- **A - Nitrogen Assembly (Optional Extra)**
- **B - Pressure Regulator (Optional Extra)**
- **C - Vessel Fill**
- **D - Pressure Vessel**
- **E - Weld Pad**
- **F - Level Switch (Optional Extra)**
- **G - Cooling coil**
- **H - Flange Bolts**
- **I - Bottom Flange**
- **J - Cooling Coil Inlet / Outlet**
- **K - Seal Feed Connection**
- **L - Finned Tubing (Optional Extra)**
- **M - Supply / Return Pipe**
- **N - Seal Fittings**
- **O - Mechanical Seal**
- **P - Seal Return Connection**
- **Q - Pressure Gauge (Optional Extra)**
- **R - High / Low Pressure Switch (Optional Extra)**

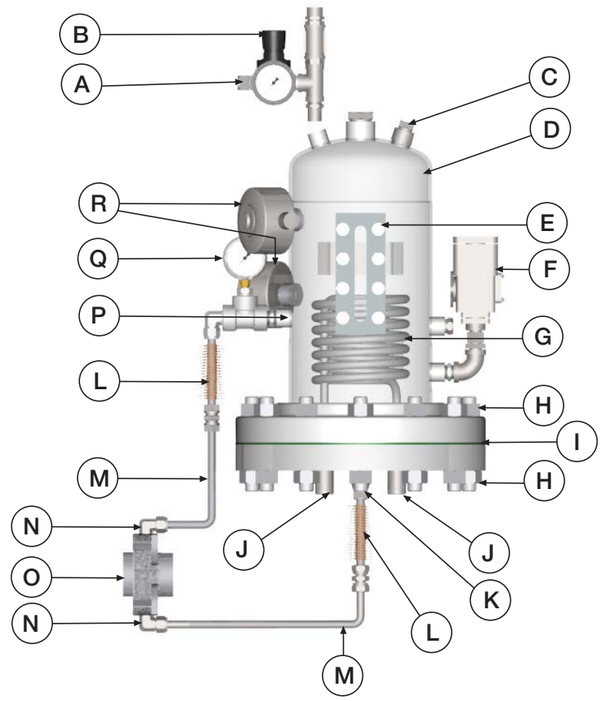

FIG 1. AES-FV Vessel Guide

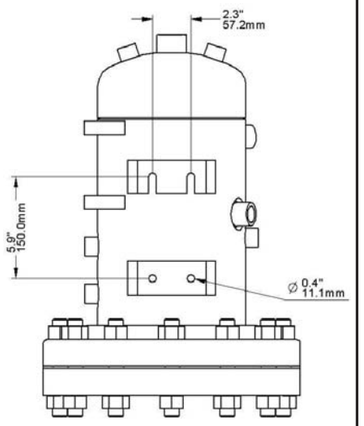

FIG 2. Mounting Guide

Installation & Commissioning

GB

1) Install the AES-FV™ vessel in a suitable location, which is free from vibration and in close proximity to the pump (No more than 2 meters (80 inches) above and 1 meter (40 inches) from the side of the mechanical seal (O)). Mount the AES-FV™ so it is easy to monitor and maintain. For Cooling Coil commissioning please refer to Figure 4.
2) Connect the vessel from the seal feed connection (K) to the mechanical seal (O) and from the mechanical seal (O) to the seal return connection (P) using the two lengths of tubing and the fittings provided. It is imperative that the return line from the seal (M) to the seal return connection (P) does not sag. If installing finned tubing please refer to Figure 3.
3) Before filling the vessel with barrier fluid, disconnect the return pipe (M) at the seal return connection on the vessel (D). This will allow any trapped air to escape out of the seal. If you are installing the vessel on a vertical pump please refer to Figure 6.
4) Open the fill valve (C) and fill the vessel using the barrier fluid you have chosen (oil or water). Once the barrier fluid is seen emerging from the return pipe (M), re-connect it to the seal return connection (P) on the vessel.
5) Continue to fill the vessel until the liquid level reaches a few millimetres below the top of the weld pad level gauge (E). Close the fill valve (C).
6) With your gas supply isolated (use an inert gas), fully back off the pressure regulator (B).
7) Connect the gas supply to the nitrogen assembly (A) using appropriate piping.
8) Turn on your gas supply and adjust the pressure regulator (B) until the desired pressure is reached. This is now set as the vessel operating pressure.
9) Ensure that the gas supply to the vessel remains on for normal operation after commissioning is complete.

