Mechanical Seals & Support Systems for SCREENS

- INNOVATIVE SEAL SOLUTIONS FOR SCREENS
- PROBLEMS WITH SCREENS
- SEAL DESIGN PHILOSOPHY
- SPECIFIC EQUIPMENT MODELS
- SEAL SCREEN CASE HISTORIES
MECHANICAL SEALS AND SUPPORT SYSTEMS FOR SCREENS

Introduction

Throughout the entire Pulp & Paper process, Screening and cleaning of the pulp is continuously conducted to ensure that the paper stock is free from undesirable knots, fibrous and non-fibrous materials or any foreign debris.

This Screening and cleaning process requires a series of dedicated pieces of rotating equipment which are generally robust in construction and incorporate mechanical seals to prevent the stock from attacking bearings and drive mechanisms.

There are numerous types of Screens and Screen manufacturers encountered in the marketplace.

AESSEAL® have a number of Screen seal designs to suit most of the commonly encountered Screen equipment found in the industry.

AESSEAL plc Disclaimer

EXCEPT AS EXPRESSLY PROVIDED HEREIN, AESSEAL plc SHALL NOT BE LIABLE FOR THE BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR FOR ANY DAMAGES OR OTHER LIABILITY ARISING OUT OF OR IN CONJUNCTION WITH CUSTOMERS’ USE OF SUPPLIER PRODUCTS OR AESSEAL plc OR THE AUTHORISED DISTRIBUTOR DESIGNING, MANUFACTURING OR SELLING SUPPLIER PRODUCTS. IN NO EVENT SHALL AESSEAL plc BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOST SALES OR PROFIT, LOST PRODUCTION OR OUTPUT, INJURY TO PROPERTY OR REPUTATION, OR ANY OTHER DAMAGES WHETHER ARISING IN CONTRACT OR TORT OR OTHERWISE (WHETHER OR NOT ATTRIBUTABLE TO THE FAULT OR NEGLIGENCE OF AESSEAL plc). UNDER NO CIRCUMSTANCES SHALL ANY RECOVERY OF ANY KIND AGAINST AESSEAL plc BE GREATER IN AMOUNT THAN THE PRICE OF THE PRODUCT TO THE END USER.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentations. It is not intended, however, to substitute any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, AESSEAL plc makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a licence to operate under or a recommendation to infringe any patent right.
# CONTENTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Problems with Screens</td>
<td>4</td>
</tr>
<tr>
<td>Screens Feeding the Paper Machine</td>
<td>4</td>
</tr>
<tr>
<td>AESSEAL® Seal Design Philosophy for Screens</td>
<td>5</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit HOOPER/IMPCO Pressure Screen</td>
<td>6</td>
</tr>
<tr>
<td>AESSEAL® IADC™-FC, &amp; IADC™-K on HOOPER Model PSV-2600 Pressure Screen</td>
<td>7</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BLACK &amp; CLAWSON ULTRA Screen (100mm)</td>
<td>8</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BLACK &amp; CLAWSON 300 ULTRA H Screen (5.500&quot;)</td>
<td>8</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BLACK &amp; CLAWSON Screen (62/55mm)</td>
<td>9</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BLACK &amp; CLAWSON P24 Screen</td>
<td>10</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit AHLSTROM PRESSURE Screen</td>
<td>11</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit VALMET TP100 Screen (80mm)</td>
<td>12</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit VALMET TAMPELA Screen (120mm)</td>
<td>13</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit RECARD REFINER (80mm &amp; 105mm)</td>
<td>14</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit MODUSCREEN</td>
<td>15</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit MODUSCREEN F1</td>
<td>15</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BELOIT</td>
<td>16</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BELOIT JONES LOW PULSE Screen</td>
<td>16</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit HEINRICH FIELDER Screen (90mm)</td>
<td>17</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit MDC™-SUNDS JYLA Screens</td>
<td>18</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit Screen (Model 25)</td>
<td>18</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BIRD Screens</td>
<td>19</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BIRD Screen (Model 400)</td>
<td>20</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit BIRD CENTRISCREEN CN70</td>
<td>21</td>
</tr>
<tr>
<td>AESSEAL® Single Seal Designs to suit LAMORT Screen</td>
<td>21</td>
</tr>
<tr>
<td>AESSEAL® Double Seal Designs to suit LAMORT Screen SPN800</td>
<td>22</td>
</tr>
<tr>
<td>AESSEAL® Double Seal Designs to suit LAMORT Screen</td>
<td>23</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit JYHLAVAARA Screen</td>
<td>23</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit VOITH Screens</td>
<td>24</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit OMEGA Screens</td>
<td>26</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit SUNDS Screens</td>
<td>27</td>
</tr>
<tr>
<td>AESSEAL® RM6000 Screen Seal</td>
<td>27</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit TOSCHI Screens</td>
<td>28</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit FINCKH Screens</td>
<td>29</td>
</tr>
<tr>
<td>AESSEAL® Seal Designs to suit JYHLAVAARA Screens (150)</td>
<td>29</td>
</tr>
<tr>
<td>AESSEAL® Further Screen Seal Designs</td>
<td>30</td>
</tr>
<tr>
<td>Summary</td>
<td>31</td>
</tr>
</tbody>
</table>

Please contact AESSEAL® for further information on stock codes and face materials featured in this booklet.
**PROBLEMS WITH SCREENS**

Unlike some pieces of rotating equipment, Screens suffer from several problems, most of which are a direct result of poor sealing.

**Screens operating in the Pulp Mill**

If the Screen seal leaks, the effects to the pulp mill process can be disheartening, to say the least. The following are some typical scenarios;

1. **Sealing Device Leaks**
   - Water / pulp falls on the Screen drive belt
   - Belt starts to slip on drive shaft
   - Equipment efficiency lost

2. **Sealing Device Leaks**
   - Water / pulp contaminates Screen bearings
   - Bearing deterioration
   - Equipment / bearing failure

3. **Sealing Device Leaks**
   - Un-Screened pulp contaminates the basket
   - Blockage to the basket
   - Equipment shutdown to remove blockage

**How do you un-block the Basket?**

Some Screens are not small. They often weigh hundreds of kg’s (thousands of lbs), and therefore Screen maintenance / strip down often requires the use of heavy, cumbersome lifting equipment.

The following process is typical:

- Remove securing devices on the top plate / lid
- Remove the lid using a Crane or similar lifting equipment
- Remove the basket
- Wash down the equipment
- Remove and replace the sealing device
- Re-assemble equipment in the reverse order to disassembly

Needless to state, the elimination or minimization of such a procedure is seen as advantageous to on site personnel. The use of a mechanical seal can help the situation.

**SCREENS FEEDING THE PAPER MACHINE**

If the Screen seal leaks, the effects to the paper machine are often worse than above. The following explains why:

As above, if the Screen sealing device leaks, stock and water can contaminate Screen bearings, or make Screen drive belts slip. In extreme conditions such drive belts can deteriorate or even fall off.

