K65®

# The tube system for high-pressure applications




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PB1029 K65 The tube system for hig pressure applications



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# The tube system for high-pressure applications

The K65 tube system has been developed in response to the use of $CO_2$ R744 as an environmentally friendly refrigerant in the commercial field, especially that of 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 Wieland K65 alloy provides the mechanical strength high enough to withstand the huge pressure ratings required. K65 has already been used with success in electrical engineering and the automotive industry, and is a safe and economical installation in refrigeration systems with high operating pressures.



**Applications**
High-pressure tube systems, particularly when $CO_2$ is used as a refrigerant. K65 can be used in other fluids applications in consultation with the manufacturer.

**Proven joining technique**
K65 has excellent processing properties that are similar to those of copper. Wieland K65 tubes can be brazed to Conex | Bänninger K65 fittings without any need for expensive or special equipment.

**Safety ensured by two well-known manufacturers**
K65 tubes by Wieland and K65 fittings by IBP Conex | Bänninger fall under a joint system guarantee that includes $CO_2$ applications for the items listed in the tables (page 5).

**Easy to identify – even after installation**
All K65 system components are marked with the manufacturers own mark, as well as the K65 mark and the pressure rating making them easy to identify at all times. 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.

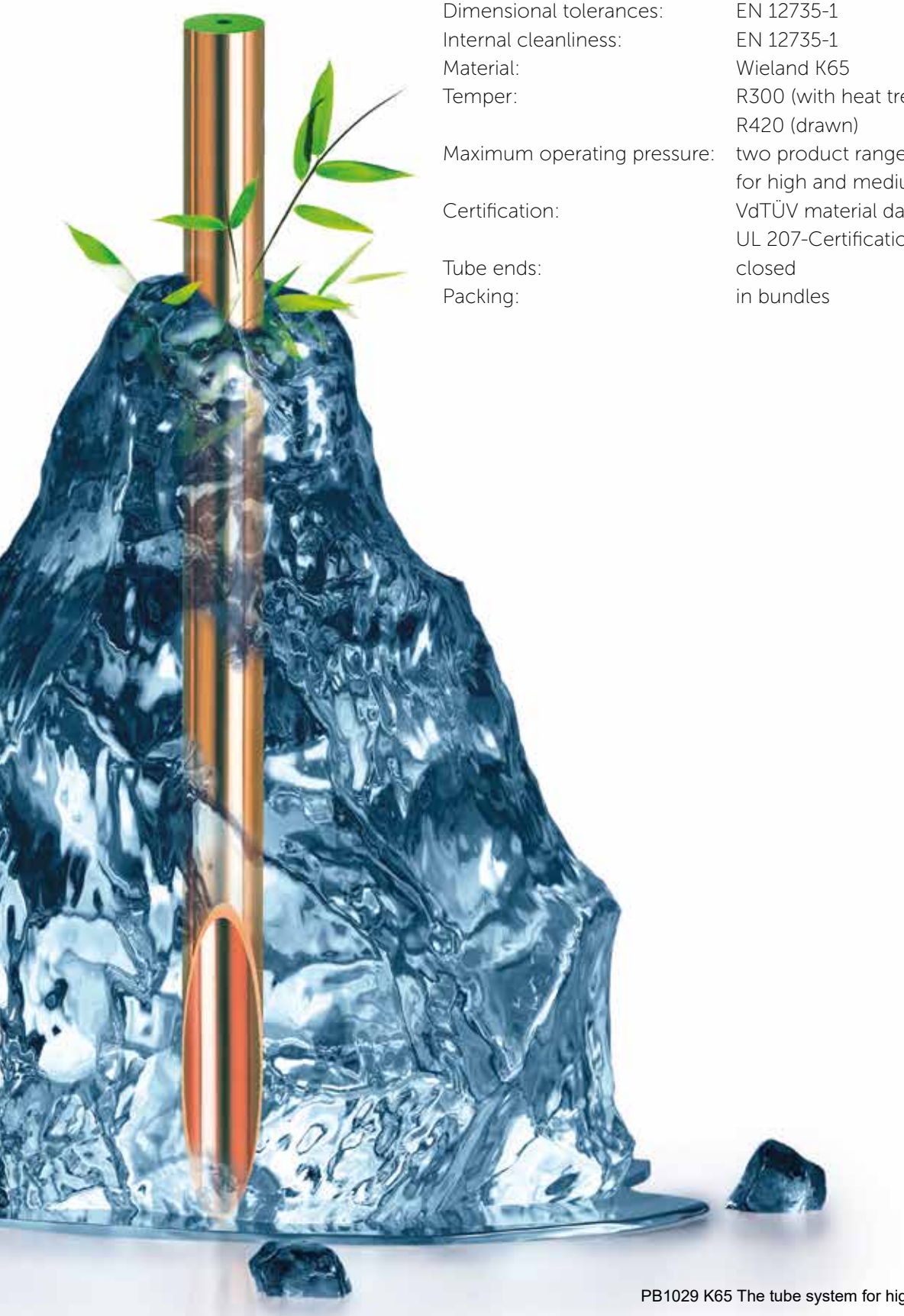
**Economical**
Having such a high mechanical strength, the K65 tube can be made with comparatively thin walls allowing for an economical utilization of material, while still meeting high technical demands.

