K65

K65 Technical Brochure

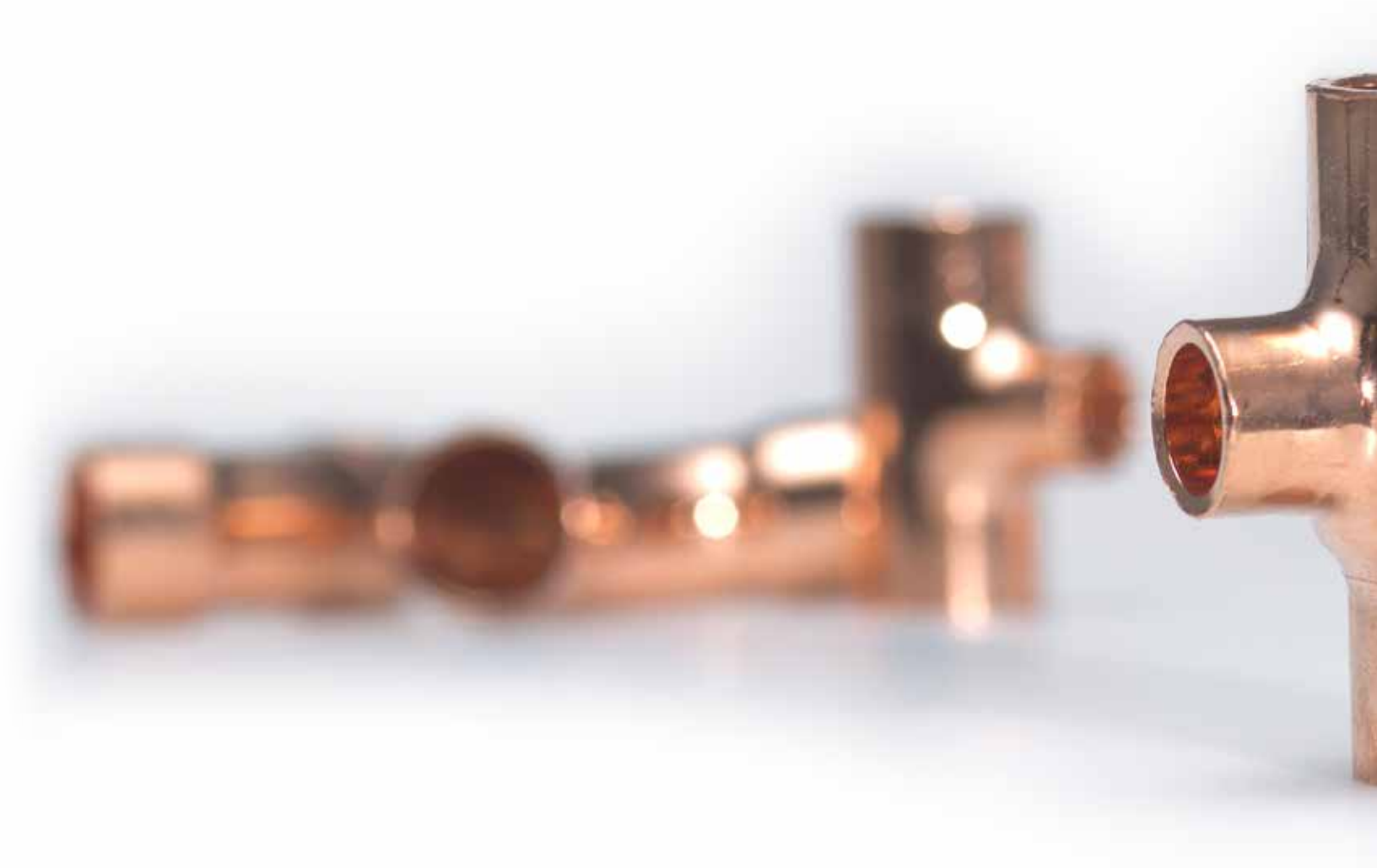
Conex Bänninger

an IBP GROUP company

K65

Conex Bänninger

Conex Bänninger specializes in providing fittings, valves and accessories across the globe by offering innovative and versatile solutions. Since 1909, Conex Bänninger has produced over 22 billion fittings and valves and has built its reputation for quality European manufacturing, backed by first-class customer service and unrivalled expertise. Passionate about excellence, Conex Bänninger is a by-word for quality in the domestic, commercial, industrial, shipbuilding, air conditioning and refrigeration markets worldwide. Conex Bänninger is an ISO 9001 quality assured company, which assures you the very best in quality.



K65

Developed in conjunction with Wieland K65 high strength copper alloy fittings enable simple, safe and economical installation of high pressure refrigeration applications up to 130 bar. K65 fittings are particularly suited for use with CO_2 (R-744) in transcritical applications.

wieland

The name Wieland has stood for quality for almost two centuries. Every individual employee of Wieland is committed to offering quality - closely guided by what you want! High levels of service and customer orientation are further defining features of our quality. For you, this means greater security more flexibility and an even more individual approach. Best quality. Better service.

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Contents

Note: To keep up-to-date on K65 fittings please visit: www.conexbanninger.com

1. Applications

K65 fittings were developed in conjunction with Wieland in response to the use of CO_2 R-744 as an environmentally friendly (zero ODP and GWP of one) refrigerant for commercial refrigeration applications, in particular supermarket refrigeration systems. The use of CO_2 as a refrigerant led to high operating pressures, and therefore variations in the gauge of tube being specified. K65 simplifies the selection process, as the K65 alloy provides a mechanical strength high enough to withstand the pressure ratings required. K65 is a safe and economical solution for refrigeration systems with operating pressures up to 130 bar.