Problems at this stage can cause major process disruptions. If a Screen sited particularly near to the head box or fan pump breaks down, or permits poor stock supply to such equipment, it could result in stock flow interruptions to the headbox. This may lead to breaks in the finished paper product, which must be avoided at all cost.
The AESSEAL® Seal Design Philosophy for Screens

The AESSEAL® design philosophy for mechanical seals fitted to Screens is as follows:

**Modular Design:**
In all AESSEAL® designs, modularity is of prime importance as this allows the company to provide service at an affordable cost. The seal faces are often the longest lead time item for any mechanical seal, and therefore adapting the "metalwork" around the standard "off-the-shelf" seal faces often makes technical and commercial sense.

**Robust Construction:**
Screens are robustly constructed items of rotating equipment as they have to stand up to various levels of foreign debris including knots, fibrous & non-fibrous materials and contraries. The mechanical seal has often got to be able to stand up to such demands including "misuse" where appropriate.

**Change the Seal Environment:**
A mechanical seal is only as good as the environment in which it is installed. All AESSEAL® seal designs are optimized (where possible) to improve the seal environment, thereby helping to extend seal life.

**Easy to Install:**
Installing Screen seals can often be problematic due to the position of the equipment and the accessibility of the equipment fixings. For this reason, AESSEAL® (where possible) provide cartridge or clipped mechanical seal designs, where the seal faces are factory set and tested before dispatch. This is often extremely advantageous when the seal is large in diameter.

The diagram below shows a typical Screen seal arrangement:

Traditionally, the seal gland is manufactured from a one-piece component, straddling the diameter of the bearing support bracket. This often means that the gland component is expensive, particularly in the event of seal repairs.

The AESSEAL® approach to such equipment can be seen on the next page in the Hooper / Impco seal design.
AESSEAL® SEAL DESIGNS TO SUIT HOOPER / IMPCO PRESSURE SCREENS

AESSEAL® have designed a range of Screen and Knotter seals designed specifically to suit the Impco HI-Q Knotters and Impco HI-Q Fine Screen ranges, models 208, 210, 212, 300 and 400.

The mechanical seal Screen design incorporates a separate adapter plate, thereby reducing the gland costs for repair. Furthermore, the modular approach allows the same seal to be offered for a variety of different Screen models, with only the need to change the adapter plate. An example of this is shown in the table below. Note the same seal Z Reference, whilst varying the adapter plate Z Reference to suit different equipment models.

Furthermore, the modular approach allows the customer to select either a double or single seal within the same modular gland configuration. This reduces inventory, whilst improving availability from the AESSEAL® factory.

This has proven COST savings, as described in case history 1210. Further case histories include 700, 703 and 705.

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft Size</th>
<th>Seal Size</th>
<th>Z Ref - Seal</th>
<th>Z Ref - Adapter Plate</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-Q Fine</td>
<td>-</td>
<td>3.500&quot;</td>
<td>Z8351</td>
<td>-</td>
<td>7114013</td>
</tr>
<tr>
<td>Hi-Q Fine</td>
<td>-</td>
<td>3.500&quot;</td>
<td>Z8460</td>
<td>Z8460</td>
<td>7114616</td>
</tr>
<tr>
<td>Hi-Q Fine</td>
<td>-</td>
<td>3.500&quot;</td>
<td>Z9072</td>
<td>Z9072</td>
<td>7112187</td>
</tr>
<tr>
<td>PSV2600</td>
<td>4.000&quot;</td>
<td>4.125&quot;</td>
<td>Z4422</td>
<td>Z4423</td>
<td>6462045</td>
</tr>
<tr>
<td>PSV400 ‘C’</td>
<td>4.000&quot;</td>
<td>4.125&quot;</td>
<td>Z4422</td>
<td>Z4597</td>
<td>6462850</td>
</tr>
<tr>
<td>Hi-Q Fine</td>
<td>-</td>
<td>85mm</td>
<td>Z4855</td>
<td>-</td>
<td>6464344</td>
</tr>
</tbody>
</table>

See case histories 700, 703 and 705.
AESSEAL® IADCTM-FC & IADCTM-K DOUBLE SEALS TO SUIT HOOPER MODEL PSV-2600 PRESSURE SCREEN

Installation Guidelines
These pressure Screens are often sealed with a specific model of competitor’s seal, or with a multiple lip seal / grease arrangement, neither of which work very well. The stuffing box area usually has one line going from the bottom of the bearing assembly, up through the upper bearing assembly which brings water or grease to the seal area. In order to install the AESSEAL® double seal, it is necessary to install another line 180º opposite to the line mentioned above. The IADCTM-FC is a double seal, and needs to have barrier water going in and out of the seal. The Mill machine shop should drill the bearing housing for this second line and install a length of stainless tubing, threaded at both ends, long enough for the bearing assembly.

On the seal gland plate inlet and outlet connections, install 90º connectors, and tighten these connectors so that the inlet to the 90º connector is pointing radially around the seal. Take two, 18” long stainless steel braided hoses and connect them to the seal water lines. Hook one end of this hose to the threaded end of the stainless steel tubing protruding just above the top of the upper bearing housing. Hook up the second hose in the same way. Then, before bolting the seal adapter plate to the top of the bearing housing, rotate the seal and adapter plate so as to take up some of the slack length of both seal water hoses. This wraps the seal water hoses radially around the shaft. Care should be taken not to wind so tight as to stretch the hoses or make the hoses touch/rub the shaft. Then push the adapter plate down on the bearing housing.

Since the bearing housing is usually manufactured/repaired in the Machine shop, insert several bolts and nuts on the adapter plate to hold the seal in place. The adapter plate can not be tightened fully until the bearing assembly is lowered into the pressure Screen assembly in the Mill.

Once installed into the Screen assembly, fully tighten the seal adapter plate. Also, be very careful to hook up the seal water to the correct connections on the bottom of the bearing assembly. As there are five connectors in total, (three grease and two water connections in a very confined area), be sure to mark / identify each connector properly. This is best done before installing the bearing assembly into the pressure Screen.

Verify that the seal water flow is going in and out of the seal, and adjust the pressure to 15 psig (1 bar) higher than the Screen pressure, then start Screen.

See case histories 700, 703 and 705.
AESSEAL® SEAL DESIGNS TO SUIT BLACK & CLAWSON ULTRA SCREENS

INBOARD STATIONARY FACE
INBOARD ROTARY FACE

ELASTOMER MATERIAL

AZA7419 TT A 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request

AESSEAL® SEAL DESIGN TO SUIT BLACK & CLAWSON 300 ULTRA H SCREEN (5.500")

5.500" IASC™ to suit a Black & Clawson 300 Ultra H Screen

AESSEAL® Reference: Z5742
AESSEAL® Drawing Number: 6469547

AZA5742 TT A 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>676 Ultra</td>
<td>100mm</td>
<td>Z7419</td>
<td>7107454</td>
</tr>
<tr>
<td>Ultra</td>
<td>3.500&quot;</td>
<td>Z7510</td>
<td>7108441</td>
</tr>
<tr>
<td>Ultra</td>
<td>80mm</td>
<td>Z8892</td>
<td>7119098</td>
</tr>
<tr>
<td>Ultra</td>
<td>3.625</td>
<td>Z9372</td>
<td>7125401</td>
</tr>
</tbody>
</table>

Exotic materials available on request
AESSEAL® have designed and supplied clipped single mechanical seals, 5.500" IASC™, to suit a Black & Clawson 300 Ultra-H Horizontal Screen.

