This Application Note applies to many Sea-Bird instruments with Druck pressure sensors, for moored applications or other long deployments that meet either of the following conditions:
- used in a high-sediment (muddy) environment, in a pressure sensor end up orientation
- used in a biologically productive environment, in any orientation

At Sea-Bird, a pressure port plug with a small (0.042-inch diameter) vent hole in the center is inserted in the pressure sensor port. The vent hole allows hydrostatic pressure to be transmitted to the pressure sensor inside the instrument.

- If the instrument is deployed in a high-sediment (muddy) environment with the pressure sensor end up, the pressure port may partially fill with sediment (through the vent hole) over time, causing a delay in the pressure response.
- If the instrument is deployed in a biologically productive environment, the vent hole may be covered with biological growth over time, causing a delay in the pressure response, or in extreme cases completely blocking the pressure signal.

**High-Head Pressure Port Plug Description and Applicability**

Sea-Bird developed a high-head pressure port plug, Part Number 233186, for deployment in muddy and/or biologically productive environments. The high-head plug extends beyond the surface of the instrument end cap, and has four horizontal vent holes connecting internally to a vertical vent hole.

- The horizontal orientation of the external holes prevents the deposit of sediment inside the pressure port.
- Each of the four vent holes is larger (0.062-inch vs. 0.042-inch diameter) than the single vent hole in the standard pressure port plug, significantly reducing the possibility that biological growth will cover all of the hole(s).

**Note:** The high-head pressure port plug cannot be used with:
- Pumped MicroCATs with version 4.0 firmware or later (SBE 37-SMP, SIP, IMP); version 4.0 firmware for these models was released in 2011.
- Any IDO or ODO MicroCAT (SBE 37-SMP-IDO, SMP-ODO, SIP-IDO, SIP-ODO, IMP-IDO, IMP-ODO). The pressure port is located under the clamp in these instruments, preventing installation of the high-head plug.

**High-Head Pressure Port Plug Installation**

1. Unscrew the standard pressure port plug from the pressure port.
2. Rinse the pressure port with warm, de-ionized water to remove any particles, debris, etc. Do not put a brush or any object in the pressure port; doing so may damage or break the pressure sensor.
3. Install the high-head pressure port plug in the pressure port.

**Note:** Until the early 2000’s, Sea-Bird filled the pressure port with silicon oil at the factory. For Druck pressure sensors, we determined that this was unnecessary, and no longer do so. It is not necessary to refill the oil in the field. However, for Paine or Paroscientific Digiquartz pressure sensors, the pressure port does need to be refilled with silicon oil. Contact Sea-Bird with your instrument’s serial number if you are unsure of the pressure sensor type.
Application Note Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tr>
<td>July 2006</td>
<td>Initial release.</td>
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<tr>
<td>January 2014</td>
<td>Clarify that not applicable to newer pumped MicroCATs, plus all IDO and ODO MicroCATs, because pressure sensor is under the clamp.</td>
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