

Cooler Range

For use with AESSEAL® Seal Support Systems



Features

- Range of air or water cooled options
- Compact Design
- PED compliant and third party approved
- High efficiency cooling

Benefits

- Reducing installation and running costs
- Suitable for retrofitting in existing installations
- Suitable for a wide range of applications
- Optimize seal performance and life by reducing seal face temperature



Advanced Natural Convection Air Cooling

Python™

The AESSEAL® Python is an advanced air cooled heat exchanger for cooling mechanical seal barrier / buffer / flush fluids.

Air cooling is achieved through natural convection without the need for cooling water. The unit consists of a tube formed into a coil, terminated with inlet and outlet manifolds. The Python is available in both 8m single (Fig 1) and 16m dual coil (Fig 2) arrangements.

Features & Benefits:

Requires No Plant Utilities Services: Simple low cost Installation and minimal maintenance

Robust Design: Suitable for a wide range of arduous environments

Specification

Designed and manufactured in accordance with ASME VIII Div 1, complies with PED 2014/68/EU: Suitable for a wide range of arduous environments

316 SS Tube with Stainless Steel Fins: Robust design suitable for a range of challenging environments

Connections: DN15 (1/2" NB) ASME B16.5 600lb R.F

Welding: ASME IX, Pickled and passivated as standard

Maximum Rated Operating Pressure: 58.3 bar g (845.6 psi g)

Maximum Rated Operating Temperature: 200°C (392°F)



Fig 1
Single Coil



Fig 2
Dual Coil

Advanced Finned Cooler

Finned Schedule pipe construction with either marine aluminium (grade 1060) or stainless steel fins.

Available in 2 and 4 bank arrangements with flanged connections of butt or socket welded construction. Maximized contact area between fins and pipe plus internal turbulators (Fig 3) provide optimized heat transfer.

Features & Benefits:

Advanced Fin Technology: High density tube surface coverage using advanced fin technology, provides enhanced heat transfer and optimizes seal performance

Wide Range of Application: configurable in 2 or 4 bank radiator arrangements in order to produce the necessary cooling

Requires No Plant Utility Services: Simple low cost installation and minimal maintenance

Specification

Robust Design: Sch 40 1/2" Pipe offered as standard

316 SS Pipe with Stainless Steel Fins

Connections: DN15 (1/2" NB) ASME B16.5 600lb R.F

Welding: In accordance with ASME IX

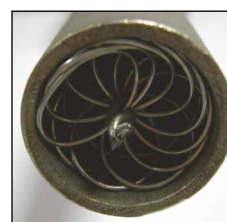


Fig 3
Internal Fluid Turbulator



Fig 4
Finned Radiator Cooler

Water Coolers

Helicoil Cooler

The Helicoil Cooler (Fig 6) is constructed from 316 stainless steel tube and cast iron casing as standard.

Cast iron & cast 316 steel casing options are available for a wider range of applications and material compatibility. This robust product is a very efficient seal cooler used on API Piping Plan 21, 22 and 23 arrangements. The product can also be used in conjunction with other products in the systems division range to provide additional cooling on high heat applications.

Features & Benefits:

High Reliability: Simple construction allows cleaning and maintenance of the shell side to prevent fouling for long term operation

Application Suitability: High pressure, high heat load, liquid-to-liquid applications

Options Available: Contact AESSEAL® Technical Department for models and options suited to specific applications

Specification

Design / Construction: ASME VIII Div 1, U-Stamped Case

Connections*: ½" NPT(F) Shell Connections ½" NPT(M) Coil Connections

Coil Side Maximum Rated Operating Pressure: 69 bar g (1000 psi g)

Shell Side Maximum Rated Operating Pressure: 6.1 bar g (89 psi g)

Maximum Design Temperature: 232°C (450°F)

(*Standard cooler connections – for different options contact AESSEAL Technical Department)

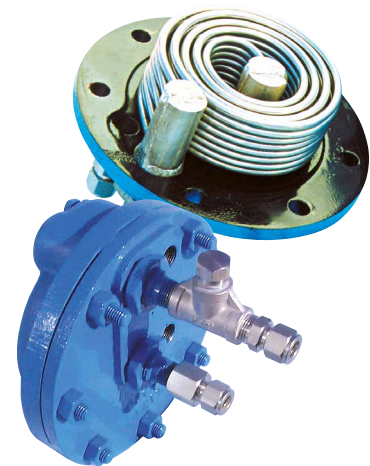


Fig 6
Helicoil Cooler

AES682C™

Robust design high efficiency cooler.