**Lighter for easy handling**
The thinner walls of the tubes not only saves on material, but results in a lighter weight product that is easier to handle, for example, when mounting the tubes on ceilings.

# K65®

## K65 Tubes

| | |
|---|---|
| Identification: | Wieland K65 |
| Dimensional tolerances: | EN 12735-1 |
| Internal cleanliness: | EN 12735-1 |
| Material: | Wieland K65 |
| Temper: | R300 (with heat treatment)<br>R420 (drawn) |
| Maximum operating pressure: | two product ranges available from stock for high and medium pressure, see tables |
| Certification: | VdTÜV material data sheet 567<br>UL 207-Certification on request |
| Tube ends: | closed |
| Packing: | in bundles |



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According to the requirements of the EN 14276:2020-Standard, the following dimensions are available ex stock*:

| Wieland K65 tubes for up to 80 bar (at 150 °C service temperature)**, acc. to EN 14276:2020, temper R300 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Wieland material number | Dimensions | | Wall thickness | Packaging unit: bundle | | Packaging unit: ballot | | Minimum bending radius*** |
| | mm | inch | mm | Number of tubes per 5 m | Metres per bundle | Bundles per ballot | Metres per ballot | mm |
| 433015878 | 15.87 | 5/8" | 0.63 | 10 | 50 | 20 | 1,000 | 63 |
| 433019058 | 19.05 | 3/4" | 0.76 | 10 | 50 | 20 | 1,000 | 75 |
| 433022238 | 22.23 | 7/8" | 0.89 | 10 | 50 | 10 | 500 | 98 |
| 433028578 | 28.57 | 1 1/8" | 1.2 | 5 | 25 | 20 | 500 | 102 |
| 433034928 | 34.92 | 1 3/8" | 1.47 | 3 | 15 | 10 | 150 | 140 |
| 433041278 | 41.27 | 1 5/8" | 1.74 | 3 | 15 | 10 | 150 | 140 |
| 433053978 | 53.97 | 2 1/8" | 2.27 | 1 | 5 | – | – | not defined |

| Wieland K65 tubes for up to 120 bar (at 150 °C service temperature)**, acc. to EN 14276:2020, temper R300 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Wieland material number | Dimensions | | Wall thickness | Packaging unit: bundle | | Packaging unit: ballot | | Minimum bending radius*** |
| | mm | inch | mm | Number of tubes per 5 m | Metres per bundle | Bundles per ballot | Metres per ballot | mm |
| 433009522 | 9.52 | 3/8" | 0.56 | 20 | 100 | 20 | 2,000 | 43 |
| 433012702 | 12.70 | 1/2" | 0.75 | 20 | 100 | 20 | 2,000 | 52 |
| 433015872 | 15.87 | 5/8" | 0.93 | 10 | 50 | 20 | 1,000 | 63 |
| 433019052 | 19.05 | 3/4" | 1.19 | 10 | 50 | 20 | 1,000 | 75 |
| 433022232 | 22.23 | 7/8" | 1.38 | 10 | 50 | 10 | 500 | 98 |
| 433028572 | 28.57 | 1 1/8" | 1.78 | 5 | 25 | 20 | 500 | 102 |
| 433034922 | 34.92 | 1 3/8" | 2.17 | 3 | 15 | 10 | 150 | 140 |
| 433041272 | 41.27 | 1 5/8" | 2.56 | 3 | 15 | 10 | 150 | 140 |
| 433053972 | 53.97 | 2 1/8" | 3.35 | 1 | 5 | – | – | not defined |

* Other dimensions are available on request.
** K65 tubes are suitable for temperatures down to –196 °C.
*** The dimensions mentioned here can be cold bent with suitable bending equipment and bending segments that are precisely tailored to the outside diameter. Hot bending is not recommended. Industrial bending machines also enable tighter bending radii. Bending of hairpins is possible on suitable bending equipment.

## Processing information

The processing instructions for the installation of copper tubes according to EN 378 common for refrigeration are to be followed. Please refer to the K65 installation instructions. The safety precautions for high-pressure systems, particularly for pressure testing and commissioning have to be observed!

