



Sea-Bird Electronics, Inc.
 1808 136th Place NE
 Bellevue, WA 98005
 USA

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

APPLICATION NOTE NO. 57

Revised May 2003

I/O Connector Care and Installation

This Application Note describes the proper care and installation of standard I/O connectors for Sea-Bird CTD instruments. Once properly installed, the connections require minimal care. Unless access to the bulkhead is required, the connections can be left in place indefinitely.

The Application Note is divided into three sections:

- Connector Cleaning and Installation
- Locking Sleeve Installation
- Cold Weather Tips

Connector Cleaning and Installation

1. Carefully clean the bulkhead connector and the inside of the mating inline (cable end) connector with a Kimwipe. Remove all grease, hair, dirt, and other contamination.



Clean bulkhead connector



Clean inside of connector

2. Inspect the connectors:
 - A. Inspect the pins on the bulkhead connector for signs of corrosion. The pins should be bright and shiny, with no discoloration. If the pins are discolored or corroded, clean with alcohol and a Q-tip.
 - B. Inspect the bulkhead connector for chips, cracks, or other flaws that may compromise the seal.
 - C. Inspect the inline connector for cuts, nicks, breaks, or other problems that may compromise the seal.

Replace severely corroded or otherwise damaged connectors - contact SBE for instructions or a Return Authorization Number (RMA number).



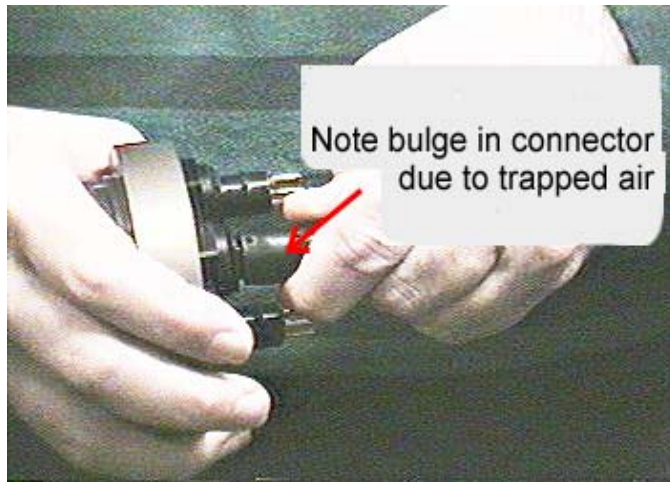
Corroded pins on bulkhead connectors - Connector on right has a missing pin

- Using a tube of 100% silicone grease (Dow DC-4 or equivalent), squeeze approximately half the size of a pea onto the end of your finger.

CAUTION:

Do not use WD-40 or other petroleum-based lubricants, as they will damage the connectors.

- Apply a light, even coating of grease to the molded ridge around the base of the bulkhead connector. The ridge looks like an o-ring molded into the bulkhead connector base and fits into the groove of the mating inline connector.

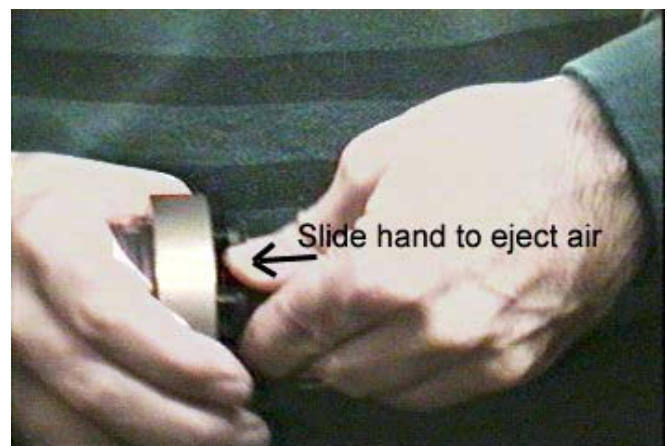


- Mate the inline connector to the bulkhead, being careful to align the pins with the sockets. Do not twist the inline connector on the bulkhead connector. Twisting can lead to bent pins, which will soon break.
- Push the connector all the way onto the bulkhead. There may be an audible pop, which is good. With some newer cables, or in cold weather, there may not be an initial audible pop.

- After the cable is mated, run your fingers along the inline connector toward the bulkhead, *milking* any trapped air out of the connector. You should hear the air being ejected.

CAUTION:

Failure to eject the trapped air will result in the connector leaking.



Locking Sleeve Installation

After the connectors are mated, install the locking sleeve. The locking sleeve secures the inline connector to the bulkhead connector and prevents the cable from being inadvertently removed.

Important points regarding locking sleeves:

- Tighten the locking sleeve by hand. **Do not** use a wrench or pliers to tighten the locking sleeve. Overtightening will gall the threads, which can bind the locking sleeve to the bulkhead connector. Attempting to remove a tightly bound locking sleeve may instead result in the bulkhead connector actually unthreading from the end cap. A loose bulkhead connector will lead to a flooded instrument. **Pay particular attention when removing a locking sleeve to ensure the bulkhead connector is not loosened.**
- It is a common misconception that the locking sleeve provides watertight integrity. **It does not, and continued re-tightening of the locking sleeve will not *fix* a leaking connector.**
- As part of routine maintenance at the end of every cruise, remove the locking sleeve, slide it up the cable, and rinse the connection (still mated) with fresh water. This will prevent premature cable failure.



Locking Sleeve

Cold Weather Tips

In cold weather, the connector may be hard to install and remove.

Removing a *frozen* inline connector:

1. Wrap the connector with a washrag or other cloth.
2. Pour hot water on the cloth and let the connector sit for a minute or two. The connector should thaw and become flexible enough to be removed.

Installing an inline connector:

When possible, mate connectors in warm environments before the cruise and leave them connected. If not, warm the connector sufficiently so it is flexible. A flexible connector will install properly.

By following these procedures, you will have many years of reliable service from your cables!