The gland has been designed to align with the existing flush holes in the equipment, whilst the volume around the seal faces has been maximized to facilitate seal face cooling.

The stationary has been designed using the AESSEAL® standard, patented self aligning seat technology, and the sleeve has been extended to seal inside the hub of the rotor.

For further information, see Z Reference 5742 and AESSEAL® general arrangement 6469547.

AESSEAL® SEAL DESIGN TO SUIT BLACK & CLAWSON SCREEN (62/55mm)

62/55mm Special SAI™ and Stationary to suit a Black & Clawson Screen
AESSEAL® Reference: Z5928
AESSEAL® Drawing Number: 6470610

INBOARD STATIONARY FACE
INBOARD ROTARY FACE

ELASTOMER MATERIAL

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGN TO SUIT BLACK & CLAWSON P24 SCREEN

80mm IASC™ to suit a Black & Clawson P24 Screen
AESSEAL® Reference: Z5978
AESSEAL® Drawing
Number: 6470703

INBOARD STATIONARY FACE
INBOARD ROTARY FACE

ELASTOMER MATERIAL

AZA5978 TT A 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGNS TO SUIT AHLSTROM PRESSURE SCREENS

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>55mm</td>
<td>-</td>
<td>6462874</td>
</tr>
<tr>
<td>F2</td>
<td>70mm</td>
<td>Z9004</td>
<td>7120935</td>
</tr>
<tr>
<td>F3</td>
<td>110mm</td>
<td>Z4143</td>
<td>6460904</td>
</tr>
<tr>
<td>F4</td>
<td>110mm</td>
<td>Z4143</td>
<td>6460904</td>
</tr>
<tr>
<td>F3F</td>
<td>120mm</td>
<td>Z8934</td>
<td>7119672</td>
</tr>
<tr>
<td>HB4 &amp; HB5</td>
<td>140mm</td>
<td>Z8749</td>
<td>7117311</td>
</tr>
<tr>
<td>F5</td>
<td>5.875”</td>
<td>Z8619</td>
<td>7115842</td>
</tr>
</tbody>
</table>

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.

For a similar Valmet Tempella Screen design see case history 1209 for further details.
The double mechanical cartridge seal shown above incorporates a highly efficient PATENT PENDING pumping scroll, with deflector and is specifically designed to fit the 80mm Valmet TP100 Screen.

With growing environmental concerns and plant focus on water usage, AESSEAL® elected to install a "pumping" mechanical seal with SSE25 (25 litres, 6.6 US gallons) Jumbo pot, shown in the inset photo above.

Barrier fluid enters the gland, is directed to the inboard seal faces, then circulated past the outboard faces, until finally exiting through the "out" port. This ensures continuous fluid replacement at the seal faces, effectively removing heat into the barrier system.

The seal was balanced towards the barrier fluid, as the process pressure varied from an operating pressure of 2 bar (29 psi) to 4 bar, (58 psi) depending on whether or not the basket was blocked or Jet washed.

The inboard seal faces were positioned within a "large volume" of product fluid, thereby helping to dissipate inboard seal face heat.

For further information, see Z Reference 4658, case history 1205, and AESSEAL® general arrangement 6463079.
The double mechanical cartridge seal shown above is specifically designed to fit the 120mm Valmet Tampela Screen.

The seal is supplied with a fully machined gland, which allows the barrier in and barrier out ports on the Screen to be "aligned" with slots in the gland. The sleeve is undercut to maximize the volume of barrier fluid under the seal faces, whilst a "heavy duty" setting clip design helps to ensure that the seal is robustly set during the installation process.

All seal faces supplied are modular to the AESSEAL® Standard CDSA™ range of mechanical seals.

For further information, see Z Reference 4840, case history 1209 and AESSEAL® general arrangement 6464264.
AESSEAL® SEAL DESIGN TO SUIT
RECARD REFINER (80mm, 85mm & 105mm)

80mm / 85mm / 105mm IASC™ to suit a Recard Refiner
AESSEAL® References: Z5807 / Z5808 / Z6002
AESSEAL® Drawing Numbers: 6469857 / 6469433 / 6470845

AESSEAL® have designed and supplied single clipped mechanical seals for three of the Recard Refiner Screen models, 80mm, 85mm and 105mm.

Once again the gland has been designed to align with the existing flush holes in the equipment, whilst the volume around the seal faces has been maximized to facilitate seal face cooling.

The stationary is designed with the AESSEAL® standard, patented self-aligning seat technology.

For further information, see Z Reference 6002, 5807 and 5808, and AESSEAL® general arrangements 6470845, 6469857 and 6469853 respectively.

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.
**AESSEAL® SEAL DESIGN TO SUIT MODUSCREEN**

125mm IADC™ Seal to suit a Ahlstrom Moduscreen F3/F4  
AESSEAL® Reference: Z7113  
AESSEAL® Drawing Number: 7104236

---

**AESSEAL® SEAL DESIGN TO SUIT MODUSCREEN F1**

65mm IADC™ Seal to suit a Ahlstrom Moduscreen F1  
AESSEAL® Reference: Z7522  
AESSEAL® Drawing Number: 7108513

---

**AESSEAL® SEAL DESIGN TO SUIT MODUSCREEN**

125mm IADC™ Seal to suit a Ahlstrom Moduscreen F3/F4  
AESSEAL® Reference: Z7113  
AESSEAL® Drawing Number: 7104236

---

**AESSEAL® SEAL DESIGN TO SUIT MODUSCREEN F1**

65mm IADC™ Seal to suit a Ahlstrom Moduscreen F1  
AESSEAL® Reference: Z7522  
AESSEAL® Drawing Number: 7108513
AESSEAL® SEAL DESIGN TO SUIT BELOIT JONES LOW PULSE SCREEN M18, M24, M28, M32, M44, M50 AND M58

AESSEAL® have designed and supplied a single component mechanical seal for the 3.125”, 4.000” and 5.500” Beloit Jones Low pulse Screen sizes M44, M32, M50, M58, M18, M24 and M28. The seal has been designed as a stationary seal (with springs mounted in the stationary member) and has both seal faces in the standard AESSEAL® monolithic (one-piece) design, for improved temperature performance.

For further information, see Z Reference 8358, 5693, 7166 and AESSEAL® general arrangement 6469433 and 7104921 and 7114055.

