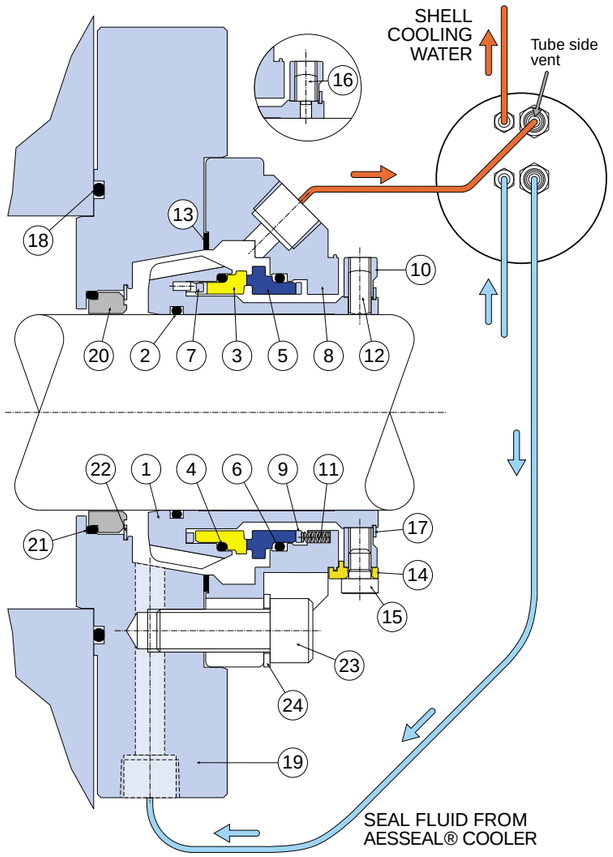
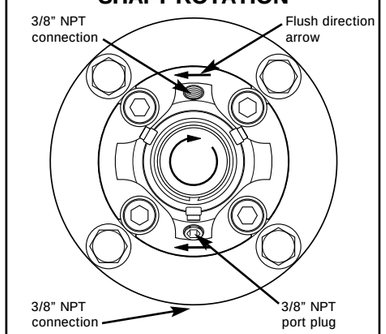
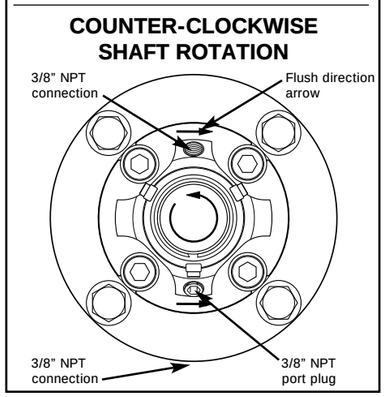
| ITEM | DESCRIPTION | MATERIAL |
|---|---|---|
| 1 | Sleeve | 316L Stainless Steel |
| 2 | Sleeve O Ring | Viton/EPR/Kalrez/Aflas |
| 3 | Rotary Face | SiC/TC |
| 4 | Rotary Face O Ring | Viton/EPR/Kalrez/Aflas |
| 5 | Stationary Face | Carbon/Antimony Carbon/SiC/TC |
| 6 | Stationary Face O Ring | Viton/EPR/Kalrez/Aflas |
| 7 | Drive Ring | 316L Stainless Steel |
| 8 | Gland | 316 Stainless Steel |
| 9 | Spring Plate | 316L Stainless Steel |
| 10 | Clamp Ring | 316L Stainless Steel |
| 11 | Springs | Alloy 276 |
| 12 | Drive Screws | Stainless Steel |
| 13 | Gasket | AF1-GFT |
| 14 | Setting Clips | Brass |
| 15 | Setting Clips Screws | Stainless Steel |
| 16 | Anti-Tamper Screws | Stainless Steel |
| 17 | External Circlip | Stainless Steel |
| 18 | Adaptor Plate O Ring | Viton/EPR/Kalrez/Aflas |
| 19 | Adaptor Plate | 316L Stainless Steel |
| 20 | Restriction Bush | Carbon |
| 21 | Restriction Bush O Ring | Viton/EPR/Kalrez/Aflas |
| 22 | Internal Circlip | Stainless Steel |
| 23 | Caphead Screw* | Stainless Steel |
| 24 | Washer* | Stainless Steel |

*Dependant upon seal/pump design items 23 Caphead Screw and 24 Washer may be fitted from the rear face of the adaptor plate.




## CORRECT PORT ORIENTATION




**Pre-Installation Checks.**

GB

(i) Shaft Outside Diameter is within tolerance ± 0.002” (±0.05mm)
(ii) Shaft run out < 0.004” (0.1mm) T.I.R.
(iii) Shaft end float < 0.005” (0.13mm).
(iv) Fluid seal can be obtained on the Stuffing Box face.
(v) There are no sharp edges over which the seal ‘O’ Ring (2) must pass.

