



Sea-Bird Electronics, Inc.
 13431 NE 20th Street
 Bellevue, WA 98005
 USA

Phone: (425) 643-9866
 Fax: (425) 643-9954
 E-mail: seabird@seabird.com
 Web: www.seabird.com

Field Service Bulletin No. 15

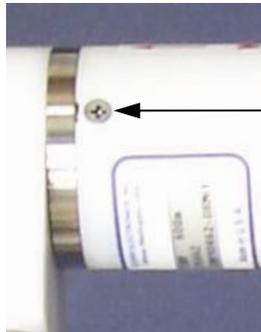
Revised August 2008

**Alert and Handling Precautions -
 SBE 37 MicroCATs and SBE 49 FastCATs with Plastic Housing Option**

Equipment Affected

All MicroCATs (SBE 37-SM, -SMP, -IM, -IMP, -SI, and -SIP) and all SBE 49 FastCATs with the optional 250-meter plastic housing.

ALERT

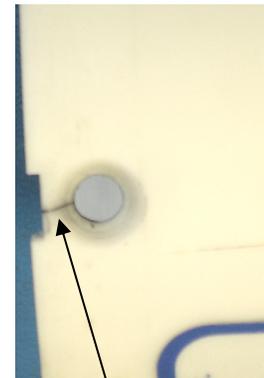


Screw securing battery end cap (1 each side)

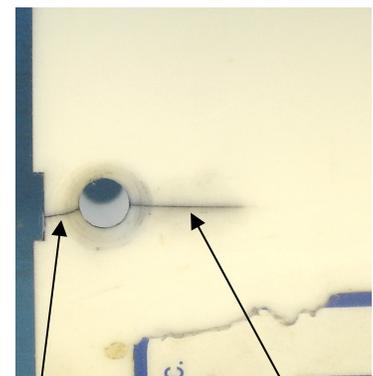
Prior to deployment / redeployment, inspect all MicroCATs (with plastic housings) for cracks around the two screw holes that retain the battery end cap (SBE 37-SM, -SMP, -IM, and -IMP). To check for cracking, use a magic marker and color the housing liberally around the two screw holes in the housing. When both holes have been marked, use a cloth or paper towel dipped in isopropyl alcohol to wipe the marker off of the housing's surface. If there are cracks in the housing, the marker will have wicked into the cracks, and the cracks will become visible.

**Detail -- Battery end cap
 SBE 37-SM, 37-SMP, 37-IM, 37-IMP**

- If the ink test reveals cracking of the housing only on the **battery end cap side of the screw hole**, the MicroCAT may be deployed / redeployed as required. However, carefully adhere to the **torque specification of 15 in-lbs for the battery end cap retaining screws**. Return the MicroCAT to Sea-Bird at your earliest convenience for installation of a new housing under our standard warranty policy.
- Over-torquing the screws can cause cracking on the **electronics side of the screw hole (away from the end cap)**; this can create a leak path past the O-rings. If the ink test reveals cracking of the housing on the **electronics side of the screw hole, do not deploy/redeploy the MicroCAT, as there is a high probability of flooding** of the MicroCAT. Return the MicroCAT to Sea-Bird for installation of a new housing under our standard warranty policy.



Example crack, **battery end cap side only** (ink applied to crack to illustrate)



Example cracks **battery end cap side and electronics side** (ink applied to cracks to illustrate)

Background information, handling precautions, and a summary of Sea-Bird's correction action for all plastic MicroCAT and FastCAT housings are provided on the following pages.

Description of Problem and Solution

The substitution of a 250-meter plastic housing for the standard 7000-meter titanium housing saves money and weight. However, more care and caution in handling is required with the plastic housing, when compared to the standard titanium housing. A few MicroCAT housings have been returned to Sea-Bird with cracks around battery end cap screw holes, as shown above.

Handling Precautions

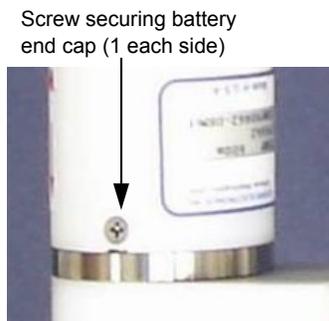
- The **SBE 37-SM, -SMP, -IM, and -IMP battery end cap** is retained by two screws through the side of the housing. Particularly in a cold environment, where plastic is more brittle, the potential for developing a crack around the screw hole(s) is greater for the plastic housing than for the titanium housing. Observe the following precautions –
 - When removing the end cap (to replace batteries and/or access electronics), avoid any impact in this area of the housing.
 - When reinstalling the end cap, do not use excess torque on the screws. Sea-Bird recommends tightening the screws to **15 inch-lbs**. Alternatively, tighten finger-tight, and then turn each screw an additional 45 degrees.