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.

<table>
<thead>
<tr>
<th>Model Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.125&quot;</td>
<td>Z8358</td>
<td>7114055</td>
</tr>
<tr>
<td>4.000&quot;</td>
<td>Z5693</td>
<td>6469433</td>
</tr>
<tr>
<td>5.500&quot;</td>
<td>Z7166</td>
<td>7104921</td>
</tr>
</tbody>
</table>
AESSEAL® SEAL DESIGN TO SUIT
HEINRICH FIELDER SCREEN (90mm)

90mm IADC™ to suit a Heinrich Fielder Screen
AESSEAL® Reference: Z5664
AESSEAL® Drawing Number: 6469213

AZA5664 CSSC K 01

C = CARBON
S = SILICON CARBIDE
T = TUNGSTEN CARBIDE
A = CERAMIC
X = 316 S/S CrOx.
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079
01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGNS TO SUIT MDC™ - SUNDS JYLA SCREENS

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.

### Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>J YLA 100</td>
<td>75mm</td>
<td>Z3840</td>
<td>6459736</td>
</tr>
<tr>
<td>J YLA 150</td>
<td>100mm</td>
<td>Z3615</td>
<td>6458574</td>
</tr>
</tbody>
</table>

See case histories 1206 and 1207 for further details.

### AESSEAL® SEAL DESIGN TO SUIT SCREEN (MODEL 25)

Screen (Model 25) 90mm/91mm
AESSEAL® Reference: Z2121
AESSEAL® Drawing Number: 6453744
AESSEAL® SEAL DESIGNS TO SUIT BIRD SCREENS

Again, employing the modular design philosophy, AESSEAL® have developed various Screen seals designs to suit BIRD models. The design for a Bird Screen 50 is shown below.

These pieces of equipment are commonly packed, therefore converting them to use a mechanical seal is generally a function of the packing arrangement previously employed. The bore of the packed box is usually worn and scored by the packing. Therefore, the surface finish of the box bore is one which is not conducive to elastomer sealing.

The seal design shown employs a gasket at the bottom of the box bore and several O-rings to ensure sealing on the bore diameter. Flush water enters the lower housing connection over the seal faces, and exits through the upper housing connection.

A floating restriction bush at the top of the seal prevents flush water escaping whilst preventing the ingress of stock. This makes the application little more than a water seal application. The whole seal unit is supplied in a cartridge format with setting clips, ensuring accurate and fast installation with minimum process disruption.

See case histories 224, 273, 706, 723 and 1208.

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>3.000&quot;</td>
<td>Z5755</td>
<td>6469586</td>
</tr>
<tr>
<td>14</td>
<td>3.750&quot;</td>
<td>Z7644</td>
<td>7109521</td>
</tr>
<tr>
<td>14B</td>
<td>3.750&quot;</td>
<td>Z9034</td>
<td>7121614</td>
</tr>
<tr>
<td>50</td>
<td>3.848&quot;</td>
<td>Z4460</td>
<td>6462135</td>
</tr>
<tr>
<td>80</td>
<td>4.724&quot;</td>
<td>Z4267</td>
<td>6461080</td>
</tr>
</tbody>
</table>

The 3.000" Bird Screen model 400, has been sealed with a IADC™, extremely similar in design to the Impco principle shown previously. The IADC™ is a double seal.
AESSEAL® SEAL DESIGN TO SUIT
BIRD SCREEN

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1.750&quot;</td>
<td>Z8828</td>
<td>7118395</td>
</tr>
<tr>
<td>400</td>
<td>85mm</td>
<td>Z7386</td>
<td>7107036</td>
</tr>
</tbody>
</table>

Model | Shaft | Z Reference Details
--- | --- | ---
100  | 1.750" | Z7386
400  | 85mm  | Z8828

ELASTOMER MATERIAL

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGN TO SUIT
BIRD CENTRISCREEN CN70

5.500” IADC™ SEAL to suit a Bird Centriscreen CN70
AESSEAL® Reference: Z7423
AESSEAL® Drawing Number: 7107509

AZA7423 TTXC AV 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
A = AFLAS
X = 316 S/S CrOx.
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079
01 = 316 Stainless Steel
Exotic materials available on request

AESSEAL® SINGLE SEAL DESIGN TO SUIT
LAMORT SCREEN

40mm, 50mm and 90mm IASC™ to suit a LAMORT SCREEN
AESSEAL® Reference: Z7151, Z7577 and Z7638
AESSEAL® Drawing Number: 7104674, 7108949 and 7109462

AZA7151 TT V 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079
01 = 316 Stainless Steel
Exotic materials available on request

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN4</td>
<td>40mm</td>
<td>Z7638</td>
<td>7109462</td>
</tr>
<tr>
<td></td>
<td>50mm</td>
<td>Z7577</td>
<td>7108949</td>
</tr>
<tr>
<td></td>
<td>90mm</td>
<td>Z7151</td>
<td>7104674</td>
</tr>
</tbody>
</table>
AESSEAL® DOUBLE SEAL DESIGN TO SUIT LAMORT SCREENS

**Z Reference Details**

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1200</td>
<td>90mm</td>
<td>Z8473</td>
<td>7114661</td>
</tr>
<tr>
<td>SPN800</td>
<td>60mm</td>
<td>24096</td>
<td>6460759</td>
</tr>
</tbody>
</table>

- "C" = CARBON
- "T" = TUNGSTEN CARBIDE
- "S" = SILICON CARBIDE
- "X" = 316 S/S CrOx.
- "A" = CERAMIC
- "V" = VITON
- "E" = EPR
- "A" = AFLAS
- "K" = KALREZ 4079
- "01" = 316 Stainless Steel

Exotic materials available on request.
AESSEAL® DOUBLE SEAL DESIGN TO SUIT LAMORT SCREEN

100mm DOUBLE CONCENTRIC SEAL to suit a LAMORT SCREEN
AESSEAL® Reference: Z7152
AESSEAL® Drawing Number: 7104706

AESSEAL® SEAL DESIGN TO SUIT JYLHAVAARA SCREEN

100mm IADC™ c/w. FMG. Screen Seal to suit a Jylhavaara Screen
AESSEAL® Reference: Z7129
AESSEAL® Drawing Number: 7104494

Exotic materials available on request
AESSEAL® SEAL DESIGNS TO SUIT VOITH SCREENS

AESSEAL® have a number of Screen seal designs to suit most of the commonly encountered Screen designs found in the industry.

The illustration below indicates the AESSEAL® design to suit the Voith (OS) Screen range.

This seal employs standard, modular, inventoried AESSEAL® components, with a seal gland which has integral flow breakers, optimising conditions at the seal faces.

The seal gland is also designed to catch the product fluid (stock) when the Screen basket is emptied. This prevents the seal faces (Tungsten Carbide v Tungsten Carbide) from dry running when the equipment is started and the basket is being filled. Dry running conditions are often extremely destructive to seal faces, particularly when two hard seal faces are run together. This simple but effective solution is one approach which AESSEAL® have introduced to help extend seal life.

### Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR12</td>
<td>60mm</td>
<td>Z8931</td>
<td>7119576</td>
</tr>
<tr>
<td>OS2</td>
<td>70.0mm</td>
<td>Z4418</td>
<td>-</td>
</tr>
<tr>
<td>OS4</td>
<td>80.0mm</td>
<td>Z4419</td>
<td>-</td>
</tr>
<tr>
<td>OS8</td>
<td>90.0mm</td>
<td>Z4420</td>
<td>-</td>
</tr>
<tr>
<td>WHOIT</td>
<td>95mm</td>
<td>Z8733</td>
<td>7117000</td>
</tr>
<tr>
<td>VS5</td>
<td>2.125&quot;</td>
<td>Z8933</td>
<td>7119667</td>
</tr>
</tbody>
</table>

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.
AESSEAL® SEAL DESIGN TO SUIT
VOITH SCREENS 94MM, 101MM AND 130MM

IADC™ Seal to suit a Voith Screen MSS 08/05, MSS 10/06, MSS 12/12, and MSS 15/15
AESSEAL® Reference: Z7280, Z7277, and Z7278
AESSEAL® Drawing Number: 6470880, 6470881, 6470890 and

The cross sections shown have been chosen to illustrate the wide variety of designs available for this type of equipment.

**AZA7278 TT V 01**

- C = CARBON
- T = TUNGSTEN CARBIDE
- S = SILICON CARBIDE
- X = 316L S/S CrOx.
- A = CERAMIC
- E = EPR
- V = VITON
- K = KALREZ 4079

**Z Reference Details**

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSS 08/05 MSS 10/06</td>
<td>94mm</td>
<td>Z7280</td>
<td>6470880</td>
</tr>
<tr>
<td>MSS 12/12</td>
<td>101mm</td>
<td>Z7277</td>
<td>6470881</td>
</tr>
<tr>
<td>MSS 15/15</td>
<td>130mm</td>
<td>Z7278</td>
<td>6470890</td>
</tr>
</tbody>
</table>
AESSEAL® SEAL DESIGN TO SUIT
OMEGA SCREENS

60 mm IASC™ Seal to suit a Omega Screen
AESSEAL® Reference: Z5438
AESSEAL® Drawing Number: 6468137

INBOARD STATIONARY FACE
INBOARD ROTARY FACE

AZA5438 TT V 01

ELASTOMER MATERIAL

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC
V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGN TO SUIT
SUNDS SCREENS

Z Reference Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Shaft</th>
<th>Z Ref</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>T9-CURC</td>
<td>100mm</td>
<td>Z7883</td>
<td>7111145</td>
</tr>
<tr>
<td>T9</td>
<td>100mm</td>
<td>Z7370</td>
<td>7106736</td>
</tr>
</tbody>
</table>

AESSEAL® SEAL DESIGN TO SUIT
SUNDS SCREENS

AESSEAL® RM6000 SCREEN SEAL

42mm RM6000 Screen Seal
AESSEAL® Reference: Z8153
AESSEAL® Drawing Number: 7112729

AESSEAL® SEAL DESIGN TO SUIT
SUNDS SCREENS
AESSEAL® SEAL DESIGN TO SUIT TOSCHI SCREENS

120mm IASC™ Seal arrangement to suit a Toschi ECT4 screen
AESSEAL® Reference: Z7519
AESSEAL® Drawing Number: 7107388

INBOARD STATIONARY FACE
INBOARD ROTARY FACE

ELASTOMER MATERIAL

AZA7519 TT V 01

C = CARBON
T = TUNGSTEN CARBIDE
S = SILICON CARBIDE
X = 316L S/S CrOx.
A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
AESSEAL® SEAL DESIGN TO SUIT FINCKH SCREENS

3.5625 IASC™ seal arrangement to suit a Finckh GR2 screen
AESSEAL® Reference: ZB212
AESSEAL® Drawing Number: 7113102

**AZA8212 TT A 01**

- C = CARBON
- T = TUNGSTEN CARBIDE
- S = SILICON CARBIDE
- X = 316L S/S CrOx.
- A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request

AESSEAL® SEAL DESIGN TO SUIT JYLHAAVAARA SCREENS

100mm USFC™ seal arrangement to suit a Jylhavaara 150 screen
AESSEAL® Reference: Z8061
AESSEAL® Drawing Number: 7112057

**AZA8061 TT A 01**

- C = CARBON
- T = TUNGSTEN CARBIDE
- S = SILICON CARBIDE
- X = 316L S/S CrOx.
- A = CERAMIC

V = VITON
E = EPR
A = AFLAS
K = KALREZ 4079

01 = 316 Stainless Steel
Exotic materials available on request
FURTHER SCREEN SEAL DESIGNS

100mm IASC™ to suit Sunds Pressure Screen - Arjo Wiggins
AESSEAL® Drawing Number: 6470062

90mm IASC™ to suit a Heinrich Fielder Screen
AESSEAL® Drawing Number: 6467456

7.374” Screen Seal to suit Lamort SPM1900 Stock Screen
AESSEAL® Drawing Number: 6461781
SUMMARY

The above examples illustrate a small selection from the Screen sealing experience of AESSEAL® on a worldwide level, covering many of the commonly encountered types of Screens found in the marketplace.

In most instances, with the installation of AESSEAL® products, seal performance and equipment life have been extended by the use of innovative and “common sense” approaches to Screen sealing. Furthermore, seal cost savings have been realized in the majority of applications covered.

AESSEAL® is also committed to providing customer service through modular design and high levels of component inventory.

For further information on any of the products covered or any other Screen application, contact your nearest AESSEAL® sales and technical support team.
Case History