2. Features and Benefits

Operating Pressure 1885 PSI:	K65 fittings are are UL listed refrigerant fittings with a maximum operating pressure of 1885 PSI.
Easy to identify – even after installation:	K65 is readily identifiable and easy to distinguish from traditional copper due to its slightly magnetic property, the K65 and 130 bar markings.
Limited warranty:	When professionally installed K65 fittings are covered by a twenty five year limited warranty. For full terms and conditions please refer to section 13.0.
Range:	Wide range of fittings from ⅜" up to 2 ⅛".
Jointing:	K65 has excellent processing properties that are similar to those of copper. Copper iron (EN CuFe2P CW107C, UNS C19400) tubes can be brazed to K65 fittings without any need for expensive or specialized equipment and skills required for TIG welding of stainless steel tubes.
Corrosion resistance:	K65 (EN CuFe2P CW107C, UNS C19400) is immune to stress corrosion cracking and exhibits a high resistance to natural atmospheric corrosion. Note: K5130017017017 and K5130017017013 are manufactured from UNS C37700.
Certification:	K65 fittings are UL listed, refrigerant fitting report reference SA44668. K65 fittings are UL listed, approved use for field and factory installations.
Electrical continuity:	Maintains earth continuity without the need for additional earth continuity straps.
Lighter for easy handling:	The lower weight of the tubes (when compared with thick wall standard copper tubes) results in a product that is easier to handle, for example, when mounting the tubes on ceilings.
Lower installed cost:	K65's high mechanical strength enables tube and fittings to be made lower in weight when compared with traditional thick walled copper or stainless steel. This is supported by traditional brazed jointing leading to lower installed cost and improved handling.
Quality:	Conex Bänninger is an ISO 9001 quality assured company, which assures you the very best in quality.

3. Material

Material designation Wieland K65, EN CuFe2P CW107C, UNS C19400.

K65 is immune to stress corrosion cracking. Furthermore, K65 has good corrosion resistance in natural and industrial atmospheres as well as water for industrial use, aqueous solutions and alkaline solutions, water vapor, non-oxidising acids and neutral saline solutions.

For applications other than CO_2 please contact technical@ibpgroup.com.

4. Technical Data

Physical Properties	
Material composition	Fe 2.10 - 2.60 %, Zn 0.05 - 0.20 %, P 0.015 - 0.15 %, Pb max. 0.03 %, Cu balance
Thermal conductivity	>260 W/(m.K)
Coefficient of thermal expansion	17.6 x 10^{-6}/K between 0 and 300 °C
Density	8.91 g/cm^3
Modulus of elasticity	123 GPa
Specific heat capacity	0.385 J/(g K)
Mechanical properties (annealed)	R_m min. >300 N/mm^2 $R_{p0.2}$ max. 250 N/mm^2 A min. >25 % For the calculation of the required wall thickness see VdTÜV Material Sheet 567
Operating Parameters	
Applications	Air conditioning and refrigeration in particular high pressure CO_2 (R-744) **Note:** Not for use with Ammonia (R-717) nor Acetylene
Maximum operating pressure	1885 psi / 130 bar / 13 MPa at 302 °F / 150 °C **Note:** Other pressure ranges for tubes are available
Burst pressure >3 x maximum operating and abnormal pressure ISO 5149-2, EN 378-2.	5,656 psi / 390 bar / 39 MPa
UL recognized continuous operating temperature	-40 °F to 250 °F / -40 °C to 121 °C
Operating temperature range	-320 °F to 302 °F / -196 °C to 150 °C
Tube compatibility	K65 fittings are compatible with tubes manufactured from copper iron alloy EN CuFe2P CW107C, UNS C19400 with the external dimensions and tolerances conforming to ASTM B280 and ASTM B88

Note: For detailed technical information on the jointing and fabrication properties of K65 please contact Conex Bänninger Technical Department, technical@ibpgroup.com

5. Standards, Specifications & Certifications

- ASTM B88 - 20 Standard Specification for Seamless Copper Water Tube.
- ASTM B280 - 20 Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
- ASME B31.3-2018 Process Piping.
- ASME B31.5 - 2019 Refrigeration Piping and Heat Transfer Components.
- ASME B16.22 - 2018 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
- ASHRAE 15 - 2016 Safety Standard for Refrigeration Systems, compliant.
- ISO 5149-2, EN378-2 5.3.2.2.3 Strength pressure test, compliant.
- K65 fittings are UL listed, refrigerant fitting report reference SA44668.
- K65 fittings are UL listed, approved use for field and factory installations.

6. Quality Assurance

Both Wieland and Conex Bänninger are ISO 9001 quality assured companies.

As per the requirements of the European Pressure Equipment Directive 2014/68/EU, K65 fittings are checked according to the specifications of the VdTÜV material data sheet 567 and AD 2000-datasheet W 0:2016-05 General principles for materials. Furthermore, Wieland and Conex Bänninger production systems are certified according to the Pressure Equipment Directive by TÜV Süd, and are regularly monitored by a third party.
This ensures a consistently high level of product quality.

7. Size Availability

K65 tube and fittings are available in the following sizes from stock: ⅜", ½", ⅝", ¾", ⅞", 1 ⅛", 1 ⅜", 1 ⅝", 2 ⅛" and 2 ⅝".