If you remove the screws securing the conductivity cell guard to the housing (not typically done by the customer), follow the same precautions as described above for removing and replacing the battery end cap.



SBE 37-SM
(37-SMP similar)

See detail
at right



Detail - Battery end cap
SBE 37-SM, 37-SMP,
37-IM, 37-IMP

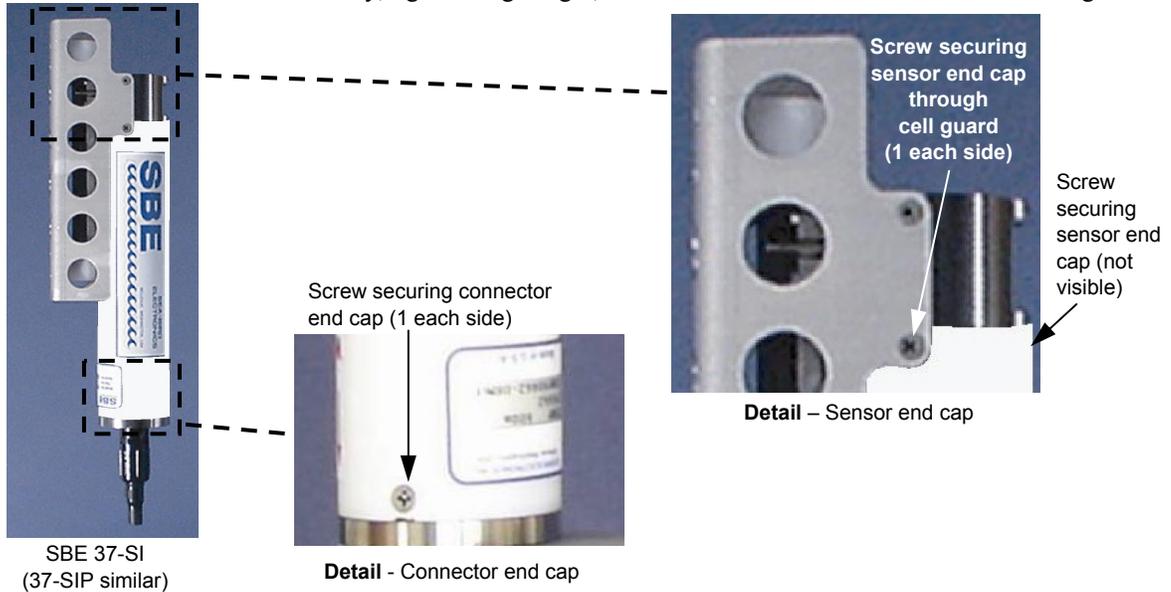


SBE 37-IM
(37-IMP similar)