INDEX OF SPECIFIC APPLICATIONS

Seal Type

<table>
<thead>
<tr>
<th>Seal Type</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIRD Screen Seal:</td>
<td>Ahlstrom Karhula</td>
</tr>
<tr>
<td></td>
<td>Bird Centriscreen:</td>
</tr>
<tr>
<td></td>
<td>Black &amp; Clawson 30 P Screen:</td>
</tr>
<tr>
<td>IADC™:</td>
<td>Black &amp; Clawson Omega Screen:</td>
</tr>
<tr>
<td></td>
<td>Black &amp; Clawson PS 36 Screen:</td>
</tr>
<tr>
<td>IASC™:</td>
<td>Black &amp; Clawson Selectifier Screen:</td>
</tr>
<tr>
<td>SAI™/USL™:</td>
<td>Finckh Screen:</td>
</tr>
<tr>
<td></td>
<td>Hooper Pressure Screen:</td>
</tr>
<tr>
<td></td>
<td>Voith:</td>
</tr>
<tr>
<td></td>
<td>Valmet TP100:</td>
</tr>
<tr>
<td></td>
<td>Sunds Jyla:</td>
</tr>
<tr>
<td></td>
<td>Beloit HI-Q- Fine Screen:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>706</td>
</tr>
<tr>
<td></td>
<td>700, 703, 705, 1205, 1208, 1209, 1210</td>
</tr>
<tr>
<td></td>
<td>221, 397, 716, 722</td>
</tr>
<tr>
<td></td>
<td>004, 224, 723</td>
</tr>
<tr>
<td></td>
<td>273</td>
</tr>
<tr>
<td></td>
<td>291</td>
</tr>
<tr>
<td></td>
<td>1206, 1207</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>224, 273</td>
</tr>
<tr>
<td></td>
<td>723, 1208, 706</td>
</tr>
<tr>
<td></td>
<td>397, 716</td>
</tr>
<tr>
<td></td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>722</td>
</tr>
<tr>
<td></td>
<td>397</td>
</tr>
<tr>
<td></td>
<td>004</td>
</tr>
<tr>
<td></td>
<td>700, 703, 705</td>
</tr>
<tr>
<td></td>
<td>291</td>
</tr>
<tr>
<td></td>
<td>1205</td>
</tr>
<tr>
<td></td>
<td>1209</td>
</tr>
<tr>
<td></td>
<td>1206, 1207</td>
</tr>
<tr>
<td></td>
<td>1210</td>
</tr>
</tbody>
</table>

Case No. 004B

In a Paper Recycling Plant, an AESSEAL® 91mm SAI™/USL™ seal was fitted to a Herman Finckh Screen, which is a rotating vertical Screen. This extracts the sand and grit particles from the paper pulp and rotates at 1,500 rpm. The input pressure is 2.5 bar gauge and the outlet pressure is 1.8 bar gauge. Previously, the bearing cartridge in the middle of the assembly was sealed with packing. This got embedded with the sand and grit, and rapidly became ripped and leaked into the bearings. The unit had to be adjusted on a weekly basis, which involved an almost complete strip-down.

The Carbon/Chrome Oxide seal combination, with Viton® ‘O’ rings was fitted in December 1987 and lasted 18 months.

See drawing number 6447977A for a general arrangement of the equipment modifications.

Case No. 221C

In a Paper Mill, an AESSEAL® 60mm cartridge seal with solid Tungsten Carbide faces and Viton® ‘O’ rings was installed in a Black and Clawson Omega Screen. The Screen rotates at 980 rpm. and removes clumps of undigested paper and other foreign matter from the paper stock. The paper stock is at 30º C and below 10 bar pressure. The Screen was fitted with a single spring type seal which proved difficult to install due to the screw clamp arrangement for tightening the stationary onto the rotating element of the machine. Many breakages were experienced.

The AESSEAL® seal installed was a machined gland CURCTM where the seal elements are mounted into the unit in a reverse direction.

This IASC™ was installed in August 1990 and is working well.

Due to the seal design, a new plain shaft and seal ‘pedestal’ as per the AESSEAL® drawing were required.
Case No. 224C
In a Paper Mill, AESSEAL® 95mm SAI™/USL™ seals with Solid Tungsten Carbide faces and Viton® 'O' rings were installed into Ahlstrom Karhula Bird Centriscreens. The Screens rotate at 1,477 rpm and screen the stock from the top fan pumps prior to it reaching the machine. The stock is at 2% and 50°C and a pressure of 15psi.

The Screens were previously sealed using Lip Seals which gave very poor service life due to the abrasive nature of the product, and which allowed the stock into the bearing assembly.

The AESSEAL® SAI™/USL™ seals were installed in October 1990 and are working satisfactorily.

The USL™ body is O-ring mounted and has a pin anti-rotation device.

Case No. 273C
In a Paper Mill, AESSEAL® 5 1/2" SAI™'s and 'O' ring mounted stationaries with Carbon/Chrome Oxide faces and Viton® 'O' rings were installed in an Ahlstrom Karhula Bird Centriscreen. The unit rotates at 16.7 revs/second and removes clumps of paper from the stock prior to it entering the machine. The product is at 40°C and 60 m/h pressure. Previously the Screen was sealed using an expensive multi-sprung seal which gave a six month maximum seal life.

The AESSEAL® units were installed in January 1990 and are working leak-free.

Case No. 291C
In a Paper Mill, AESSEAL® 125mm CDSA™ seals with Solid Tungsten Carbide inboard faces and Viton® 'O' rings were installed in Voith Turbo Separators AJS31. The shafts rotate at 450 rpm. and are used to clean recycled raw paper stock. The product is at 30°C, 2 bar gauge pressure and includes staples and bailing wire. The pumps were previously packed using a Kevlar material. This required repacking every two weeks and caused extreme sleeve wear and product ingress to the bearings. The bearings required changing every three to six months.

The AESSEAL® CDSA™ seals, with water barrier fluid at 2.5 bar supplied by an AESSEAL® SSE10 vessel, were installed in April 1991 and are still operating leak-free.

See drawing number 6449158 for seal design and installation.

Case No. 397E
In a Paper Mill, an AESSEAL® 2 1/8" IASC™ seal with Solid Tungsten Carbide faces and EPR O-rings was installed in a Black and Clawson P30 Selectifier Pressure Screen. The unit rotates at 900 rpm and removes clumps of paper fibres from 3%-5% stock. The product is at 30°C and 3 bar gauge pressure. The unit was previously sealed with the manufacturer’s seals which were difficult to install and only gave a six month average life.

The AESSEAL® IASC™ seal was installed in July 1991 and is still operating leak-free.

Seal type is Z784.

Case No. 700G
In February 1998, AESSEAL® supplied and installed two 4.125" IADC™, TC/TC/TC/CAR double seals with Aflas® elastomers for a PSV 400"B" Hooper Pressure Screen application, in a Paper Mill in the USA.

An adapter plate was designed to fit directly onto the Screen vessel, so that the seal could be bolted from the bearing side.

The seal primarily seals Screened paper stock, at an ambient temperature and a pressure of 80 psi (5.5 bar). The seals were installed and have no reported problems to date. See Z4422 for the seal, and Z4596 for the adapter plate, and AESSEAL® drawing G.A. number 6462849 for further details.

Case No. 703G
In December 1997, AESSEAL® supplied and duly installed two 4.125" IADC™, TC/TC/TC/CAR double seals with Aflas® elastomers for a PSV 2600 Hooper Pressure Screen application, in a Paper Mill in the USA.

An adapter plate was designed to fit directly onto the Screen vessel, so that the seal could be bolted from the bearing side.

The seal primarily seals Screened paper stock, at an ambient temperature and a pressure of 80 psi (5.5 bar). The seals were installed and have no reported problems to date. See Z4422 for the Seal, and Z4423 for the adapter plate, and AESSEAL® drawing G.A. number 6462045 for further details.