8. Marking and Cleanliness

All K65 tubes and fittings are marked with the manufacturers own designation, the K65 mark and the corresponding pressure rating, e.g. 130 bar. Tube ends are capped with a green plug. In addition, the material is slightly magnetic and can be easily distinguished from copper by means of a strong magnet – a helpful and practical advantage. Both tubes and fittings fully comply with the cleanliness requirements of ASTM B280.

9. Brazing

K65 has excellent processing properties which are similar to those of pure copper. K65 tubes may be joined with K65 fittings through brazing.

Brazed joints should only be made by trained and experienced staff, e.g. a certified installer who holds a current certificate. Typical requirements are set out in AWS B2.2/B2.2M:2016 Specification for Brazing Procedure and Performance Qualification.

Silver-containing brazing alloys with a silver content of min. 2 % are recommended.

For the brazing of brass products to K65 it is recommended that Ag 145 / Ag 155 / Ag 156 and AG 244 or similar brazing alloy is used.

Typically, no flux is necessary for the brazing of K65 tube and K65 fittings when using silver-containing CuP brazing alloys. For the joining of copper alloys such as brass and red brass the additional use of fluxes, e.g. FH10 or FH12 according to AWS B2.2/B2.2M:2, is recommended. This ensures optimum filling of the capillary gap. Residual flux has to be removed after brazing (e.g. with a moist cloth).

The processing instructions as detailed in ISO 5149-2, for the installation of tubes and fittings made of copper for air conditioning and refrigeration applications, have to be followed. In addition, compliance with the basic requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 2: Alternative Rules (European Pressure Equipment Directive 2014/68/EU) has to be examined in individual cases. The safety precautions of high-pressure systems, particularly for pressure testing and commissioning have to be observed, if necessary by calling in experts. During brazing, it is imperative that the brazed joint is handled and heated properly.

In difficult-to-reach joints, as may occur in complex assemblies, we still recommend the use of brazing alloys with a silver content of minimum 2 %. If higher silver content alloys are to be used such as Ag 134 or Ag 145, using fluxes is recommended. Please note these brazing alloys are characterised by a higher gap-filling rate and care needs to be taken to ensure the brazing alloy is not flowing through the joint into the tube.

Flux residue must be removed so the joint can be properly inspected, pressure and leak tested (reduce the risk of early life failures); minimise the potential of corrosion through hygroscopic action and allow any protective coatings to adhere to the base metal.

Selection of EN ISO 17672 recommended brazing alloys

Solder according to ISO 17672	Operating temperature °F	Operating temperature °C	Composition in per cent by weight				
			Ag	Cu	Zn	Sn	P
CuP 279	1,364	740	2	91.7	-	-	6.3
CuP 281	1,310	710	5	89	-	-	6.0
CuP 284	1,292	700	15	80	-	-	5.0
Ag 244*	1,346	730	44	30	26	-	-
Ag 134	1,310	710	34	36	27.5	2.5	-
Ag 145*	1,238	670	45	27	25.5	2.5	-
Ag 155*	1,220	660	55	21	22	2	-
Ag 156*	1,220	660	56	22	17	5	-

Recommended fluxes

AWS A5.31M/A5.31	Temp °F	Temp °C	Note
FH 10	1,022-1,778	550-970	Flux residues are corrosive and must be removed
FH 12	968-1,886	520 - 1030	Flux residues are corrosive and must be removed

Notes:
A suitable inert gas such as oxygen free nitrogen (OFN) should be passed through the pipework during the brazing process to prevent the build-up of oxides or scale on the inner surface of the tube.

*Brazing alloys suitable for brazing brass tees K5130017017017 and K5130017017013.

10. Installation Process

General

Transport and storage: Tubes and fittings should not be stored outdoors and shall be protected from moisture and dust.

Design considerations: All refrigeration pipelines should be designed so that the number of joints is kept to a practical minimum.

Pipework support: All pipework should be supported by the use of appropriate clips, brackets or supports.

Pipework protection: Tubing and fittings shall be protected as far as possible against adverse environmental or other external effects.

Pipework identification: Every refrigeration system and its main components shall be identifiable by marking. This marking shall always be visible.

Pipework insulation: Sufficient space shall be provided to allow for insulation where insulation of the piping is required. The insulation thickness and conductivity shall conform to federal, state and local requirements and shall prevent formation of condensation. Insulation containing ammonia should not be used with copper based pipework systems.

Refrigeration pipelines should be designed in compliance with the following key standards and in line with federal, state and local regulations, codes of practice and bylaws governing the installation. All applicable health and safety practices must be adhered to.

- ISO 5149-2: 2014 Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation.
- ISO 14903:2012 Refrigeration systems and heat pumps - Qualification of tightness of components and joints.
- ASHRAE 15 - 2016 Safety Standard for Refrigeration Systems.
- ASME B31.5 - 2016 Refrigeration Piping and Heat alignment.
- ASME Boiler and Pressure Vessel Code, Section VIII, Division 2: Alternative Rules (European Pressure Equipment Directive 2014/68/EU).

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Health and safety:

When brazing always wear appropriate personal protective equipment; gloves, flame retardant overalls, eye, head and foot protection. Working areas where brazing processes are to be performed must be well ventilated and free from fire risk. Fumes and gases detrimental to health are emitted from most brazing processes; these must be disposed of quickly, either by use of exhaust ventilation equipment or adequate circulation of fresh air throughout the working area. If necessary where these criteria cannot be assured operators should wear breathing apparatus. A full risk assessment must be completed for all the activities involved specific to the work area where the brazing is being carried out.