# K65®

## K65 fittings

Identification: >B< K65
Maximum operating pressure: 130 bar / 1885 psi

**The following K65-fitting designs are available:**

| Type designation | Detailed designation | Size | Item No. |
|---|---|---|---|
| K65 Bend 90° i/a  | K5001 i/a | 3/8" | K5001003000000 |
| | K5001 i/a | 1/2" | K5001004000000 |
| | K5001 i/a | 5/8" | K5001005000000 |
| | K5001 i/a | 3/4" | K5001006000000 |
| | K5001 i/a | 7/8" | K5001007000000 |
| | K5001 i/a | 1 1/8" | K5001009000000 |
| | K5001 i/a | 1 1/3" | K5001011000000 |
| | K5001 i/a | 1 5/8" | K5001013000000 |
| | K5001 i/a | 2 1/8" | K5001017000000 |
| K65 Bend 90° i/i  | K5002 i/i | 3/8" | K5002003000000 |
| | K5002 i/i | 1/2" | K5002004000000 |
| | K5002 i/i | 5/8" | K5002005000000 |
| | K5002 i/i | 3/4" | K5002006000000 |
| | K5002 i/i | 7/8" | K5002007000000 |
| | K5002 i/i | 1 1/8" | K5002009000000 |
| | K5002 i/i | 1 3/8" | K5002011000000 |
| | K5002 i/i | 1 5/8" | K5002013000000 |
| | K5002 i/i | 2 1/8" | K5002017000000 |
| K65 Bend 45° i/a  | K5040 i/a | 3/4" | K5040006000000 |
| | K5040 i/a | 7/8" | K5040007000000 |
| | K5040 i/a | 1 1/8" | K5040009000000 |
| | K5040 i/a | 1 3/8" | K5040011000000 |
| | K5040 i/a | 1 5/8" | K5040013000000 |
| K65 Bend 45° i/i  | K5041 i/i | 3/8" | K5041003000000 |
| | K5041 i/i | 1/2" | K5041004000000 |
| | K5041 i/i | 5/8" | K5041005000000 |
| | K5041 i/i | 3/4" | K5041006000000 |
| | K5041 i/i | 7/8" | K5041007000000 |
| | K5041 i/i | 1 1/8" | K5041009000000 |
| | K5041 i/i | 1 3/8" | K5041011000000 |
| | K5041 i/i | 1 5/8" | K5041013000000 |
| K65 Tee  | K5130 | 3/8" | K5130003003003 |
| | K5130 | 1/2" x 3/8" x 3/8" | K5130004003003 |
| | K5130 | 1/2" x 1/2" x 3/8" | K5130004004003 |
| | K5130 | 1/2" | K5130004004004 |
| | K5130 | 5/8" x 1/2" x 1/2" | K5130005004004 |
| | K5130 | 5/8" x 5/8" x 3/8" | K5130005005003 |
| | K5130 | 5/8" x 5/8" x 1/2" | K5130005005004 |

| Type designation | Detailed designation | Size | Item No. |
|---|---|---|---|
| K65 Tee  | K5130 | 5/8" | K5130005005005 |
| | K5130 | 3/4" x 3/4" x 1/2" | K5130006006004 |
| | K5130 | 3/4" x 3/4" x 5/8" | K5130006006005 |
| | K5130 | 3/4" | K5130006006006 |
| | K5130 | 7/8" x 7/8" x 1/2" | K5130007007004 |
| | K5130 | 7/8" x 7/8" x 5/8" | K5130007007005 |
| | K5130 | 7/8" x 7/8" x 3/4" | K5130007007006 |
| | K5130 | 7/8" | K5130007007007 |
| | K5130 | 1 1/8" x 7/8" x 1/2" | K5130009007004 |
| | K5130 | 1 1/8" x 1 1/8" x 3/4" | K5130009009006 |
| | K5130 | 1 1/8" x 1 1/8" x 7/8" | K5130009009007 |
| | K5130 | 1 1/8" | K5130009009009 |
| | K5130 | 1 3/8" x 1 3/8" x 3/4" | K5130011011006 |
| | K5130 | 1 3/8" x 1 3/8" x 7/8" | K5130011011007 |
| | K5130 | 1 3/8" x 1 3/8" x 1 1/8" | K5130011011009 |
| | K5130 | 1 3/8" | K5130011011011 |
| | K5130 | 1 5/8" x 1 5/8" x 3/4" | K5130013013006 |
| | K5130 | 1 5/8" x 1 5/8" x 7/8" | K5130013013007 |
| | K5130 | 1 5/8" x 1 5/8" x 1 1/8" | K5130013013009 |
| | K5130 | 1 5/8" x 1 5/8" x 1 3/8" | K5130013013011 |
| | K5130 | 1 5/8" | K5130013013013 |
| | K5130 | 2 1/8" x 2 1/8" x 1 5/8" | K5130017017013 |
| | K5130 | 2 1/8" x 2 1/8" x 2 1/8" | K5130017017017 |
| K65 Red Coupler  | K5240 | 1/2" x 3/8" | K5240004003000 |
| | K5240 | 5/8" x 1/2" | K5240005004000 |
| | K5240 | 3/4" x 5/8" | K5240006005000 |
| | K5240 | 7/8" x 3/4" | K5240007006000 |
| | K5240 | 1 1/8" x 1/2" | K5240009004000 |
| | K5240 | 1 1/8" x 7/8" | K5240009007000 |
| | K5240 | 1 3/8" x 1/2" | K5240011004000 |
| | K5240 | 1 3/8" x 5/8" | K5240011005000 |
| | K5240 | 1 3/8" x 3/4" | K5240011006000 |
| | K5240 | 1.3/8" x 7/8" | K5240011007000 |
| | K5240 | 1 3/8" x 1 1/8" | K5240011009000 |
| | K5240 | 1 5/8" x 3/4" | K5240013006000 |
| | K5240 | 1 5/8" x 7/8" | K5240013007000 |
| | K5240 | 1 5/8 x 1 1/8" | K5240013009000 |
| | K5240 | 1 5/8" x 1 3/8" | K5240013011000 |
| | K5240 | 2 1/8" x 1 5/8" | K5240017013000 |