The AES682C™ (Fig 7) is a full stainless steel shell & tube heat exchanger, with an innovative dual concentric tube coil for cooling mechanical seal barrier / buffer / flush fluids. Typically uses plant cooling water on shell side and hot barrier / buffer / flush fluids on the tube side. This product can also be easily dismantled for ease of cleaning and maintenance (Fig 8). Suitable for a wide range of arduous environments.

Features & Benefits:

High Efficiency Cooler: Provides optimal heat removal in arduous environments

Easily Dismantled: Simple cleaning and maintenance

Industry Accepted Design: Meets the requirements of API 682, ASME VIII Div 1, CE marked and complies with PED 2014/68/EU

Meets Requirements of API 682

Specification

Connections: Compression fitting (Tube Side) / NPT (Shell Side)

Welding: In accordance with ASME IX

Tube Side Maximum Rated Operating Pressure: 100 bar g (1450 psi g)

Tube Side Maximum Rated Operating Temperature: 200°C (392°F)

Shell Side Maximum Rated Operating Pressure: 16 bar g (232 psi g)

Shell Side Maximum Rated Operating Temperature: 80°C (176°F)



Fig 7
AES682C™ Internal

Fig 8
AES682C™ Shell

Water Coolers

AES-CIC Cooler

The AES-CIC Cooler is an efficient yet simple product that provides cost effective seal cooling.

The AES-CIC is a new coiled double pipe water cooler offered as standard in 316L stainless steel, to be used where cooling water is readily available. The AES-CIC is designed to be utilised horizontally or vertically, allows for ease of installation. The cooler is suitable for API Piping Plan 21, 22 and 23 arrangements and in conjunction with products in the system division range to provide additional cooling on high heat application.

Features & Benefits:

Coiled double pipe heat exchanger - compact highly efficient cooler.

Low pressure loss - ideal where flow rate generated is marginal.

316L stainless steel - suitable for a range of duties and industries.

Meets Requirements of API 682

Specification

Design / Construction: ASME B31.3 PED 2014/68/EU Category SEP.

Connection: DN15 (½" NB) ASME B16.5 600lb R.F (tube side)
2 x ½" NPT Ports at Flange End 2 x ¼" NPT F Vent/Drain Standard (shell side).

Duplex / Super duplex: available upon request.

Tube Side Maximum Rated Operation Pressure: 60 bar g (870 psi g).

Shell Side Maximum Rated Operation Pressure: 16 bar g (232 psi g).

Maximum Design Temperature: 250°C (482°F) (tube-side) 80°C (176°F) (shell-side).

Minimum Design Temperature: -50°C (-58°C) (tube-side) -50°C (-58°C) (shell-side).



Forced Convection Air Cooling

Air Blast Oil Cooler

The Air Blast Cooler (Fig 5) uses a combination of high performance cooling elements and high capacity, compact AC electrically powered fans to give long trouble-free operation in arduous applications.

The compact design provides the highest cooling performance in heat dissipation whilst minimizing the space required. This product also offers a low cost, environmentally friendly cooling solution.

Features & Benefits:

High Cooling Capacity: Suitable for application requiring a high level of heat dissipation

Specification

Cooling Capacity : Cooling range 0-5 kW

Motor Options: AC motors available in 230 / 400 V @ 50 / 60 Hz versions

Maximum Working Pressure: 16 bar g (232 psi g)

ATEX Compliant: Zone 1 Anti-static Exd motor available



Fig 5
Air blast cooler

In House Calculation Software

Applications are evaluated using AESSEAL's proprietary calculation tool, BATCALC, which has been developed in-house, used to simultaneously analyse the balanced heat transfer and circulating fluid flow performance between mechanical seals and support systems. BATCALC is used for a wide range of applications for forced circulation seal systems incorporating vessels, PUMPPAC™ units, water coolers and air convection coolers.

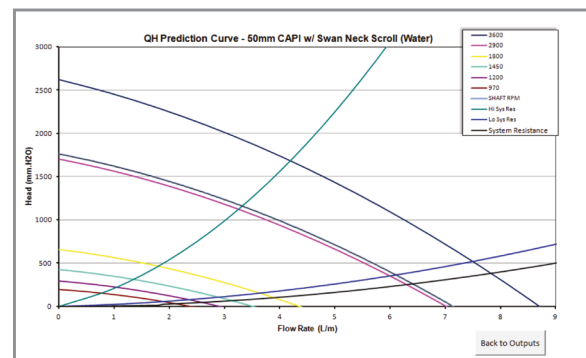


Fig 9
BATCALC Results

For further information and safe operating limits contact our technical specialists at the locations below.



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'Our purpose is to give our customers such exceptional service that they need never consider alternative sources of supply.'



Use double mechanical seals with hazardous products.

Always take safety precautions:

- Guard your equipment
- Wear protective clothing



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