Assembly preparation:

1. Check sizes

- Ensure the tube and fitting sizes are compatible.

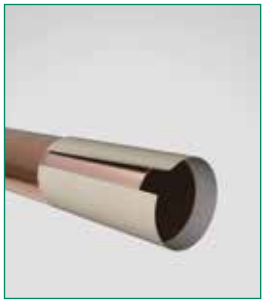
2. Cut to length

- Cut the tube end square, an electric tube cutter is recommended.
- Check the tube has retained its shape and is damage free.

3. Deburr the tube end

- Deburr the inside, and outside of the tube.

4. Clean the tube end



- Clean the tube end using a cleaning pad.
- Tube ends must be free from oxidation, dirt and debris.

5. Mark insertion depth

- Mark the correct insertion depth on the tube.
- The mark will be used as a visual aid prior to brazing.

To braze K65 fittings to K65 tubes without flux:

1. Fully insert tube

- Insert the tube fully into the socket to ensure joint integrity.
- Use the insertion depth mark as a guide.

2. Apply heat evenly

- Apply heat, keeping the flame moving to ensure that parent metals are evenly heated to a cherry-red color.

  Note: A suitable inert gas such as oxygen free nitrogen (OFN) should be passed through the pipework during the brazing process to prevent the build-up of oxides or scale on the inner surface of the tube.

3. Braze Joint

- Touch a brazing rod, strip or wire to the joint mouth and melt in the flame.
- Filler metal is drawn into the fitting socket by capillary action.
- A continuous fillet of filler metal will be visible around the joint.
- To aid development of the fillet, the flame should be kept slightly ahead of the point of the filler metal.

4. Allow joint to cool

- Once brazing is complete, heating should be discontinued.
- During cooling, do not move or twist the components.

Note: Brazing fillers such as CuP279, CuP281 and CuP284 do not require additional flux when K65 components are brazed.

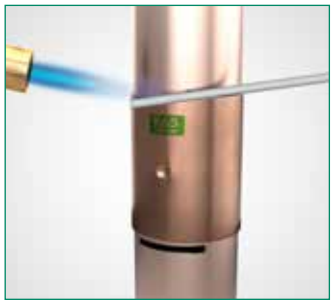
To braze K65 fittings using a flux coated brazing rod:

Follow assembly steps 1-5 under 'assembly preparation' then:

1. Fully insert tube

- Insert the tube fully into the socket to ensure joint integrity.
- Use the insertion depth mark as a guide.

2. Apply heat and flux



- Apply heat, keep the flame moving, apply flux from the outside of the rod. Be careful to avoid localized overheating which may melt the base metal and burn a hole through the tube.
- At the correct temperature, the flux should be clear and flow over the joint area.The parent metals should show a cherry-red color.

  Note: A suitable inert gas such as oxygen free nitrogen (OFN) should be passed through the pipework during the brazing process to prevent the build-up of oxides or scale on the inner surface of the tube.

3. Braze joint

- Touch the brazing rod to the joint mouth and melt the filler metal in the flame.
- Filler metal is drawn into the fitting socket by capillary action.
- A continuous fillet of filler metal will be visible around the joint.
- To aid development of the fillet, the flame should be kept slightly ahead of the point of the filler metal.

4. Allow to cool

- Once brazing is complete, heating should be discontinued.
- During cooling, do not move or twist the components.

5. Remove flux residue

- Flux residue must be removed so the joint can be properly inspected, pressure and leak tested (eliminate early life failures), eliminate risk of corrosion through hygroscopic action and allow any protective coatings to adhere to the base metal.
- Clean the outside of the joint(s) with a wet cloth, or remove flux residue using an abrasive pad.

11. Product Range

K65 fittings

Material: Wieland K65, EN CuFe2P CW107C, UNS C19400.
Note: K5130017017017 and K5130017017013 are manufactured from UNS C37700.

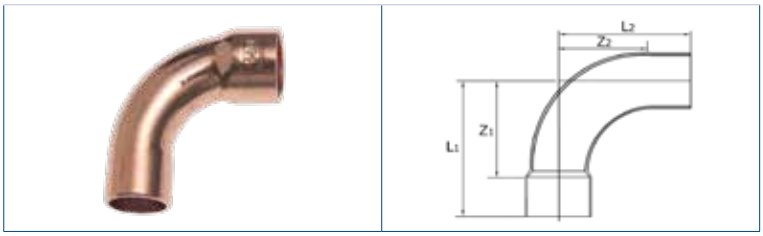
Maximum operating and abnormal pressure: 1885 psi / 130 bar / 13 MPa at 302 °F / 150 °C.

K65 fittings internal dimensions and tolerances comply with product standards ASME B16.22.

K65 fittings are compatible with copper iron tubes manufactured from EN CuFe2P CW107C, UNS C19400 with the external dimensions and tolerances conforming to ASTM B88 and ASTM B280.

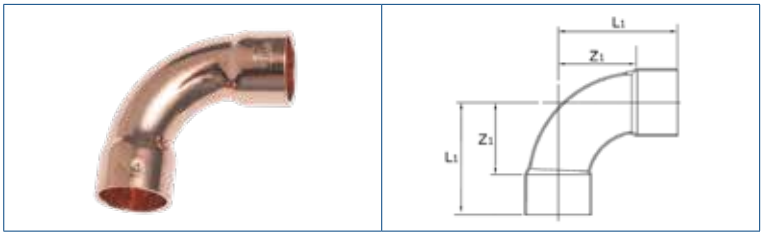
Note: Because of the high strength of EN CuFe2P CW107C, UNS C19400 the wall thickness of both tube and fittings is thinner than that specified in the above standards for the comparable pressure rating.