In February 1998, the plant ordered 3 more identical seal units for a Hooper pressure Screen model PSV 400, see case histories 700 and 705.
Case No. 705G
In February 1998, AESSEAL® supplied and installed one 4.125” IADC™, TC/TC/TC/Car double seal with Aflas® elastomers for a PSV 400°C” Hooper Pressure Screen application, in a Paper Mill in the USA.

An adapter plate was designed to fit directly onto the Screen vessel, so that the seal could be bolted from the bearing side.

The seal primarily seals Screened paper stock, at an ambient temperature and a pressure of 80 psi (5.5 bar). The seals were installed and have no reported problems to date. See Z4422 for the seal, and Z4597 for the adapter plate, and AESSEAL® drawing G.A. number 6462850 for further details.

Case No. 706G
In September 1997, AESSEAL® supplied and installed one 4.724” (120mm) Bird Screen, TC/TC single seal with Aflas® elastomers for a Bird Centriscreen model 80, in a Paper Mill in the USA.

The seal replaced a Sealol 676 (special) unit, and primarily Screened paper stock at an ambient temperature (mill water) and a pressure of 80 psi (5.5 bar). The seals were installed and have no reported problems to date. See Z4267 for the Seal, and AESSEAL® drawing G.A. number 6461080 for further details.

Case No. 716G
In July 1991, a Paper Mill in Northumberland, England was fitted with 2.125” IASC™ single seals installed on Black & Clawson 30P Screens. In October 1997 one was changed due to machine repair (not seal failure). A new seal was installed and all units are running (to date). Reference Z784.

Case No. 722G
In a Recycling Mill in the South of England, several IASC™ Screen seals were fitted on BLACK & CLAWSON PS 36 Screens. The seals supplied by AESSEAL® replaced Ropac R32 Slurry stationary seals, and were installed in November 1993. One failed in July 1997. This was replaced and all are still running, since November 1997.

Case No. 723G
In a Recycling Mill in the South of England, 6 off SAT™’s and CURCTM Stationaries have been installed on BIRD Screens. Slight modifications were made to the machine in November 1993, when AESSEAL® replaced the OEM Garlock Clipper seal. Since November 1997 no failures have been reported.

Case History 1205H
In April 1998, a double mechanical cartridge seal with pumping scroll was fitted to a Valmet TP100 Screen on the secondary broke stage in a recycling fibre plant in the UK.

With growing environmental concerns and plant focus on water usage, AESSEAL® elected to install a “pumping” mechanical seal with SSE25 (25 UK litres, 6.6 US gallons) Jumbo pot.

Operating pressures were around 2 to 4 bar, (29-58 psi) depending on whether or not the basket was blocked or Jet washed. The seal lasted 12 months and was replaced in April 1999 with an improved design, which could maintain higher product to barrier fluid differentials.

The current seal is installed on the same SSE25 pot, and runs around 48°C (119°F), and 1200 rpm.

The seal is currently installed and working without any problems.

For further information, see Z Reference 4658, and AESSEAL® general arrangement 6463079.

Case History 1206H
In 1998, a 100mm MDC™ double mechanical cartridge seal was fitted to a Sunds Jyla 150 Screen in a plant in Sweden.

The seal is currently installed and working (for 81 weeks to date) without any problems.

For further information, see Z Reference 3615 and AESSEAL® general arrangement 6458574.

Case History 1207H
In 1996, a 75mm MDC™ double mechanical cartridge seal was fitted to a Sunds Jyla 100 Screen in a plant in Sweden.

The seal is currently installed and working (for 163 weeks to date) without any problems.

For further information, see Z Reference 3840 and AESSEAL® general arrangement 6459736.
Case History 1208H
In December 1999, a double mechanical cartridge seal (IADC™) was designed and dispatched to be fitted to a Bird Screen Model 400 for a pulp & paper plant in the USA.

The seal was fitted on a Black Liquor process with operating temperatures of around 180°F (82°C).

For further information, see Z Reference Z5755 and AESSEAL® general arrangement 6469586.

Case History 1209H
In August 1998, a double mechanical cartridge seal (IADC) was designed and fitted to a Valmet Tampella Screen for a Pulp & Paper plant in the USA.

The 120mm seal replaced a Safematic SAF-120-QREG-303373, and was supplied with TC/TC/TC/Car seal faces and Aflas elastomers.

For further information, see Z Reference Z4840, and AESSEAL® general arrangement 6464264.

Case History 1210H
In a Paper Mill in the USA, 7 off AESSEAL® 85mm IADC's TC/TC/TC/CB with Aflas 'O' rings were installed on a Beloit model 210 Hi-Q Fine Screens. These seals were installed on a mill outage as part of a project upgrade to the Screens. Installations occurred on August 29th 1998 and are still operational to date. The purchase cost savings were $2000 compared to the competitor seals previously installed.

The seal water line was installed using an inverted P-Trap configuration and the seals did not fail when the mill lost its entire mill water supply due to a broken water line soon after start-up.

The inverted P-trap water supply maintained enough water to provide an adequate fluid film to the seal in spite of the fact that there was no mill water for a period of time.

For further information, see Z Reference 4855 and AESSEAL® general arrangement 6464344.

NOTE:
Due to AESSEAL's policy of continuous improvement the following seal types have been upgraded:-

SCI upgraded to SCUSI
CSAI upgraded to CURC
CAPI upgraded to CURC
CAPO upgraded to CRCO
CMD5 upgraded to CDSA
CMD5 upgraded to CDSA & DMSF

The original products evolved into more modern seals which were designed to enhance application performance. The product model reference in the case study is the most modern design, even if at the time of installation the actual installation was the predecessor model.

All information featured in these case histories has been obtained directly from Plant Engineers.

Although we have confidence in the accuracy of this information, it is not offered as a guarantee for seals manufactured by AESSEAL®

Any prospective user of our product should verify the information stated to their own satisfaction.

Further information is available on all the case histories contained in this booklet upon request.

Issue ‘A’ on a case history refers to information which was current on the 31st. January, 1989.

Issue ‘B’ refers to information which was current on 31st. January, 1990.

Issue ‘C’ refers to information which was current on 31st. January, 1991.

Issue ‘D’ refers to information which was current on 31st. January, 1992.

Issue ‘E’ refers to information which was current on 31st. January, 1993.

Issue ‘F’ refers to information which was current on 31st. January, 1995.

Issue ‘G’ refers to information which was current on 31st. January, 1998.

Issue ‘H’ refers to information which was current on 31st. October, 1999.

Issue ‘I’ refers to information which was current on 31st. March, 2000.

Issue ‘J’ refers to information which was current on 31st. November, 2000.

Where the statement 'the seals are still working' is made, this means that the customer is or was still using AESSEAL® mechanical seals at the time the case history was updated: as denoted by either Issue ‘A’, Issue ‘B’, Issue ‘C’, Issue ‘D’, Issue ‘E’, Issue ‘F’, Issue ‘G’, Issue ‘H’, Issue ‘I’ or Issue ‘J’.

