

Helicoil Cooler

Installation, Operation & Maintenance Instructions





Health and Safety

- Before attempting work on any process equipment, ensure that all permit requirements are satisfied and all necessary process, electrical and mechanical isolations are in place.
- Do not over-pressurise the cooler beyond the maximum design pressure. If there is any possibility of over pressurisation, the system must be fitted with a suitable protection device – contact AESSEAL for advice.
- Do not exceed the operating limits of the cooler, please read the nameplate before operation.
- The system may get hot in operation with risk of burn injury and suitable engineering controls or guarding should be adopted where necessary. Suitable engineering controls or guarding should be adopted where necessary. The risk from Legionella bacteria should be assessed with water barrier fluids at temperatures between 20°C to 45°C (68°F to 115°F).
- Ensure the cooler is fully vented to remove any trapped air, and is completely leak free before full operation.



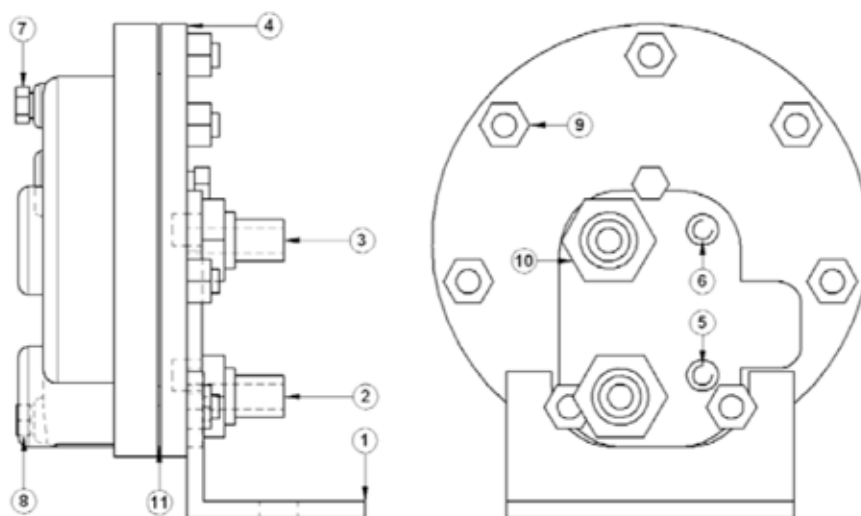
Environment

At end of life the cooler should be disposed of in accordance with local regulations and with due regard to the environment.

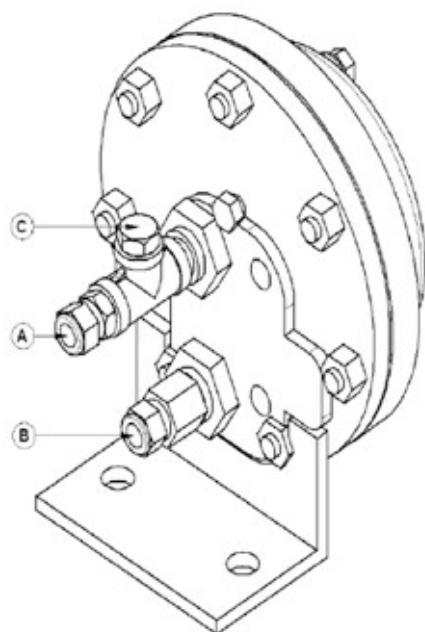
For further information please contact AESSEAL®

Components

1. Mounting bracket
2. Process connection
3. Process connection
4. Cooler front panel
5. Cooling fluid connection
6. Cooling fluid connection
7. Casing vent plug
8. Casing vent plug
9. Cooler base plate nut
10. Cooler manifold nut
11. Gasket