See detail
at left

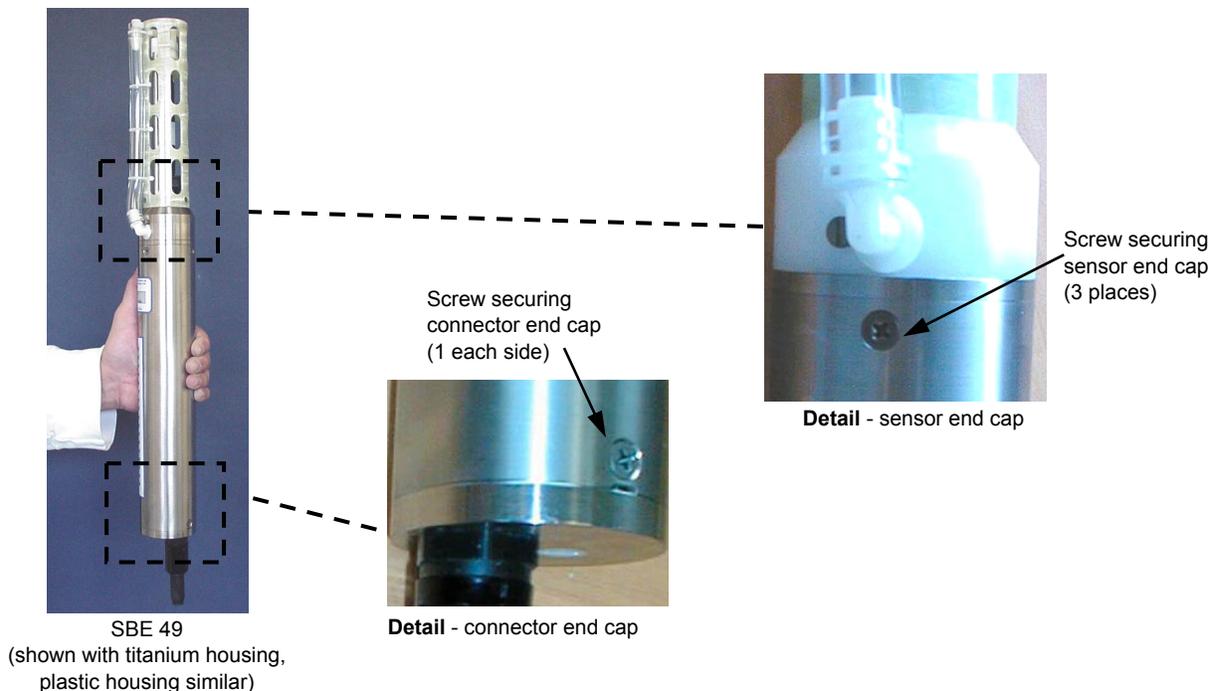
- The **SBE 37-SI and -SIP connector and sensor end caps** are retained by screws through the side of the housing (the conductivity cell guard is also secured to the sensor end cap). The screw holes are close to the end of the housing. Particularly in a cold environment, where plastic is more brittle, the potential for developing a crack around the screw hole(s) is greater for the plastic housing than for the titanium housing. Observe the following precautions –

- When removing end caps (to access electronics), avoid any impact in this area of the housing.
- When reinstalling end caps, do not use excess torque on the screws. Sea-Bird recommends tightening the screws to **15 inch-lbs**. Alternatively, tighten finger-tight, and then turn each screw an additional 45 degrees.



- The **SBE 49 connector and sensor end caps** are retained by screws through the side of the housing. The screw holes are close to the end of the housing. Particularly in a cold environment, where plastic is more brittle, the potential for developing a crack around the screw hole(s) is greater for the plastic housing than for the titanium housing. Observe the following precautions –

- When removing end caps (to access electronics), avoid any impact in this area of the housing.
- When reinstalling end caps, do not use excess torque on the screws. Sea-Bird recommends tightening the screws to **15 inch-lbs**. Alternatively, tighten finger-tight, and then turn each screw an additional 45 degrees.



- **General** - A plastic housing is more susceptible to scratches than a titanium housing. Do not use screwdrivers or other metal tools to pry off the end cap(s).
 - Of primary concern are scratches on O-ring mating and sealing surfaces. Use extra care to avoid a scraping contact with these surfaces when replacing batteries and/or re-seating the end cap(s).
 - Take care to keep O-ring lubricated surfaces clean – avoid trapping any sand or fine grit that can scratch the critical sealing surfaces. If the O-ring lubricant does accumulate any material or grit that can cause a leak or make a scratch, it must be carefully cleaned and replaced with fresh, clean lubricant (Parker Super O Lube).
 - Shallow, external scratches are cosmetic only, and will not affect the performance of the instrument. However, deep external scratches can become points of weakness for deep deployments or fracture from impact during very cold weather.

See the applicable instrument manual for detailed step-by-step procedures for removing the instrument's end cap(s).

Corrective Action by Sea-Bird

Sea-Bird plans to modify the existing end cap screw holes and screws in **all** plastic MicroCAT and FastCAT housings, to reduce the potential for cracks caused by over-torquing. Sea-Bird will perform these modifications at no charge, under normal warranty conditions.

Summarizing:

- If you observe a **crack on the electronics side** of the battery end cap screw hole, **do not deploy / redeploy** the instrument. Return the instrument to Sea-Bird for installation of a **new housing** under warranty.
- If you observe a **crack only on the end cap side** of the battery end cap screw hole, you can continue to deploy the instrument, but carefully follow the torque specification. We recommend that you return the instrument to Sea-Bird for installation of a **new housing** under warranty, **when convenient** (i.e., when sending it in for calibration or other repairs).
- If you observe **no cracks**, you can continue to deploy the instrument, but carefully follow the torque specification. We recommend that you return the instrument to Sea-Bird for **modification of the end cap screw holes and hardware** under warranty, **when convenient** (i.e., when sending it in for calibration or other repairs).

Please contact Sea-Bird for an RMA number before sending the instrument.