5	174	471	135	368	117	318	76	207
6	174	474	126	343	109	299	74	203
8	186	505	135	370	115	313	73	200
10	186	505	136	371	115	314	-	-
12	186	506	125	342	115	314	-	-

Fractional Inch/Decimal Inch/Millimeters Conversion Chart

Fractional Inch	Decimal Inch	Millimeters
1/64	.0156	.396
1/32	.0312	.793
3/64	.0468	1.190
1/16	.0625	1.587
5/64	.0781	1.984
3/32	.0937	2.381
7/64	.1093	2.778
1/8	.125	3.175
9/64	.1406	3.571
5/32	.1562	3.968
11/64	.1718	4.365
3/16	.1875	4.762
13/64	.2031	5.159
7/32	.2187	5.556
15/64	.2343	5.953
1/4	.250	6.350
17/64	.2656	6.746
9/32	.2812	7.143
19/64	.2968	7.540
5/16	.3125	7.937
21/64	.3281	8.334
11/32	.3437	8.731
23/64	.3593	9.128
3/8	.375	9.525
25/64	.3906	9.921
13/32	.4062	10.318
27/64	.4218	10.715
7/16	.4375	11.112
29/64	.4531	11.509
15/32	.4687	11.906
31/64	.4843	12.303
1/2	.500	12.700
33/64	.5156	13.096
17/32	.5312	13.493
35/64	.5468	13.890
9/16	.5625	14.287
37/64	.5781	14.684
19/32	.5937	15.081
39/64	.6093	15.478
5/8	.625	15.875
41/64	.6406	16.271
21/32	.6562	16.668
43/64	.6718	17.065
11/16	.6875	17.462
45/64	.7031	17.859
23/32	.7187	18.256
47/64	.7343	18.653
3/4	.750	19.050
49/64	.7656	19.446
25/32	.7812	19.843
51/64	.7968	20.240
13/16	.8125	20.637
53/64	.8281	20.034
27/32	.8437	21.431
55/64	.8593	21.828
7/8	.875	22.225
57/64	.8906	22.621
29/32	.9062	23.018
59/64	.9218	23.415
15/16	.9375	23.812
61/64	.9531	24.209
31/32	.9687	24.606
63/64	.9843	25.003
1	1.000	25.400

Soldering

Applying Flux - A non-aggressive soldering flux is recommended. Stir the flux before use. A good flux will dissolve and remove traces of residual oxides from the surfaces to be joined, protect the surfaces from re-oxidation during heating and promote the wetting of the surfaces by the solder. A thin, even coating of flux should be applied with a brush to both tube and fitting. Avoid the use of fingers to apply flux. Chemicals in the flux can be harmful if carried to the eyes or open cuts.

Types of Solder - There are a variety of solders available that will produce sound, leak-tight joints. Solders that are used for piping applications contain tin and varying amounts of either antimony, copper, lead or silver. Choice of solder will depend upon application and local codes. For potable water systems, solders which do not contain lead are the best choice.

Assembly - After both surfaces are properly fluxed, they should be assembled by placing the fitting on the tube, making sure the tube seats against the base of the fitting socket. A slight twisting motion is suggested to ensure even coverage by the flux. Remove the excess flux with a rag. Because of the heat that is required during soldering and brazing, only cotton rags should be used. Complete all prepared joints within a single work day. Care must be taken to assure that the tube and fittings are properly supported with a reasonable, uniform capillary space around the entire circumference of the joint. Uniformity of capillary space will ensure good filler metal penetration if the guidelines of successful joint making are followed. Excessive joint clearance can cause the filler metal to crack under stress or vibration.

Heating - Because of the open flame and high temperatures required for soldering and the flammability of the gases used, safety precautions must be observed. The heat is generally applied by use of an air/fuel torch. These torches can cause acetylene or a variety of LP gases. Electric resistance pliers can also be used.

Heating should begin with the flame perpendicular to the tube. This preheat will conduct the initial heat into the socket for even distribution of heat inside and out. Preheating depends upon the size of the joint - experience will indicate the proper amount of time. The flame should not be moved onto the fitting. Move the flame from the fitting socket onto the tube a distance equal to the fitting socket. Touch the solder to the joint. If the solder does not melt, remove it and continue the heating process. Be careful not to overheat or direct the flame into the fitting cup. This action can cause the flux to burn and destroy its effectiveness. When the melting temperature has been reached, heat may be applied to the base of the cup to aid capillary action in drawing the solder into the cup.

