



Closed Circuit Coolers QLNE  
Instructions for Installation, Operation and Maintenance

## General

The cooler is made of 1/2" Copper- or Copper-Nickel tubes with a circuit sized for the conditions of the cooling water. The tubes are mounted in a bundle of aluminum plate fins. The fins on the tubes give an increased heating surface to compensate for the low heat transfer coefficient on the airside.

## Design

The tubes are mechanically expanded into the aluminum fins as to give absolute contact with the two materials. The pitch between the fins is selected for the conditions of the airflow. The cooler is made with a Manifold Header for distribution of water into each circuit. This type of Header gives the possibility to select an optimized water circuit with counter flow of the water, relative to the airflow.

The tubes are joint to the Header by a brazing joint, made with a Silver Alloy selected for each base metal. The brazing joint is designed according to the requirements in ASME VIII and AD-Merkblatt. The brazing operation is performed by personnel qualified acc. to ASME IX or EN 287. Each cooler is pressure tested with air under water to detect any leakages and to verify the strength of the finished work.

The cooler is designed to withstand vibrations, shock loads and thermal movements.

The Manifold Header is equipped with a drain- or ventilation plug. The use depends on how the cooler is installed. Optional a connection for a Safety Valve can be foreseen.

A cover is mounted onto the front and the backside of the cooler, to protect the Manifold Headers and the return bends against any mechanical damage.

The type of design is shown on drawing P3402142.

## Material

Copper Tubes:	Ø 12.7 x 0.65 mm ASTM B68 C12200
Copper-Nickel Tubes:	Ø 12.7 x 0.65 mm ASTM B111 C70600
Aluminum Fins:	Thickness 0.15 mm AA 8079
Copper Fins:	Thickness 0.12 mm ASTM B152 C12200
Pipe Flange Hub:	Red Brass CuSn5Pb5An5
Pipe Flange Ring:	Zinc plated steel EN 10025-S235 JRG2
Zinc Plated Frame work:	Steel thickness 2 mm EN 10142-DX51DZ275

## Technical Data

Design Pressure:	16 bar(e)
Design Temperature:	100°C
Test Pressure:	21 bar(e)

## Cleaning

The cooler can be cleaned internally by using a temporary increased water flow or by using a temporary induced chemical cleaner.

Such a chemical cleaner could be Sulphamic Acid or Potassium Hydroxide.

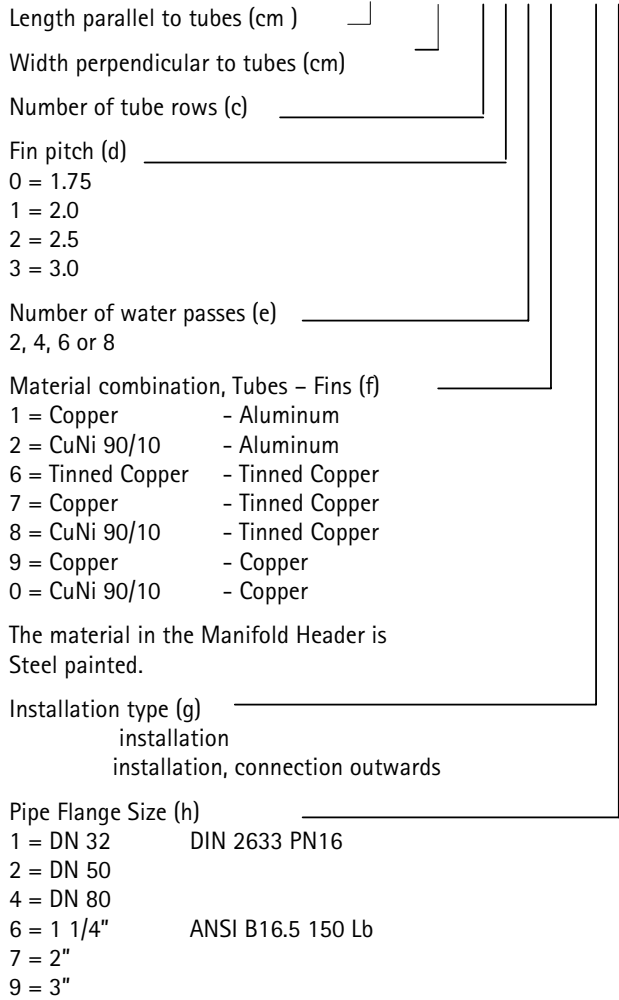
No matter what kind of chemical cleaner that is used, it may not be aggressive to Copper alloys or Silver alloys.

## Packing

The cooler is delivered packed in a wooden case.

Code key

Air Cooler QLNE-aaa-bbb-c-d-e-f0- g-h



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