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| Type designation | Detailed designation | Size | Item No. |
|---|---|---|---|
| K65 Reducer  | K5243 o-i | 1/2" x 3/8" | K5243004003000 |
| | K5243 I/M | 1/2" x 12 mm | K5243004012000 |
| | K5243 o-i | 5/8" x 3/8" | K5243005003000 |
| | K5243 o-i | 5/8" x 1/2" | K5243005004000 |
| | K5243 I/M | 5/8" x 15 mm | K5243005015000 |
| | K5243 o-i | 3/4" x 3/8" | K5243006003000 |
| | K5243 o-i | 3/4" x 1/2" | K5243006004000 |
| | K5243 o-i | 3/4" x 5/8" | K5243006005000 |
| | K5243 I/M | 3/4" x 18 mm | K5243006018000 |
| | K5243 o-i | 7/8" x 3/8" | K5243007003000 |
| | K5243 o-i | 7/8" x 1/2" | K5243007004000 |
| | K5243 o-i | 7/8" x 5/8" | K5243007005000 |
| | K5243 o-i | 7/8" x 3/4" | K5243007006000 |
| | K5243 I/M | 7/8" x 22 mm | K5243007022000 |
| | K5243 o-i | 1 1/8" x 1/2" | K5243009004000 |
| | K5243 o-i | 1 1/8" x 5/8" | K5243009005000 |
| | K5243 o-i | 1 1/8" x 3/4" | K5243009006000 |
| | K5243 o-i | 1 1/8" x 7/8" | K5243009007000 |
| | K5243 I/M | 1 1/8" x 28 mm | K5243009028000 |
| | K5243 o-i | 1 3/8" x 1 1/8" | K5243011009000 |
| | K5243 I/M | 1 3/8" x 35 mm | K5243011035000 |
| | K5243 o-i | 1 5/8" x 7/8" | K5243013007000 |
| | K5243 o-i | 1 5/8" x 1 3/8" | K5243013011000 |
| | K5243 I/M | 1 5/8" x 42 mm | K5243013042000 |
| | K5243 o-i | 2 1/8" x 1 5/8" | K5243017013000 |

| Type designation | Detailed designation | Size | Item No. |
|---|---|---|---|
| K65 Coupler  | K5270 | 3/8" | K5270003000000 |
| | K5270 | 1/2" | K5270004000000 |
| | K5270 | 5/8" | K5270005000000 |
| | K5270 | 3/4" | K5270006000000 |
| | K5270 | 7/8" | K5270007000000 |
| | K5270 | 1 1/8" | K5270009000000 |
| | K5270 | 1 3/8" | K5270011000000 |
| | K5270 | 1 5/8" | K5270013000000 |
| | K5270 | 2 1/8" | K5270017000000 |
| K65 Stop End  | K5301 | 3/8" | K5301003000000 |
| | K5301 | 1/2" | K5301004000000 |
| | K5301 | 5/8" | K5301005000000 |
| | K5301 | 3/4" | K5301006000000 |
| | K5301 | 7/8" | K5301007000000 |
| | K5301 | 1 1/8" | K5301009000000 |
| | K5301 | 1 3/8" | K5301011000000 |
| | K5301 | 1 5/8" | K5301013000000 |
| | K5301 | 2 1/8" | K5301017000000 |



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