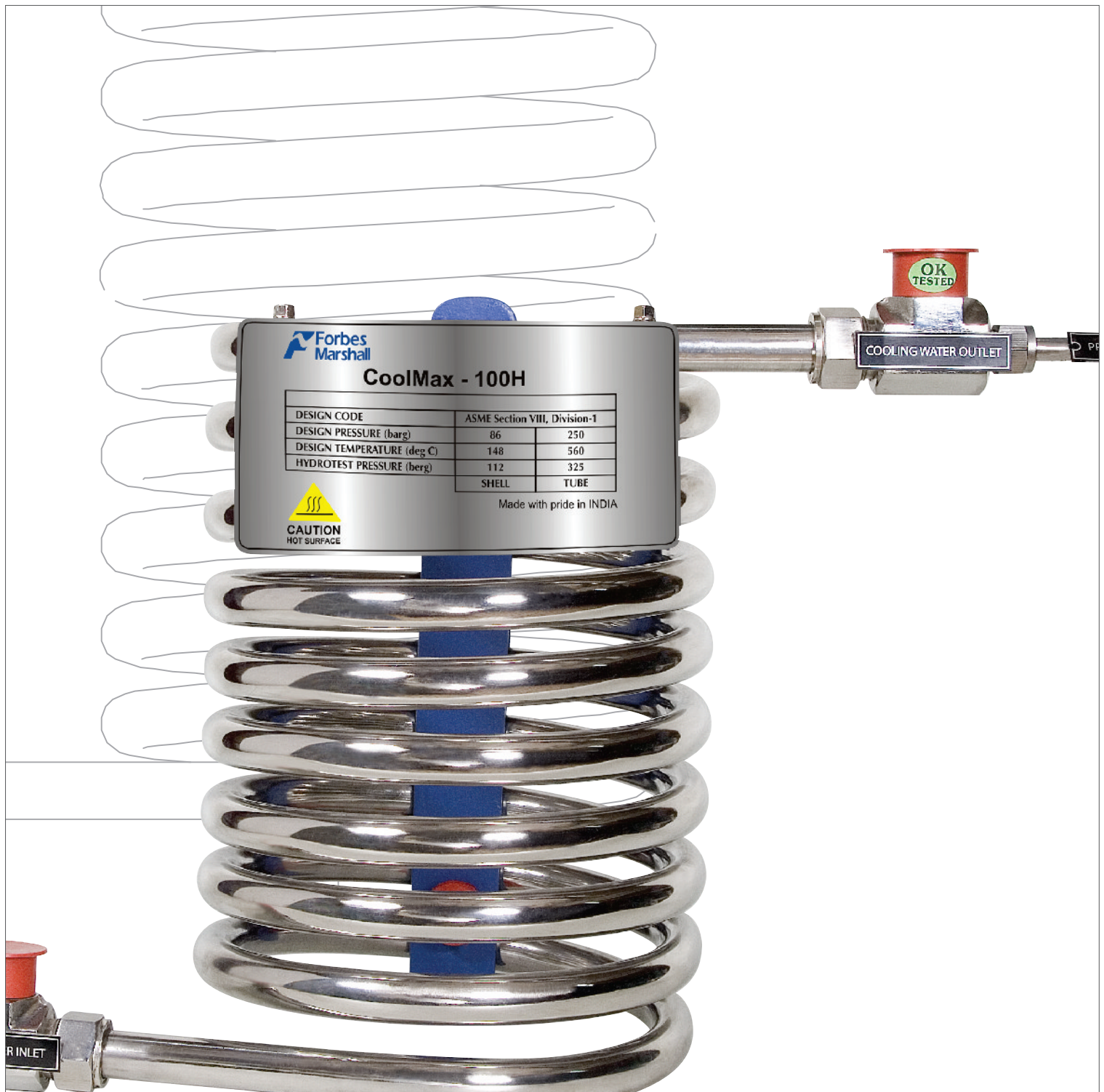




CoolMax

Coil-in-Coil Type Sample Cooler

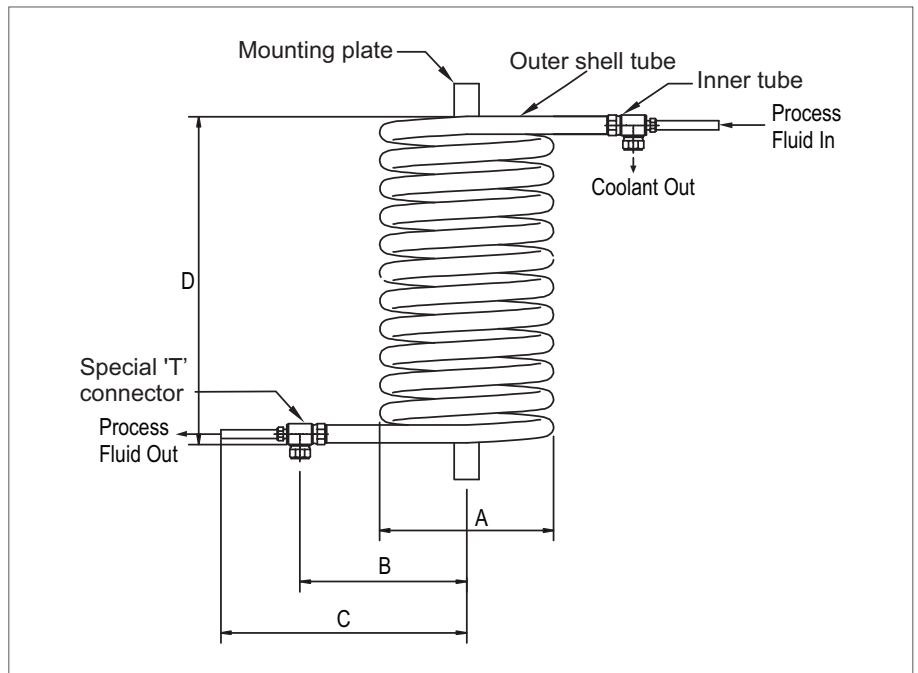


CoolMax

A number of industrial processes require sampling of various process fluids like diesel, LCO, ULSD, low pressure steam, water and alcohol to the required uniform temperature.

Improper design of heat exchangers can severely erode product quality and profitability.

The "CoolMAX" series from Forbes Marshall, is a range of compact heat exchangers with wide ranging benefits. These offer high heat transfer rates, low pressure drops, a close approach temperature with minimal cooling water requirements. A high turbulence of fluid ensures self-cleaning and longer life of the product.



Features

Available in different material to suit process conditions like multiphase slurries and petrochemical mixtures

Fully drainable inner and outer tubes

Rugged design, highly resistant to thermal and hydraulic shocks

Single continuous tube to avoid leaks

Enhanced turbulence to avoid deposits

Easy to install

High precision engineered product

Manufactured as per ASME BPE 2007

Suitable for clean steam and WFI (water for injection) processes

Stringent safety/ cleanliness norms incorporated which are especially required for pharmaceutical industry

Electro-polished models ($Ra < 0.6$ micrometer) are available for pharmaceutical applications

Benefits

High heat transfer rates.

Very close approach temperature - upto 2°C

More compact due to increased overall heat transfer coefficient

Suitable for high heat duty application

Minimal cooling water requirement

Suitable for low flow rates at high pressure/high temperature application

Maximum counter current coefficient