DECLARATION OF INCORPORATION

This Mechanical seal Support System must not be put into service until the relevant machinery into which it is incorporated has been declared to be in conformity with the provisions of the Machinery Directive.

Stephen Shaw, Director, AESSEAL MCK Ltd.

AES-FV™

INSTALLATION INSTRUCTIONS

AESSEAL (MCK) Ltd.
139A Hillsborough Old Road
Lisburn
N.Ireland
BT27 5QE

Telephone: +44 (0) 28 9266 9966
Fax: +44 (0) 28 9266 9977
Tel/Fax Hotline: +44 (0) 28 9266 9988
E-mail: MCK@aesseal.co.uk
www.aesseal.com

ENVIRONMENTAL TECHNOLOGY

FIG.3: FINNED TUBING

1) Install the AES-FV™ vessel in a suitable location, which is free from vibration and in close proximity to the pump. Mount the AES-FV™ so it is easy to monitor and maintain.
2) Install the supplied lengths of finned tubing by connecting one length to the seal feed connection (K) and the other to the seal return connection on the vessel (P) *.
3) Customer to supply and connect the hard pipe from the seal to the finned tubing (L).
4) Continue from installation / commissioning instruction 3 to install / commission the vessel correctly.

*Finned tubing can be bent to suit the application.

FIG 4: COOLING COIL

1) To commission the cooling coil the end user supplies their piping and fittings.
2) Isolate the water supply that you intend to run to the cooling coil.
3.) Using the piping and fittings, connect the water supply to the cooling coil inlet port on the vessel (J) and from the cooling coil outlet port (J) to the water supply. Turn on the water supply.

FIG 5: DIRECTION OF FLOW

1) 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 (D), or flow may cease over a short while. If the flow is the wrong way around, reverse the connections at the seal or vessel.
2) This is, of course, only valid where the mechanical seal ports are horizontal. If the mechanical seal ports are vertical, we would recommend that the seal be re-installed. The hot pipe must go to the seal return connection (P) on the vessel.

FIG.6: VERTICAL PUMPS

- On vertical pumps, to prevent a pocket of air being trapped in the seal upon vessel fill, it is advisable to “vent” the outboard faces. This can be achieved by gently lifting the outboard rotary from the stationary. You will see the air escape and barrier fluid appear. At this point ease the faces back to their original position.

AES-FV™ CLEANING FUNCTION

1) Safely isolate the AES-FV™ from the gas supply and remove it from the pump application.
2) Safely drain all the barrier fluid from the vessel.
3) Unscrew the bolts (H) and remove the bottom flange (I).
4) Clean the inside of the vessel.
5) Once cleaning is complete, a new gasket must be used when re-attaching the flange to the vessel.
6) Re-attach the bottom flange (I) using the original bolts (H)
7) Re-install the vessel to the pump application following the installation / commissioning instructions.

AES-FV™ INSTALLATION /COMMISSIONING OPERATION & SAFETY CHECKS

- Return line from the seal (M) to the seal return connection (P) must not sag.
- Return line form the seal (M) to the seal return connection (P) must be warmer than the feed line from the seal feed connection (K) to the mechanical seal (O).
- Set the relieving pressure of the relief valve before setting the working pressure of the vessel
- Set the working pressure of the vessel at 1 Bar / 14.5 psi above the stuffing box pressure.
- Ensure that the gas supply to the vessel remains on during normal operation.
- Ensure all hoses / piping is properly connected and free from leakage.

OPTIONAL EXTRA’S INSTALLATION / COMMISSIONING

- If you purchase an optional extra, please refer to the installation instructions supplied with it.