For more detailed information, please contact our Applications Department.
THE AESSEAL® GROUP OF COMPANIES

AESSEAL plc, Rotherham, U.K. 
Telephone: +44 (0) 1709 369966

AESSEAL plc, Derby, U.K. 
Telephone: +44 (0) 1332 366738

AESSEAL plc, Peterborough, U.K. 
Telephone: +44 (0) 1733 230787

AESSEAL plc, Scotland, U.K. 
Telephone: +44 (0) 1696 540422

AESSEAL plc, Middlesbrough, U.K. 
Telephone: +44 (0) 1642 245744

AESSEAL plc, Essex, U.K. 
Telephone: +44 (0) 1708 256600

AESSEAL plc, Pontypool, U.K. 
Telephone: +44 (0) 1443 844330

AESSEAL (MCK) Ltd., Lisburn, U.K. 
Telephone: +44 (0) 28 9266 9966

AESSEAL (MCK) Ltd., Co. Cork, Ireland. 
Telephone: +353 (0) 21 463477

AESSEAL Inc., Knoxville, Tennessee, USA. 
Telephone: +1 865 531 0192

AESSEAL Inc., Seneca Falls, New York, USA. 
Telephone: +1 315 568 4706

AESSEAL Inc., Kingsport, Tennessee, USA. 
Telephone: +1 423 224 7573

AESSEAL ESP LLC, Cedar Rapids, Iowa, USA. 
Telephone: +1 319 393 4310

AESSEAL Deutschland AG, Rödermark, Germany.
Telephone: +49 (0) 6074 881293

AESSEAL Italia SRL, Gallarate, Italy.
Telephone: +39 039 179 9952

AESSEAL Pty Ltd., Gauteng, South Africa.
Telephone: +27 (0) 11 466 6500

AESSEAL Pty Ltd., Conflud Branch, Amanzimtoti, South Africa.
Telephone: +27 (0) 31 903 5438

AESSEAL Malaysia SDN. BHD., Selangor, Malaysia.
Telephone: +603 8062 1233

AESSEAL Benelux B.V., Breda, Holland.
Telephone: +31 (0) 76 564 9292

AESSEAL Ibérica S.L., Tarragona, Spain.
Telephone: +34 977 55 43 30

AESSEAL Danmark, Koge, Denmark.
Telephone: +45 56 44 14 00

AESSEAL France S.A.R.L., Nieppe, France.
Telephone: +33 (0) 3 2017 2850

AESSEAL Turkiye, Istanbul, Turkey.
Telephone: +90 (0) 212 659 70 91

AESSEAL Canada Inc., Thunder Bay, Ontario, Canada.
Telephone: +1 807 624 2727

AESSEAL China Ltd., Ningbo, China.
Telephone: +86 (0) 574 8823 2888

AESSEAL Mexico, S. de R.L. de C.V., Tampico, Mexico.
Telephone: (52 833) 214 6983

AESSEAL Brasil Ltda. Sao Paulo, Brazil.
Telephone: +55 11 5891 5878

AESSEAL India Pvt. Ltd. Pune, India.
Telephone: +91 20 6872254

AESSEAL Argentina S.A., Buenos Aires, Argentina.
Telephone: +54 11 4744 0022

Registerd Trademarks: AESSEAL® - AESSEAL plc
Viton®, Kalrez® - DuPont Dow Elastomers
Aflas® - Asahi Glass Co.

THIS DOCUMENT IS DESIGNED TO PROVIDE DIMENSIONAL INFORMATION AND AN INDICATION OF AVAILABILITY.
FOR FURTHER INFORMATION AND SAFE OPERATING LIMITS CONTACT OUR TECHNICAL SPECIALISTS AT THE LOCATIONS BELOW.

USE DOUBLE MECHANICAL SEALS WITH HAZARDOUS PRODUCTS.
ALWAYS TAKE SAFETY PRECAUTIONS
• GUARD YOUR EQUIPMENT
• WEAR PROTECTIVE CLOTHING

USEFUL CONTACT INFORMATION

AESSEAL plc, Rotherham, U.K. Telephone: +44 (0) 1709 369966
AESSEAL plc, Derby, U.K. Telephone: +44 (0) 1332 366738
AESSEAL plc, Peterborough, U.K. Telephone: +44 (0) 1733 230787
AESSEAL plc, Scotland, U.K. Telephone: +44 (0) 1696 540422
AESSEAL plc, Middlesbrough, U.K. Telephone: +44 (0) 1642 245744
AESSEAL plc, Essex, U.K. Telephone: +44 (0) 1708 256600
AESSEAL plc, Pontypool, U.K. Telephone: +44 (0) 1443 844330
AESSEAL (MCK) Ltd., Lisburn, U.K. Telephone: +44 (0) 28 9266 9966
AESSEAL (MCK) Ltd., Co. Cork, Ireland. Telephone: +353 (0) 21 463477
AESSEAL Inc., Knoxville, Tennessee, USA. Telephone: +1 865 531 0192
AESSEAL Inc., Seneca Falls, New York, USA. Telephone: +1 315 568 4706
AESSEAL Inc., Kingsport, Tennessee, USA. Telephone: +1 423 224 7573
AESSEAL ESP LLC, Cedar Rapids, Iowa, USA. Telephone: +1 319 393 4310
AESSEAL Deutschland AG, Rödermark, Germany. Telephone: +49 (0) 6074 881293
AESSEAL Italia SRL, Gallarate, Italy. Telephone: +39 039 179 9952
AESSEAL Pty Ltd., Gauteng, South Africa. Telephone: +27 (0) 11 466 6500
AESSEAL Pty Ltd., Conflud Branch, Amanzimtoti, South Africa. Telephone: +27 (0) 31 903 5438
AESSEAL Malaysia SDN. BHD., Selangor, Malaysia. Telephone: +603 8062 1233
AESSEAL Benelux B.V., Breda, Holland. Telephone: +31 (0) 76 564 9292
AESSEAL Ibérica S.L., Tarragona, Spain. Telephone: +34 977 55 43 30
AESSEAL Danmark, Koge, Denmark. Telephone: +45 56 44 14 00
AESSEAL France S.A.R.L., Nieppe, France. Telephone: +33 (0) 3 2017 2850
AESSEAL Turkiye, Istanbul, Turkey. Telephone: +90 (0) 212 659 70 91
AESSEAL Canada Inc., Thunder Bay, Ontario, Canada. Telephone: +1 807 624 2727
AESSEAL China Ltd., Ningbo, China. Telephone: +86 (0) 574 8823 2888
AESSEAL Mexico, S. de R.L. de C.V., Tampico, Mexico. Telephone: (52 833) 214 6983
AESSEAL Brasil Ltda. Sao Paulo, Brazil. Telephone: +55 11 5891 5878
AESSEAL India Pvt. Ltd. Pune, India. Telephone: + 91 20 6872254
AESSEAL Argentina S.A., Buenos Aires, Argentina. Telephone: +54 11 4744 0022