Eliminates the tendency of dead spot formations

Low pressure drop on outer tube side

Size(MM) (Sq. meter)	Dimension 'A'	Dimension 'B'	Dimension 'C'	Dimension 'D'	Weight (kg)	High Temperature Area (square meter)
CoolMax-50H	143	139	229	313	5	0.12
CoolMax-100H	176	148	273	320	7	0.18
CoolMax-200H	226	153	279	426	14	0.24

Recommended Parameters for Operation

Cooling water

Inlet temperature	35° C (max)
Inlet pressure	3.5 bar
Outlet pressure	Open to atmosphere
Quality/ chloride content	Less than 25 ppm

Ordering Information

Forbes Marshall CoolMax Series

Series

50H-1/4" OD inner tube
 100H-3/8" OD inner tube
 200H-1/2" OD inner tube
 Sanitary**

Inner Tube Material

Copper
 SS316
 Inconel
 Monel

Outer Tube Material

Copper
 SS316
 Inconel
 Monel

CM

X

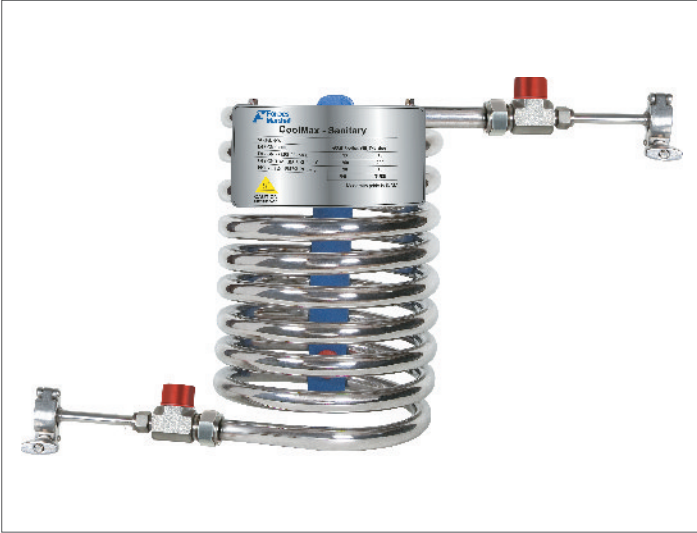
Y

Z

Sample side (Inner tube)	
Tube Material	Pressure Temperature
Copper	140 kg/cm ² @ 148°C
SS 316	250kg/cm ² @ 560°C
Inconel	400kg/cm ² @ 600°C
Monel	140kg/cm ² @ 148°C

Cooling side (Outer tube)	
Tube Material	Pressure Temperature
Copper	86 kg/cm ² @ 148°C
SS316	160kg/cm ² @ 560°C

CoolMax - Sanitary



Features

Manufactured as per ASME BPE 2007

Suitable for clean steam and WFI (water for injection) processes

Electro-polished models ($Ra < 0.6$ micrometer) are available for pharmaceutical applications

Specifications

Stainless steel (SS 316) housing

Sanitary tri-clamps: approved for pharmaceutical application

Surface finish ($0.6 < \text{micrometer}$).

TIG welded

Single length SS tube to avoid any joints



Forbes Marshall
Krohne Marshall
Forbes Marshall Arca
Codel International
Forbes Solar
Forbes Vyncke
Forbes Marshall Steam Systems

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