Applying Solder - When the tube is in a horizontal position, start applying the solder slightly off-center of the bottom of the joint. Proceed across the bottom of the fitting and up to the top-center position. Return to the point of beginning, overlap the starting point and then proceed up the incompleted side to the top. Again, overlapping the solder. Molten solder will be drawn into the joint by capillary action regardless if the solder is being fed upward, downward or horizontally.

Cooling & Cleaning - After the joint has been completed, natural cooling is best. Shock cooling may cause unnecessary stresses on the joint and may result in eventual failure. Once the fitting is cool, clean off any remaining flux with a wet rag.

Brazing

Applying Flux - The fluxes used for brazing copper joints are different in composition from soldering fluxes. They cannot, and should not, be used interchangeably.

Brazing fluxes are water based. Similar to soldering fluxes, brazing fluxes dissolve and remove residual oxides from the metal surfaces, they protect the metal surfaces from re-oxidation during heating and they promote the wetting of the surfaces to be joined by the brazing filler metal. Fluxes also provide the craftsman with an indication of temperature. Application of the flux is the same as when soldering. If the outside of the fitting and the heat affected area of the tube are covered with flux, it will prevent oxidation and greatly improve the appearance of the joint.

Brazing Filler Metals - There are two general types of brazing filler metal used for joining copper tube: BCuP (Brazing - Copper - Phosphorus) and BAg (Brazing - Silver). These brazing filler metals are classified according to their components.

BCuP filler metals are preferred for joining copper tube and fittings. The phosphorus in these filler metals acts as a fluxing agent and the lower percentage of silver makes them relatively low cost filler metals. When using copper tube, wrought copper fittings and BCuP brazing filler metal, fluxing is an option due to the self-fluxing action of the phosphorus present in all components of the brazed joint.

The choice of brazing filler metals depends upon four main factors:

- dimensional tolerance of the joint
- type and material of fitting (cast or wrought)
- desired appearance
- cost

Heating - Oxy/fuel torches are generally used when brazing because of the higher temperatures required. Due to recent innovations in air/fuel torch tip design, they can now be used on a wider variety of size for soldering and brazing.

When working with temperatures this high, safety precautions must be followed and care taken to protect both the operator and the materials being used.

The heating operation is the same as for soldering. First preheat the tube and then the tube and fitting. When the brazing filler metal starts to melt, apply the heat at the base of the fitting socket to help draw the brazing filler metal in by capillary action.

Applying Brazing Filler Metal - Remember to allow the heat of the joint to melt the filler metal. Do not melt the filler metal with the torch. The melted filler metal will be drawn into the joint by capillary action. It is very important that the flame be in continuous motion and should not be allowed to remain on any one point long enough to burn through the tube or fitting. When the joint is complete, a continuous filler should be visible completely around the joint. If the filler metal fails to flow, or has the tendency to ball-up, it indicates oxidation on the metal surfaces or insufficient heat on the parts to be joined. If the filler metal refuses to enter the joint and tends to flow over the outside of either part of the joint, it indicates that this part is overheated or that the other part is underheated.

Cooling and Cleaning - When the joint is complete, allow it to cool naturally. Flux residues can be removed by washing with hot water and brushing with a stainless steel wire brush.

Summary

If the parts to be joined are properly prepared, properly heated and the correct filler metal is used, the finished joint should be sound. Soldered or brazed copper piping systems, when installed properly, will provide years of safe and reliable service. Proper training of the correct installation techniques, such as those just covered, will give the craftsman the ability to achieve consistently reliable soldered and brazed joints in all diameters.

Prepared with technical assistance from the Copper Development Association.

