



COPPER FITTINGS

Literature



Introduction:



Figure 1 Copper Fittings

Copper fittings are used to connect with copper pipe or tubing in pipe works. The available Nibco copper fittings series are Wrought Fittings (600 series) and Cast Fittings (700 series). Wrought fittings are available in an extensive range of types and size while cast fittings are only available in standard tube sizes and in a limited type to supply for mechanical and plumbing systems. The design and standard of copper fittings is according to ASME B16.22 and B16.24.

Material:

Wrought fittings are made from pure copper mill products according to ASTM B75 Alloy C12200. For cast fittings, it is made from Copper Alloy C84400 that consists of 81% copper, 7% lead, 3% tin, and 9% zinc which according to ASTM B584.

Size Range & Pressure Rating:

The most used sizes for copper fittings are ranged from 1/8" to 8". The working pressure that copper fitting can withstand is up to 200 PSI, depending on sizes.

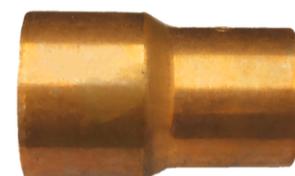


Figure 2 Copper Reducer

Connection Type:

There are three common joint types for copper fittings: brazing, soldering, and threaded. Brazing is a joining process by heating and melting the filler to bond between fittings and tube. Compared to brazing, soldering is a slightly low temperature heating and melting process that is carried out to bond fittings and tubes. Flux is often consumed during the brazing or soldering process. It is to clean the material surfaces and make it easy to join parts together. For more information, please refer to Soldering & Brazing.

Another joint type is threaded which is NPT thread. It is to provide adaptability of copper fittings to equipment or pipe connections that have this thread type. The NPT thread is made according to the requirements of ASME B1.20.1.

Below table are some abbreviations that used to describe the connection of copper fittings.

Abbreviations	Connection Type
C	Female Solder Cup
Ftg	Male Solder End
F	Female NPT Thread
M	Male NPT Thread

Chuan Kok Hardware & Machinery Pte Ltd

Address : 1783 Geylang Bahru, #01-02, Singapore 339708
Telephone Number : +65 6294 2566
Email Address : info@chuankok.com
Website : www.chuankok.com
Business Registration Number : 198201577Z
Country of Registration : Singapore

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