Cooler with Installation Kit



A. ½ " O.D. (F) compression port for process connection

B. ½ " O.D. (F) compression port for process connection

C. Process vent plug

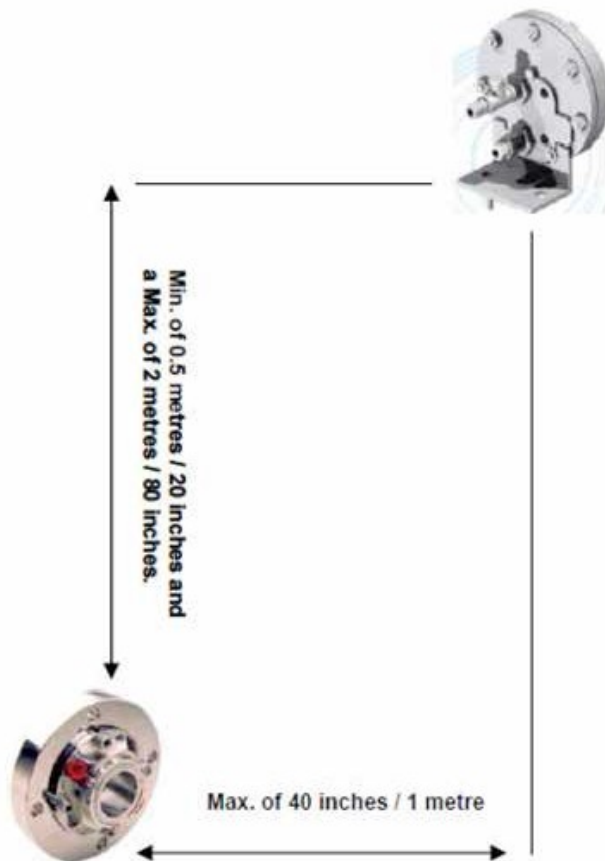
Mounting

Mount the AESSEAL® Cooler on a convenient support below / above / to the side of a base plate on a column or wall, on the side of a piece of suitable equipment or hung from an overhead surface. It is recommended to mount the Cooler above the mechanical seal.

Mount the Cooler in close proximity to the pump, ideally between 2 metres / 80 inches and 0.5 metres / 20 inches above and 1 metre / 40 inches from the side of the mechanical seal.

PLEASE NOTE – If you are not connecting the Cooler directly to a mechanical seal and are using the Cooler in conjunction with another Seal Support Product such as a PUMPPAC™, it may be necessary to mount the Cooler closer to the Seal Support Product and within the parameters detailed above. If you have any questions about this please contact your local AESSEAL® representative.

Mounting Diagram



Piping Up

Process fluid is passed through the Coolers internal coil by connecting its piping to the manifold. Attach the process inlet connection 2 and the outlet to connection 3. These ports are $\frac{1}{2}$ " NPT (M) unless the AESSEAL® installation kit is also supplied (available on request), in which case the connection ports become $\frac{1}{2}$ " OD (F) compression ports (items A and B). If the installation kit is supplied, attach the process inlet to connection B and the outlet to connection A.

The Cooling fluid's piping is connected to the casing through the threaded openings (Numbers 5 and 6) in the base plate which are $\frac{1}{2}$ " NPT female connections.

To ensure maximum cooling of the process takes place, pipe the coldest water feed to the warm part of the process fluid feed, i.e. if the process fluid is entering through port 2 ensure that the cooling feed enters through port 6 so it has the greatest cooling effect.

Normally the process fluid is circulated in the AESSEAL Cooler's tubes. However, if the process fluid has a fouling tendency (e.g. a slurry), this may be circulated through the shell side (connections 5 & 6) in order to allow easy cleaning.

- *For 316 SS Systems, when used with a water based barrier/buffer the Chloride content should not exceed 250ppm*

Start-Up

To vent the Cooler casing, remove one of the casting's vent plugs (Numbers 7 or 8). To vent the internal process coil, remove the vent plug (Item C) if the installation kit is supplied. Close each vent and / or replace the plug when fluid begins to flow from its opening, indicating that all the air has been expelled. If your process is hot water or a volatile hydrocarbon please take care when venting the process side through item C.

Tighten base plate nuts (Item Number 9) and manifold nuts (Item Number 10) after 2 hours and check their tightness after 24 hours.

Disassembly

The AESSEAL Cooler casing is readily available for inspection and cleaning. This cleaning can be administered without disturbing the pipe work:

- Remove the casing vent plugs (Item Numbers 7 and 8) to drain casing.
- Remove all of the base plate nuts (Item Number 9).
- Withdraw the casing, being careful not to damage the gasket (Item Number 11).

If removal of the internal coil is necessary:

- Isolate the flow of process through the coil and ensure it is drained.
- Disconnect piping and remove the manifold nuts (Item Number 10) and lock rings.
- Withdraw the coil-manifold assembly being careful not to damage manifold gaskets.

Re-assembly

- When reassembling, ensure the manifold and base plate gaskets are intact and in place. Ensure any damaged gaskets are replaced.
- Make sure that the tabs on the manifold lock rings fit into the base plate slots. These keep the manifold-coil assembly from turning when tightening the manifold nuts (Item Number 10) and piping to the unit.
- Be sure the base of the manifolds are seated in pockets located at the bottom inside the casing.
- Vent the casing when re-admitting fluid, unplugging one of the vent plugs (Number 7 or 8).
- Check the base plate and manifold nut tightness after 2 hours, and again after 24 hours.

Maintenance

The system/cooler should be maintained in accordance with site standards.