**Installation instructions.**

1. Check the orientation of the flush ports on the seal gland (item 8). When the seal is installed the port on the adaptor plate (item 19) should be at the bottom, with the flush port to be used on the seal gland (item 8) etched with the arrow **OPPOSITE TO THE DIRECTION OF SHAFT ROTATION** at the top. if this is not the case, unbolt caphead screws (items 23), turn the seal through 180º and refit to the adaptor plate, equally tightening caphead screws down firmly.
2. Lubricate the shaft with the grease provided.
3. Slide the seal onto the shaft, noting the correct position of ports.
4. Assemble rest of equipment in final running position.
5. Slide seal into position. Fit washers in all cases and equally tighten Gland Nuts down firmly.
6. Equally tighten the Drive Screws down onto the shaft.
7. Remove setting clips.
8. Spin the shaft by hand. Listen and feel for any shaft binding, etc.
9. Connect the piping connections as described in “AESSEAL Cooler installation instructions - see below.
10. Ensure that the un-used (lower) flush port on the gland (item 8) is sealed with a 3/8” NPT plug.
11. Ensure the pump is primed prior to start up.
12. Retain clips and clip screws for future use.

**DECLARATION OF INCORPORATION**

This Mechanical seal 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.

C.J. Rea
Managing Director,
AESSEAL plc

# SMSS 23™

**CARTRIDGE MECHANICAL SEAL WITH API PLAN 23 ADAPTOR PLATE**

**INSTALLATION INSTRUCTIONS**

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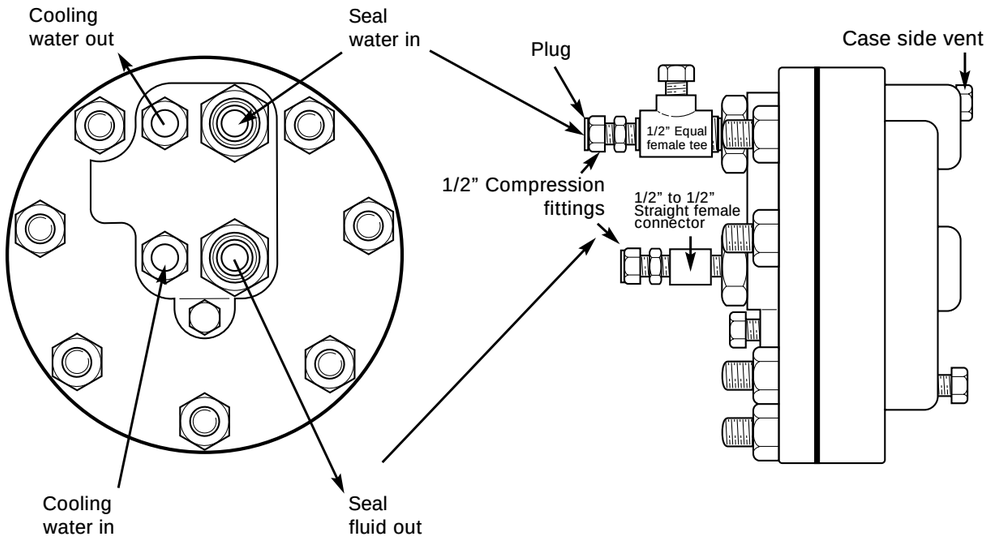
ENVIRONMENTAL TECHNOLOGY

## AESSEAL® COOLER ARRANGEMENT




**AESSEAL® Cooler installation instructions**

The AESSEAL® cooler kit comprises of a unit with cast iron casing and 316 Stainless Steel tubes, tube side vent, case side vent and drain port. Four S/S 1/2” (12mm) compression fittings for seal and cooler.

AESSEAL® cooler units can be supported by their pipework or by the bracket supplied. The units must be mounted vertically, as close to the seal as possible, and with the tube side vent at the top. That is to say between 18” to 24” above the centre line of the seal chamber and no more than 48” horizontally from the seal chamber.

**Piping Up**

1. Make the connections at the seal and adaptor plate with the two 3/8” NPT male - 1/2” (12mm) compession fittings supplied.
2. Connect the port on the adaptor plate (item 19) to the lower of the two seal fluid connections on the AESSEAL® cooler with the 1/2” (12mm) compression fitting supplied.
3. Connect the upper port on the seal gland (item 8) to the upper of the two connections on the AESSEAL® cooler (with the tube side vent fitted) with the 1/2” (12mm) compression fitting supplied.
4. To acheive counter flow (to obtain maximum heat-dump) feed the cooling water in to the lower connection on the AESSEAL® cooler with the 1/2” NPT female thread and return out of the upper port with the same thread.

**Start Up**

1. Open both vents on the AESSEAL® cooler to allow for all air to be removed from the pipework. When fluid appears reseal each of the vents.
2. Re-tighten housing and manifold nuts after 2 - 3 hours of running and check their tightness after 24 hours.