ICE GUARD™

Installation Operations & Maintenance Instructions

AESSEAL®
ENVIRONMENTAL TECHNOLOGY

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Health and Safety

- It is imperative to the performance of the ICEGUARD™ to ensure that all pipe work in the system is insulated as detailed in Figures 1 and 2. Exclude only the two ICEGUARD™ valves detailed in Figure 3 from insulation.
- Isolate the process and power on installation, maintenance and decommissioning (and ensure that the system pressure has been relieved before undertaking maintenance)
- The system should be installed by comptent engineering personnel.
- Pipe relief valves must discharge to a safe area.
- This system has been designed for use only as a barrier fluid system for mechanical seals using water as barrier fluid.
- Electrical connections must be made in compliance with applicable legislation and / or local requirements by a competent / qualified electrician.
- Do not over-pressurise the system beyond 10 bar (g). If there is any possibility of over-pressurisation the system must be fitted with a suitable protection device.
- Ensure that the plant water line does not exceed 10 bar (g).
- Do not exceed the operating limits of the system. Not designed for cyclic loading.
- Ensure that there is a suitable valve positioned on the water feed line so that the ICEGUARD™ positioned in the water feed line can be isolated and removed for any maintenance.
- The system may get hot in operation with risk of burn injury. Suitable engineering controls or guarding should be adopted where necessary.
- Ensure the system is completely leak free before full operation.
- If the fluid becomes contaminated it is recommended that the barrier fluid is replaced taking necessary precautions.

Environment

Once the barrier fluid and system have reached the end of its life, it should be disposed of in accordance with local regulations and with due regard to the environment.

For further information please contact AESSEAL®

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FIG.1 ICEGUARD™ Confi-1

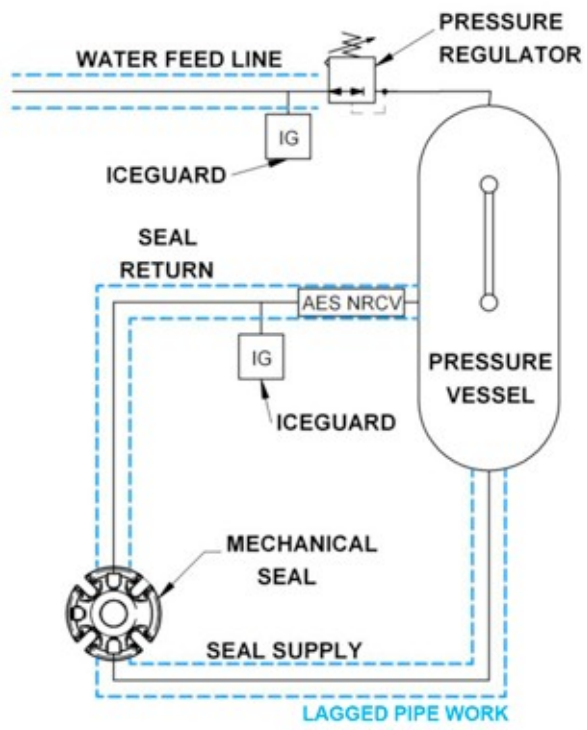
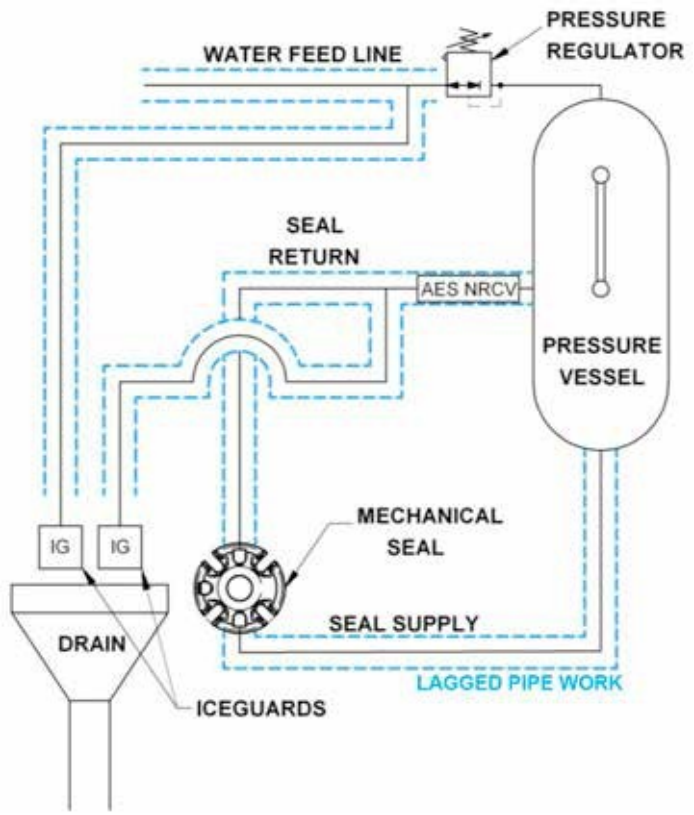


FIG.2 ICEGUARD™ Confi-2



Introduction

The ICEGUARD™ is designed to give complete protection against freezing temperatures to the entire seal support system. To ensure that it performs as desired, the ICEGUARD™ is supplied as two parts. Both must be installed as per the instructions to achieve optimum freeze prevention.

It is imperative to the performance of the ICEGUARD™ to ensure that all pipe work in the system is insulated as detailed in Figures 1 and 2. Exclude only the two ICEGUARD™ valves detailed in Figure 3 from insulation.

Installing & Commissioning

There are two different configurations that the ICEGUARD™ can be installed in. Both will prevent your seal support system liquid from freezing. Configuration 1 is for a quick, simple install. Configuration 2 enables the discharged liquid to be directed to a safe drain area.

Fig.3 ICEGUARD™ Details

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Configuration 1

- Connect one ICEGUARD™ product into the vessel water feed line, before the pressure regulator as shown in Figure 1.
- Connect the remaining ICEGUARD™ product directly into the AES NRCV (Non Restrictive Reverse Flow Prevention Valve), and then connect the AES NRCV into the Pressure Vessel.

Configuration 2

- With reference to Figure 3, separate the T-piece (1) from the Hex Nipple (2) using appropriate spanners. Repeat this step for the remaining ICEGUARD™ also.
- Connect one T- piece into the vessel water feed line, before the pressure regulator as shown in Figure 2.
- Connect the remaining T-piece into the AES NRCV (Non Restrictive Reverse Flow Prevention Valve), and then connect the AES NRCV into the Pressure Vessel.
- Add sufficient pipe work between each T-piece and each coupling arrangement to allow the ICEGUARD™ to be directed to an open drain area, whereby it can be recycled, as shown in Figure 2.

Installation Considerations

- Ensure that an appropriate thread sealant is used when connecting all components.
- Ensure that the drain is a wide open area to allow free discharge from the ICEGUARD™ discharge from
- The maximum operating temperature of the ICEGUARD™ is 150°C.

ICEGUARD Design Limits

*** IMPORTANT**
Refer to seal support system name plate for design limits which may differ depending on system & components fitted.

Maximum Pressure* : 10 barg / 145 psig

Maximum Temperature* : 150°C / 302°F

Minimum Temperature* : -20°C / -4°F

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

Maintenance

The system should be maintained in accordance with site standards.

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