Comparison Chart of Product Numbers

Mueller #	EPC #
A 01203	10020353
A 01278	10020354
A 01366	10020355
A 01467	10020357
A 02529	10020356
A 02574	10020358
A 02614	10020359
A 02650	10020360
A 02675	10020361
A 02708	10020996
A 03167	10020537
A 03168	10020538
A 03171	10020539
A 07679	10020287
A 11351	10020288
A 11352	10020289
A 11353	10020290
A 11367	10020094
A 11395	10020093
A-01211	10020653
W 01001	10020109
W 01003	10020956
W 01004	10020991
W 01009	10020694
W 01010	10020112
W 01011	10020625
W 01017	10020690
W 01019	10020113
W 01021	10020114
W 01022	10020603
W 01023	10020115
W 01025	10020116
W 01027	10020117
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W 01029	10020118
W 01030	10020119
W 01031	10020120
W 01034	10020122
W 01035	10020121
W 01036	10020123
W 01037	10020124
W 01038	10020125
W 01040	10020606
W 01047	10020608
W 01049	10020126
W 01050	10020127
W 01051	10020128
W 01052	10020129
W 01055	10020610
W 01056	10020130
W 01058	10020131
W 01060	10020132
W 01063	10020612
W 01064	10020133
W 01065	10020134
W 01067	10020135
W 01069	10020136
W 01072	10020614
W 01073	10020137
W 01073	10020137
W 01074	10020138
W 01075	10020139
W 01077	10020140
W 01079	10020141
W 01083	10020142
W 01084	10020143
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W 01094	10020147
W 01095	10020148
W 01105	10020037
W 01106	10020038
W 01107	10020036
W 01113	10020040
W 01114	10020041

Mueller #	EPC #
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W 01116	10020042
W 01123	10020044
W 01124	10020045
W 01125	10020043
W 01126	10020046
W 01129	10020048
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W 01181	10020069
W 01187	10020070
W 01188	10020504
W 01189	10020071
W 01196	10020072
W 01199	10020073
W 01206	10020000
W 01207	10020500
W 01214	10020002
W 01215	10020666
W 01216	10020003
W 01223	10020005
W 01224	10020006
W 01225	10020004
W 01226	10020007
W 01230	10020009
W 01231	10020008
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W 01263	10020017
W 01264	10020019
W 01265	10020020
W 01270	10020022
W 01271	10020021
W 01272	10020023
W 01278	10020025
W 01279	10020024
W 01280	10020501
W 01287	10020026
W 01288	10020502
W 01288	10020177
W 01296	10020027
W 01302	10020291
W 01306	10020292
W 01312	10020293
W 01314	10020294
W 01315	10020295
W 01317	10020296
W 01320	10020297
W 01321	10020298
W 01322	10020299

Mueller #	EPC #
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W 01326	10020301
W 01327	10020302
W 01328	10020303
W 01337	10020304
W 01338	10020305
W 01339	10020306
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W 01376	10020324
W 01377	10020325
W 01378	10020326
W 01379	10020327
W 01381	10020328
W 01382	10020329
W 01383	10020340
W 01386	10020341
W 01387	10020342
W 01388	10020343
W 01389	10020344
W 01425	10020076
W 01431	10020077
W 01432	10020241
W 01446	10020078
W 01447	10020506
W 01463	10020079
W 01471	10020080
W 01479	10020081
W 01487	10020082
W 01525	10020029
W 01526	10020028
W 01531	10020030
W 01546	10020031
W 01563	10020032
W 01571	10020033
W 01579	10020034
W 01587	10020035
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W 01715	10020330
W 01717	10020086
W 01720	10020087
W 01721	10020088
W 01725	10020089
W 01726	10020331
W 01737	10020090
W 01739	10020091
W 01743	10020692
W 01750	10020620
W 01758	10020092
W 01901	10020169
W 01902	10020170
W 01903	10020171
W 01904	10020172
W 01905	10020173
W 01906	10020174
W 01907	10020175
W 01908	10020176
W 01909	10020616
W 01910	10020178
W 01911	10020179

Mueller #	EPC #
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W 02003	10020208
W 02009	10020209
W 02011	10020513
W 02017	10020210
W 02019	10020894
W 02022	10020211
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W 02047	10020626
W 02049	10020217
W 02051	10020218
W 02056	10020220
W 02063	10020264
W 02064	10020665
W 02065	10020994
W 02072	10020265
W 02073	10020332
W 02077	10020222
W 02078	10020224
W 02082	10020266
W 02083	10020226
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W 02090	10020230
W 02092	10020267
W 02093	10020640
W 02095	10020641
W 02097	10020512
W 02305	10020231
W 02312	10020232
W 02321	10020233
W 02326	10020234
W 02330	10020235
W 02334	10020236
W 02344	10020237
W 02350	10020275
W 02355	10020276
W 02359	10020277
W 02363	10020278
W 02368	10020642
W 02384	10020238
W 02385	10020239
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W 02655	10020510
W 02659	10020645
W 02684	10020896
W 02701	10020248
W 02710	10020250
W 02715	10020249
W 02716	10020251
W 02717	10020252
W 02719	10020253
W 02722	10020254
W 02723	10020639