K5001
Street Elbow 90°



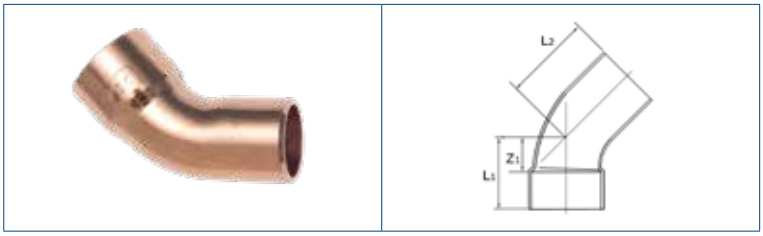
Item Code	Size	L1 Inches	L1 mm	L2 Inches	L2 mm	Z1 Inches	Z1 mm	Z2 Inches	Z2 mm
K5001003000000	⅜"	0.75	19	0.93	23.5	0.47	12	0.57	14.5
K5001004000000	½"	1.10	28	1.10	28	0.77	19.5	0.69	17.5
K5001005000000	⅝"	1.14	29	1.30	33	0.73	18.5	0.81	20.5
K5001006000000	¾"	1.56	39.5	1.59	40.5	1.06	27	1.02	26
K5001007000000	⅞"	1.77	45	1.91	48.5	1.16	29.5	1.22	31
K5001009000000	1 ⅛"	2.11	53.5	2.19	55.5	1.50	38	1.50	38
K5001011000000	1 ⅜"	2.64	67	2.80	71	1.85	47	1.93	49
K5001013000000	1 ⅝"	3.39	86	3.39	86	2.60	66	2.52	64
K5001017000000	2 ⅛"	5.28	134	5.28	134	4.25	108	4.17	106

K5002
Elbow 90°



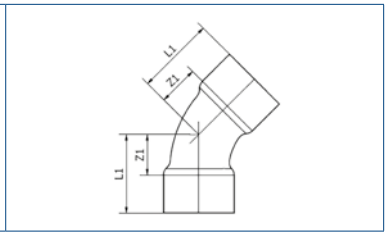
Item Code	Size	L1 Inches	L1 mm	Z1 Inches	Z1 mm
K5002003000000	⅜"	0.75	19	0.47	12
K5002004000000	½"	1.04	26.5	0.71	18
K5002005000000	⅝"	1.34	34	0.93	23.5
K5002006000000	¾"	1.65	42	1.16	29.5
K5002007000000	⅞"	1.67	42.5	1.06	27
K5002009000000	1 ⅛"	2.26	57.5	1.65	42
K5002011000000	1 ⅜"	2.64	67	1.85	47
K5002013000000	1 ⅝"	3.39	86	2.60	66
K5002017000000	2 ⅛"	5.28	134	4.25	108

K5040
Street Elbow 45°



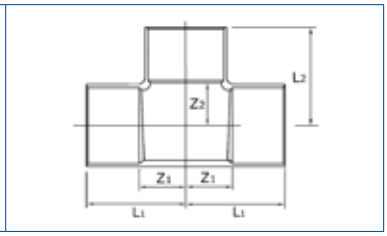
Item Code	Size	L1 Inches	L1 mm	L2 Inches	L2 mm	Z1 Inches	Z1 mm
K5040006000000	¾"	0.85	21.5	1.08	27.5	0.35	9
K5040007000000	⅞"	1.00	25.5	1.08	27.5	0.39	10
K5040009000000	1 ⅛"	1.10	28	1.22	31	0.49	12.5
K5040011000000	1 ⅜"	1.50	38	1.69	43	0.71	18
K5040013000000	1 ⅝"	1.54	39	2.01	51	0.75	19

K65



K5041
Elbow 45°

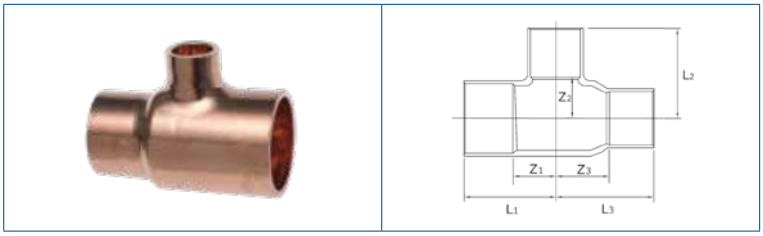
Item Code	Size	L1 Inches	L1 mm	Z1 Inches	Z1 mm
K5041003000000	⅜"	0.63	16	0.31	8
K5041004000000	½"	0.67	17	0.33	8.5
K5041005000000	⅝"	0.77	19.5	0.35	9
K5041006000000	¾"	0.85	21.5	0.35	9
K5041007000000	⅞"	1.00	25.5	0.39	10
K5041009000000	1 ⅛"	1.06	27	0.45	11.5
K5041011000000	1 ⅜"	1.54	39	0.75	19
K5041013000000	1 ⅝"	1.69	43	0.91	23



