

# ICE GUARD™

Installation Operations & Maintenance Instructions



EXPERIENCE THE EXCEPTIONAL

**AESSEAL plc**

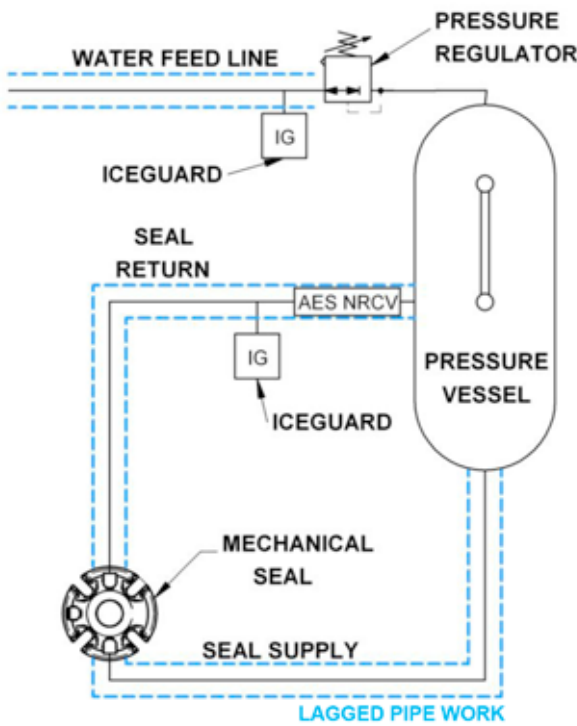
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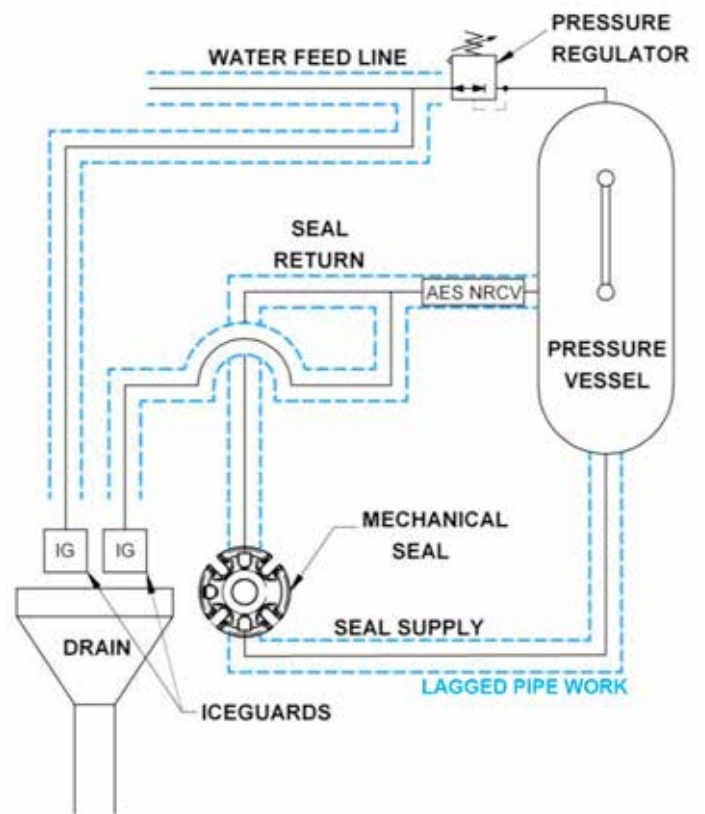
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**FIG.1 ICEGUARD™ Configuration 1**



**FIG.2 ICEGUARD™ Configuration 2**



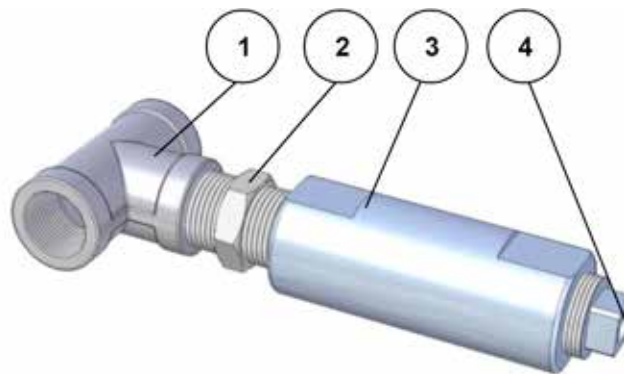
**Introduction**

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 lagged as detailed in Figures 1 and 2. Exclude only the two ICEGUARD™ valves detailed in Figure 3 from lagging.

**Installation & 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**

## 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™
- The maximum operating temperature of the ICEGUARD™ is 150°C.

## Health and Safety



- It is imperative to the performance of the ICEGUARD™ to ensure that all pipe work in the system is lagged as detailed in Figures 1 and 2. Exclude only the two ICEGUARD™ valves detailed in Figure 3 from lagging.
- 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.
- The system may get hot in operation with risk of burn injury, and suitable engineering controls or guarding should be adopted where necessary.
- 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.
- Isolate the process and power on installation, maintenance and decommissioning (and ensure that the system pressure has been relieved before undertaking maintenance)

## Environment



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

## Maintenance

- The system should be maintained in accordance with site standards.