



## MHE – DOUBLE TUBE SAMPLING CONDENSER

### MHE - Laboratory Sample Condenser

The MHE (Miniature Heat Exchanger) – Double Tube and Shell heat exchanger have been designed to allow Clean Steam (CS) and Water for Injection (WFI) samples to be taken quickly and easily whilst maintaining a sterile testing environment. MHE - is ideal to be mounted at the sampling point and can be operated with either mains or chilled water as the cooling medium. availability of aseptic/sterile sample valve allow fine control of sample flow during testing

The MHE can be sterilised in situ-on-line, thus ensuring continuity of samples regardless of testing frequency, ideal for fluids in pharmaceutical/Biotech or any type of high purity systems applications.

### Areas of applications:

- Steam sampling
- In-line conductivity monitoring
- Point of use cooling
- Cooling/heating of PW-WFI for processing equipment in pharmaceutical & Biotech

### Features and benefits:

- AISI 316L (1.4404) stainless steel construction
- Double Tube Sheet (DTS)
- Meets FDA and 3A specifications
- Full material traceability
- Self draining design
- Compact, easy to install
- Fully sterilisable/autoclavable



### Sample Condenser operation

The medium to be condensed/cooled passes through the tube side. Typically a regulating valve will be used to throttle the sample medium flow. Cooling water is channelled counter current inside the shell in order to ensure maximum efficiency. The heat energy of the sample medium is absorbed by the flowing cooling water, resulting in a drop in the sample temperature. Where steam is the sample medium, the cooling water will firstly absorb the steam's latent heat content, condensing it back to water. Further heat transfer as the condensate passes through the coil will reduce its temperature prior to discharge.

The double tube sheet (DTS) operation prevents any mixing of the two processing fluids, since should the tube contract, the fluid inside of the shell will leak to atmosphere

### Operating conditions:

Maximum working pressure: 8 barg at 175°C both sides (shell and tube)

Note – pressure rating may exceed that of clamps connections

### Capacities (approximate):

**Steam:** up to 10 kg/h of condensate at 100°C

**Water:** 30 lt/h of water from 85°C to 30°C

based on a cooling water temperature of 18°C and flow rate of 10 lt/min.

### Connections:

Tube side: ½" clamp BS 4825

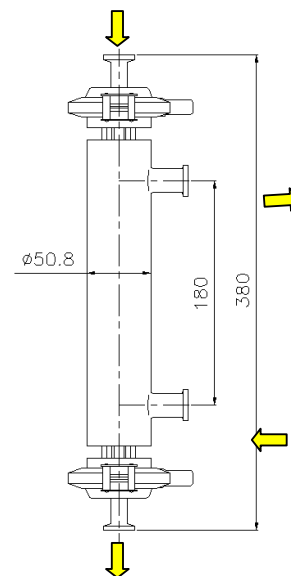
Shell side: ¾" clamp BS 4825

### Standards:

All LSCDTS according to PED directive 97/23/CE and are CE compliant under the SEP

### Surface finish:

Product contact surface finish: Ra ≤0.6 µm



Additional information and more at: [sales@cskbio.com](mailto:sales@cskbio.com)

The specifications or design are subject to change without prior notice

CSK-BIO

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