K5130
Tee Equal

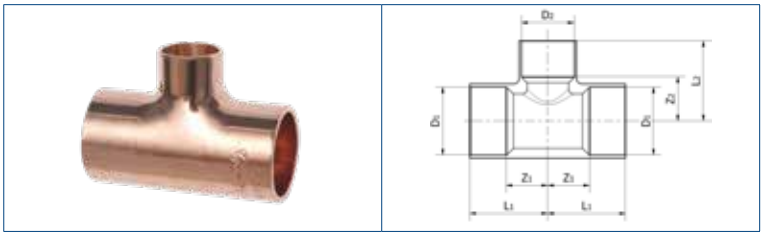
Item Code	Size	L1 Inches	L1 mm	L2 Inches	L2 mm	Z1 Inches	Z1 mm	Z2 Inches	Z2 mm
K5130003003003	⅜"	0.57	14.5	0.57	14.5	0.30	7.5	0.30	7.5
K5130004004004	½"	0.71	18	0.71	18	0.37	9.5	0.37	9.5
K5130005005005	⅝"	0.87	22	0.87	22	0.45	11.5	0.45	11.5
K5130006006006	¾"	1.02	26	1.02	26	0.53	13.5	0.53	13.5
K5130007007007	⅞"	1.20	30.5	1.20	30.5	0.59	15	0.59	15
K5130009009009	1 ⅛"	1.42	36	1.42	36	0.81	20.5	0.81	20.5
K5130011011011	1 ⅜"	1.73	44	1.73	44	0.94	24	0.94	24
K5130013013013	1 ⅝"	1.89	48	1.89	48	1.10	28	1.10	28
K5130017017017*	2 ⅛"	1.87	47.5	1.87	47.5	1.30	33	1.30	33

* Brass UNS C37700



K5130
Tee Reduced End and Branch

Item Code	Size	L1 Inches	L1 mm	L2 Inches	L2 mm	L3 Inches	L3 mm	Z1 Inches	Z1 mm	Z2 Inches	Z2 mm	Z3 Inches	Z3 mm
K5130004003003	½" x ⅜" x ⅜"	0.63	16	0.67	17	0.63	16	0.30	7.5	0.39	10	0.35	9
K5130005004004	⅝" x ½" x ½"	0.83	21	0.79	20	0.87	22	0.41	10.5	0.45	11.5	0.53	13.5
K5130009007004	1 ⅛" x ⅞" x ½"	1.02	26	1.10	28	1.26	32	0.41	10.5	0.77	19.5	0.65	16.5



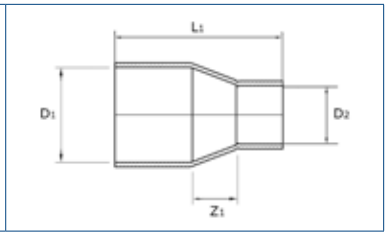
K5130
Tee Reduced Branch

Item Code	Size	L1 Inches	L1 mm	L2 Inches	L2 mm	Z1 Inches	Z1 mm	Z2 Inches	Z2 mm	D1	D2
K5130004004003	½" x ½" x ⅜"	0.63	16	0.63	16	0.30	7.5	0.35	9	½"	⅜"
K5130005005003	⅝" x ⅝" x ⅜"	0.73	18.5	0.81	20.5	0.31	8	0.53	13.5	⅝"	⅜"
K5130005005004	⅝" x ⅝" x ½"	0.83	21	0.83	21	0.41	10.5	0.49	12.5	⅝"	½"
K5130006006004	¾" x ¾" x ½"	0.85	21.5	0.89	22.5	0.35	9	0.55	14	¾"	½"
K5130006006005	¾" x ¾" x ⅝"	0.96	24.5	0.96	24.5	0.47	12	0.55	14	¾"	⅝"
K5130007007004	⅞" x ⅞" x ½"	0.98	25	0.93	23.5	0.37	9.5	0.59	15	⅞"	¾"
K5130007007005	⅞" x ⅞" x ⅝"	1.10	28	1.02	26	0.49	12.5	0.61	15.5	⅞"	¾"
K5130007007006	⅞" x ⅞" x ¾"	1.16	29.5	0.98	25	0.55	14	0.49	12.5	⅞"	⅞"
K5130009009006	1 ⅛" x 1 ⅛" x ¾"	1.16	29.5	1.22	31	0.55	14	0.73	18.5	1 ⅛"	¾"
K5130009009007	1 ⅛" x 1 ⅛" x ⅞"	1.30	33	1.34	34	0.69	17.5	0.73	18.5	1 ⅛"	⅞"
K5130011011006	1 ⅜" x 1 ⅜" x ¾"	1.34	34	1.34	34	0.55	14	0.85	21.5	1 ⅜"	¾"
K5130011011007	1 ⅜" x 1 ⅜" x ⅞"	1.46	37	1.46	37	0.67	17	0.85	21.5	1 ⅜"	⅞"
K5130011011009	1 ⅜" x 1 ⅜" x 1 ⅛"	1.52	38.5	1.46	37	0.73	18.5	0.85	21.5	1 ⅜"	1 ⅛"
K5130013013006	1 ⅝" x 1 ⅝" x ¾"	1.34	34	1.46	37	0.55	14	0.96	24.5	1 ⅝"	¾"
K5130013013007	1 ⅝" x 1 ⅝" x ⅞"	1.40	35.5	1.61	41	0.61	15.5	1.00	25.5	1 ⅝"	⅞"
K5130013013009	1 ⅝" x 1 ⅝" x 1 ⅛"	1.52	38.5	1.59	40.5	0.73	18.5	0.98	25	1 ⅝"	1 ⅛"
K5130013013011	1 ⅝" x 1 ⅝" x 1 ⅜"	1.71	43.5	1.77	45	0.93	23.5	0.98	25	1 ⅝"	1 ⅜"
K5130017017013*	2 ⅛" x 2 ⅛" x 1 ⅝"	1.87	47.5	2.17	55	1.14	29	1.38	35	2 ⅛"	1 ⅝"