Mueller #	EPC #
W 02728	10020255
W 02734	10020257
W 02735	10020258
W 02736	10020259
W 02747	10020262
W 02749	10020993
W 02755	10020263
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W 03030	10020186
W 03034	10020187
W 03044	10020188
W 03050	10020189
W 03055	10020190
W 03059	10020191
W 03063	10020192
W 03067	10020193
W 03070	10020194
W 03073	10020195
W 03312	10020196
W 03321	10020197
W 03326	10020198
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W 03373	10020627
W 04000	10020371
W 04001	10020379
W 04002	10020381
W 04003	10020383
W 04004	10020654
W 04005	10020373
W 04006	10020386
W 04007	10020390
W 04008	10020391
W 04009	10020393
W 04010	10020394
W 04012	10020706
W 04013	10020395
W 04014	10020392
W 04015	10020380
W 04016	10020372
W 04017	10020396
W 04019	10020399
W 04020	10020400
W 04022	10020401
W 04029	10020389
W 04031	10020402
W 04032	10020404
W 04033	10020405
W 04034	10020406
W 04035	10020407
W 04037	10020408
W 04041	10020409
W 04043	10020410
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W 04045	10020413
W 04046	10020397
W 04047	10020388
W 04048	10020416
W 04049	10020418
W 04050	10020419
W 04051	10020420

Mueller #	EPC #
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W 04055	10020422
W 04056	10020423
W 04058	10020424
W 04059	10020425
W 04061	10020426
W 04062	10020427
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W 06032	10020348
W 06036	10020347
W 06051	10020647
W 06056	10020351
W 06058	10020350
W 06060	10020349
W 06074	10020648
W 06092	10020649
W 07002	10020095
W 07004	10020096
W 07006	10020097
W 07007	10020098
W 07008	10020099
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W 08005	10020597
W 10101	10020149
W 10108	10020150
W 10109	10020151
W 10110	10020152
W 10111	10020153
W 10130	10020168
W 10143	10020622

Mueller #	EPC #
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W 10145	10020155
W 10146	10020157
W 10147	10020158
W 10148	10020159
W 10149	10020160
W 10150	10020161
W 10151	10020162
W 10152	10020163
W 10153	10020164
W 10154	10020165
W 10155	10020166
W 10156	10020167
W 10157	10020156
W 10900	10020624
W 40100	10020431
W 40101	10020655
W 40102	10020466
W 40103	10020468
W 40104	10020469
W 40105	10020470
W 40106	10020471
W 40107	10020472
W 40109	10020473
W 40110	10020474
W 40111	10020475
W 40112	10020476
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W 40121	10020445
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W 40125	10020493
W 40126	10020656
W 40127	10020657
W 40128	10020494
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W 40131	10020497
W 40132	10020498
W 40133	10020499
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W 40135	10020551
W 40136	10020552
W 40137	10020553
W 40138	10020554
W 40139	10020555
W 40140	10020556
W 40144	10020467
W 40145	10020569
W 40146	10020568
W 40147	10020567
W 40148	10020566
W 40149	10020565
W 40150	10020564
W 40151	10020563
W 40152	10020561
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W 40158	10020571
W 40159	10020570
W 40161	10020583
W 40162	10020582
W 40163	10020581
W 40164	10020580
W 40165	10020579
W 40167	10020578

Mueller #	EPC #
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W 40178	10020659
W 40179	10020660
W 40181	10020658
W 40190	10020588
W 40191	10020529
W 40192	10020530
W 40193	10021002
W 40194	10021003
W 40195	10020531
W 40196	10020708
W 40197	10020662
W 40198	10020661
W 40200	10020589
W 40204	10020525
W 40205	10020526
W 40206	10020527
W 40208	10020528
W 40212	10020524
W 40213	10020519
W 40215	10020520
W 40216	10020522
W 40220	10020557
W 40221	10020559
W 40222	10020560
W 40230	10020414
W 40232	10020415
W 40237	10020459
W 40238	10020463
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W 40244	10020465
W 40245	10020485
W 40247	10020486
W 40249	10020489
W 40250	10020558
W 40278	10020487
W 40302	10020362
W 40306	10020363
W 40313	10020367
W 40324	10020374
W 40325	10020375
W 40330	10020376
W 40332	10020378
W 40350	10020382
W 40358	10020384
W 40363	10020385
W 40368	10020365
W 40400	10020590
W 40500	10020591
W 40503	10020534
W 40504	10020533
W 40505	10020532
W 60110	10020651
W 60111	10020650
W 60140	10020652
W 60999	10020281
W 61000	10020283
W 61001	10020284
W 61002	10020285
W 61003	10020286
W 61008	10020282
W 61009	10020646
W04018	10020398

