SWM & SWP

Installation, Operation & Maintenance Instructions





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Health and Safety

- This system has been designed for use only as a barrier fluid system for mechanical seals using a suitable non-hazardous barrier fluid.
- 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 competent engineering personnel
- Electrical connections must be made in compliance with applicable legislation and / or local requirements by a competent / qualified electrician.
- If there is any risk of FIRE the system must be fitted with a suitable pressure relief device to prevent overpressurisation.
- Pipe relief valves discharge to safe area (when fitted).
- Pressure test the complete system assembly at 1.1x maximum working pressure (duration 5 minutes) and ensure the system is completely leak free before full operation.
- Do not over-pressurise the system beyond the maximum design pressure. If there is any possibility of overpressurisation, the system must be fitted with a suitable protection device.
- Do not exceed the operating limits of the system. Not designed for cyclic loading.
- The system may get hot in operation with risk of burn injury, and 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).
- If the barrier fluid becomes contaminated it is recommended that the barrier fluid is replaced taking necessary precautions. If the contamination is potentially corrosive or damaging to the system remove from service and contact AESSEAL for technical advice.



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

For further information please contact AESSEAL®

Installing & Commissioning

SWM & SWP



Components

- A = Plant water supply connection
- B = Non-return valve
- C = Pressure gauge
- D = System Vessel
- E = Weld Pad level Gauge
- F = Drain Valve
- G = Seal Supply Connection
- H = Supply/Return Line
- = Mechanical seal
- J = Seal return connection

Installation & Commissioning

- 1. Install the System in a suitable location, which is free from vibration and no more than 2 meters (80 inches) above and 1 meter (40 inches) from the side of the mechanical seal (I) and a minimum of 60cm (24") from the mechanical seal. If your vessel has a cooling coil refer to Table 1 for commissioning details.
- Isolate the plant water supply. Connect the vessel from the seal supply connection (G) to the mechanical seal (I) and from the mechanical seal (I) to the seal return connection (J) using the two lengths of tubing provided. It is imperative that the return line from the seal (I) to the seal return connection (J) does not sag. If installing finned tubing please refer to Table 2.
- 3. Connect the plant water supply to the System inlet (A).
- 4. Before filling the vessel with barrier fluid, disconnect the return pipe (H) at the seal return connection on the vessel (J). This will allow any trapped air to escape out of the seal.
- 5. Turn on the plant water supply and fill the vessel slowly until barrier fluid is seen at the end of the seal return pipe (H).
- 6. Re-connect the seal return pipe (H) to the vessel seal return connection (J).
- 7. Continue filling the vessel until the pressure reading on the pressure gauge (C) is same as the maximum pressure of the plant water line (up to maximum design pressure 6 Barg / 87 psig).
- 8. After commissioning ensure that the plant water supply is maintained at all times.

Table 1: Cooling Coil

Connect the water supply to the cooling coil inlet port on the vessel and from the cooling coil outlet port to an appropriate drain.

Table 2: Finned Tubing

- 1. Install the supplied lengths of finned tubing by connecting one length to the seal supply connection (G) and the other to the seal return connection on the vessel (J).
- 2. The end user supplies and connects the hard pipe from the seal to the finned tubing. **Finned tubing can be bent to suit the application.*

Table 3: Direction of Flow

When the system is first run, check the direction of flow – i.e. which pipe gets hot. The hot pipe must go to the return port on the vessel (J), or flow may cease. If the flow is incorrect, reverse the connections at the seal or vessel.

Optional Extra Installation/ Commissioning

If you have purchased an optional extra please refer to the installation instructions supplied with it.

• For SW2 and SP2 Systems, when used with a water based barrier/buffer the Chloride content shall not exceed 100ppm

Minimum Specification for Hosing

- Pressure: 10 bar / 145 psi at 70°C / 158 °F
- Temperature: 0°C / 32°F

Maintenance

The system should be maintained in accordance with site standards.

Daily

• Check for leaks and barrier fluid pressure & temperature.

Annually

• Check and examine the system for leaks and deterioration. Check expansion vessel pre-charge pressure (when fitted).

5 yearly

• Complete a full internal and external inspection of the vessel and all system component parts.

10 years

The system / vessel should be subjected to a complete and thorough examination, including the undertaking
of a full system hydrostatic proof pressure integrity test by a suitably qualified and competent person*.
AESSEAL recommends this should form part of the written scheme of examination as per the PSSR 2000
regulations.

* AESSEAL offers a full examination, integrity testing and refurbishment service (or, where necessary, a replacement system / vessel), to ensure continued optimum and safe system performance.