* Brass UNS C37700

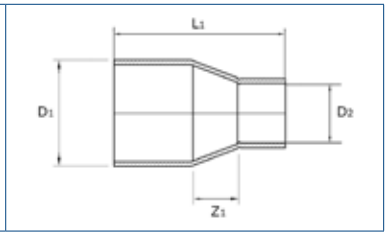
K65

K5240
Reducing Coupler



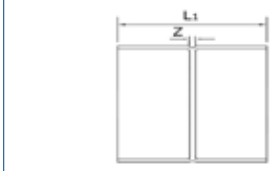
Item Code	Size	L1 Inches	L1 mm	Z1 Inches	Z1 mm	D1	D2
K5240004003000	½" x ⅜"	0.93	23.5	0.31	8	½"	⅜"
K5240005004000	⅝" x ½"	1.06	27	0.31	8	⅝"	½"
K5240006005000	¾" x ⅝"	1.12	28.5	0.22	5.5	¾"	⅝"
K5240007006000	⅞" x ¾"	1.22	31	0.12	3	⅞"	¾"
K5240009004000	1 ⅛" x ½"	1.65	42	0.71	18.0	1 ⅛"	½"
K5240009007000	1 ⅛" x ⅞"	1.65	42	0.43	11	1 ⅛"	⅞"
K5240011004000	1 ⅜" x ½"	2.01	51	0.89	22.5	1 ⅜"	½"
K5240011005000	1 ⅜" x ⅝"	2.09	53	0.89	22.5	1 ⅜"	⅝"
K5240011006000	1 ⅜" x ¾"	2.01	51	0.73	18.5	1 ⅜"	¾"
K5240011007000	1 ⅜" x ⅞"	2.01	51	0.61	15.5	1 ⅜"	⅞"
K5240011009000	1 ⅜" x 1 ⅛"	1.99	50.5	0.59	15	1 ⅜"	1 ⅛"
K5240013006000	1 ⅝" x ¾"	2.17	55	0.89	22.5	1 ⅝"	¾"
K5240013007000	1 ⅝" x ⅞"	2.20	56	0.81	20.5	1 ⅝"	⅞"
K5240013009000	1 ⅝" x 1 ⅛"	2.01	51	0.61	15.5	1 ⅝"	1 ⅛"
K5240013011000	1 ⅝" x 1 ⅜"	2.01	51	0.43	11	1 ⅝"	1 ⅜"
K5240017013000	2 ⅛" x 1 ⅝"	2.36	60	0.55	14	2 ⅛"	1 ⅝"

K5243
Fitting Reducer



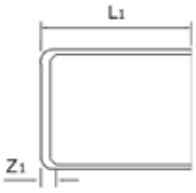
Item Code	Size	L1 Inches	L1 mm	Z1 Inches	Z1 mm	D1	D2
K5243004003000	½" x ⅜"	0.98	25	0.30	7.5	½"	⅜"
K5243005003000	⅝" x ⅜"	1.02	26	0.26	6.5	⅝"	⅜"
K5243005004000	⅝" x ½"	1.04	26.5	0.22	5.5	⅝"	½"
K5243006003000	¾" x ⅜"	1.20	30.5	0.35	9	¾"	⅜"
K5243006004000	¾" x ½"	1.18	30	0.28	7	¾"	½"
K5243006005000	¾" x ⅝"	1.20	30.5	0.22	5.5	¾"	⅝"
K5243007003000	⅞" x ⅜"	1.52	38.5	0.55	14	⅞"	⅜"
K5243007004000	⅞" x ½"	1.34	34	0.31	8	⅞"	½"
K5243007005000	⅞" x ⅝"	1.22	31	0.12	3	⅞"	⅝"
K5243007006000	⅞" x ¾"	1.34	34	0.16	4	⅞"	¾"
K5243009004000	1 ⅛" x ½"	1.54	39	0.51	13	1 ⅛"	½"
K5243009005000	1 ⅛" x ⅝"	1.59	40.5	0.49	12.5	1 ⅛"	⅝"
K5243009006000	1 ⅛" x ¾"	1.56	39.5	0.37	9.3	1 ⅛"	¾"
K5243009007000	1 ⅛" x ⅞"	1.56	39.5	0.26	6.5	1 ⅛"	⅞"
K5243011009000	1 ⅜" x 1 ⅛"	1.79	45.5	0.31	8	1 ⅜"	1 ⅛"
K5243013007000	1 ⅝" x ⅞"	2.01	51	0.53	13.5	1 ⅝"	⅞"
K5243013011000	1 ⅝" x 1 ⅜"	1.85	47	0.20	5	1 ⅝"	1 ⅜"
K5243017013000	2 ⅛" x 1 ⅝"	2.20	56	0.31	8	2 ⅛"	1 ⅝"

K5270
Coupler



Item Code	Size	L1 Inches	L1 mm	Z Inches	Z mm
K5270003000000	⅜"	0.63	16	0.08	2
K5270004000000	½"	0.79	20	0.12	3
K5270005000000	⅝"	0.91	23	0.08	2
K5270006000000	¾"	1.12	28.5	0.14	3.5
K5270007000000	⅞"	1.42	36	0.20	5
K5270009000000	1 ⅛"	1.46	37	0.24	6
K5270011000000	1 ⅜"	1.79	45.5	0.22	5.5
K5270013000000	1 ⅝"	1.81	46	0.24	6
K5270017000000	2 ⅛"	2.20	56	0.16	4