Comparison Chart of Product Numbers

NIBCO #	EPC #
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9000153	10020956
9000200	10020991
9000253	10020110
9000300	10020111
9000350	10020622
9000353	10020694
9000400	10020112
9000450	10020625
9001000	10020890
9001003	10020690
9001020	10020113
9001060	10020114
9001100	10020155
9001101	10020603
9001150	10020115
9001170	10020116
9001180	10020117
9001190	10020156
9001193	10020604
9001210	10020118
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9001230	10020120
9001250	10020157
9001251	10020122
9001270	10020121
9001301	10020123
9001350	10020124
9001370	10020125
9001393	10020606
9001451	10020158
9001453	10020608
9001500	10020126
9001520	10020127
9001550	10020128
9001600	10020129
9001700	10020159
9001703	10020610
9001750	10020130
9001800	10020131
9001850	10020132
9002000	10020160
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9002450	10020138
9002500	10020139
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9002570	10020141
9002650	10020162
9002700	10020142
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9002800	10020144
9002850	10020145
9003050	10020163
9003100	10020146
9003150	10020147
9003200	10020148
9003450	10020164
9003500	10020149
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9025900	10020024
9025950	10020025
9026000	10020501
9026150	10020026
9026400	10020027
9027650	10020028
9028100	10020029
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9028400	10020177
9028550	10020031
9028750	10020032
9029000	10020033
9029150	10020034
9029300	10020035
9030150	10020038
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9032090	10020069
9032100	10020068
9032110	10020067
9032300	10020070
9032450	10020504
9032610	10020072
9032820	10020073
9032870	10020074
9033800	10020076
9033900	10020077
9033950	10020505
9034000	10020241
9034050	10020078
9034300	10020079
9042500	10020182
9042600	10020183
9042700	10020184
9042801	10020185
9042860	10020186
9042901	10020187
9043001	10020188
9043100	10020189
9043200	10020190
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9046250	10020199
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9046400	10020201
9046500	10020202
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Marketing Policy

Delays:
All orders are accepted subject to the understanding that we are not responsible for delays caused by fires, floods, accidents, strikes or other circumstances beyond our control.

Warranty:
Elkhart Products Corporation, Plumbing Products Division, warrants that all fittings will be free from defects in materials and workmanship which will impair their usefulness provided they are used in the service for which they are recommended. Any fitting which proves to be defective will be replaced or a credit issued but no incidental labor charges, expenses or damages will be allowed.

Dimensions:
Recognizing the need for dimensions to enable our customers to figure tube lengths, we have included roughing-in dimensions in this catalog. These dimensions are furnished in accordance with the latest information available at the time of publication and are for estimating purposes only. If more exact information is required, it is suggested that the factory be consulted.

Packaging:
EPC Wrot fittings are packaged in cartons with easy to read labels to facilitate handling and identification. No individual carton contains more than 100 pieces and most items are packaged in master cartons clearly marked with identifying labels. Box quantities are shown in the catalog next to each item. Where no quantities are shown, packaging will be subject to customer's specification.

Also available in individual bags with bar coding.

Factory Option Items:
Factory option items (indicated by an asterisk) are available with an 8-10 week lead time and special pricing. They are non-cancelable and non-returnable. Elkhart Products cannot be responsible for delays on special order items.

Special Cleaning:
EPC fittings may be cleaned and bagged or cleaned and capped for oxygen orders. Consult the EPC representative nearest you for price and delivery.

Net Weights:
Approximate net weights in pounds are shown for each item in the catalog for the purpose of estimating the weight of shipments to meet the terms for freight allowance.

Sizes:
Unless otherwise specifically stated, all copper end sizes shown in this catalog are nominal tube sizes. For the guidance of the refrigeration trade and others accustomed to dealing in "O.D. tube sizes," the nominal size of a fitting is always 1/8" less than the actual O.D. size of the tube used with it.

Return Goods:
A 25% restocking charge will apply to all goods returned, not due to defects in materials, workmanship, or shipping errors. Please consult your EPC representative for return goods authorization.

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