K5301
End Cap



Item Code	Size	L1 Inches	L1 mm	Z1 Inches	Z1 mm
K5301003000000	⅜"	0.39	10	0.12	3
K5301004000000	½"	0.47	12	0.14	3.5
K5301005000000	⅝"	0.59	15	0.18	4.5
K5301006000000	¾"	0.67	17	0.18	4.5
K5301007000000	⅞"	0.83	21	0.24	6
K5301009000000	1 ⅛"	0.87	22	0.26	6.5
K5301011000000	1 ⅜"	1.16	29.5	0.43	11
K5301013000000	1 ⅝"	1.26	32	0.47	12
K5301017000000	2 ⅛"	1.42	36	0.39	10

12. K65 Fittings Twenty-Five Year Limited Warranty

Conex Universal Ltd. warrants that its K65 fittings will be free of material defects resulting from errors in manufacture, for twenty-five (25) years from the date of first purchase by an end user. This warranty will be void if not professionally installed, used and maintained in accordance with the installation and maintenance instructions detailed in the K65 technical brochure.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS DESCRIPTION, EXCEPT FOR ANY REQUIREMENTS THAT ARE LEGALLY MANDATED IN THE JURISDICTION OF THE FIRST END USER'S PREMISES. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF MATERIALLY DEFECTIVE FITTINGS AT THE SOLE DISCRETION OF CONEX UNIVERSAL LTD.

At the request of Conex Universal Ltd. the claimed defective fitting(s) must be returned to the address below.* Conex Universal Ltd. reserves the right to inspect and test claimed defective fittings before deciding whether to repair or replace a fitting claimed to be defective.

This Warranty is subject to the following additional conditions:

A. Any claimed defect(s) must be reported to Conex Universal Ltd. within one month of the first occurrence of any such claimed defect, clearly setting out the nature of the claim and the circumstances surrounding it.

B. Conex Universal Ltd. shall have no liability in respect of any fitting claimed to be defective if any of the following circumstances apply:
   - defective installation;
   - normal wear and tear;
   - willful misconduct;
   - negligence or omissions of any party other than Conex Universal Ltd.;
   - abnormal working or environmental conditions;
   - failure to follow the installation and maintenance instructions detailed in the K65 technical brochure, and any other instructions of Conex Universal Ltd. communicated through the Conex Bänninger website or its successor, www.conexbanninger.com (the Website) or otherwise;
   - misuse (which includes any use of the fittings for a purpose or in a situation / environment or for an application other than that for which it was designed according to the specifications of the fittings as described on the Website or in other materials provided to the buyer from Conex Universal Ltd.); or
   - alteration or repair of any fitting without the prior written approval of Conex Universal Ltd..

C. At the request of Conex Universal Ltd., the person claiming under this warranty must deliver to Conex Universal Ltd. written evidence of the date of first purchase by an end user of the products claimed to be defective.

*** The address for returns is:**
Customer Services at IBP Group LLC.
155 Bartram Market Drive, Suite 135,
#163 Saint Johns, FL 32259.
(For returns only):
IBP Group LLC. 5810 Long Prairie Road, Suite 700.
#369 Flower Mound, Texas 75028

13.Frequently Asked Questions

1. **Where are the K65 fittings manufactured?**
   Europe.
2. **What is the maximum operating pressure for K65 fittings?**
   The maximum operating pressure for K65 fittings is 130 bar.
3. **What sizes fittings are available?**
   K65 fittings are available in the following sizes, ⅜", ½", ⅝", ¾", ⅞", 1 ⅛", 1 ⅜", 1 ⅝" and 2 ⅛".
4. **What is the guarantee on K65 fittings?**
   K65 fittings are guaranteed for 25 years, for full details please see section 12.0.
5. **Can K65 tube and fittings be used with Ammonia (R717)?**
   K65 cannot be used with Ammonia (R-717).
6. **Are there any concerns with corrosion where installations are made in coastal areas or with respect to cleaning agents?**
   K65 is immune to stress corrosion cracking. Furthermore, K65 has good corrosion resistance in natural and industrial atmospheres as well as water and water for industrial use, aqueous solutions and alkaline solutions, water vapor, non-oxidising acids and neutral saline solutions.
   Note: K5130017017017 and K5130017017013 are manufactured from UNS C37700.
7. **How clean are the fittings?**
   K65 and fittings fully comply with the cleanliness requirements of ASTM B 280.
8. **Is K65 suitable for medical gas applications?**
   No, K65 is not suitable for medical gas applications.
9. **Is K65 approved for drinking water systems?**
   No. K65 is not approved for drinking water systems.
10. **Is K65 certified by UL?**
    Yes, please see file number listed below.
    K65 Fittings UL 207 listed file number SA44668.

Conex Bänninger

- >B< Press
- >B< Press Gas
- >B< Press Solar
- >B< Press XL
- >B< Press Carbon
- >B< Press Inox
- >B< Steel
- >B< MaxiPro
- >B< ACR
- **K65**
- <A> Press Inox
- >B< Push
- >B< Sonic
- >B< Oyster
- >B< Flex
- Triflow Solder Ring
- Delcop End Feed
- Delbraze
- Medical Gas
- Valves
- Conex Compression
- Series 3000
- Series 4000
- Series 5000
- Series 8000
- OEM Solutions

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