

## **Altitude Digitizer Leaks in Excess of 100'/min.**

Trans-Cal tests every SSD120-(XX)N-(XXXX) prior to shipment. The assembly process, then test and calibration, precludes the possibility of a leak internal to the digitizer on new units.

The 1/8-27NPT thread on the static port is verified with a calibrated L-1 thread gage.

100% of the units returned to TCI for leak issues have been determined to leak due to one of three causes:

1. **Inadequate Thread Sealant** - The static port on all TCI altitude digitizers uses an 1/8-27NPT thread. The National Pipe Thread Standard (NPT) threads require the use of a sealant to fill the gaps between the mating threads to make an air-tight seal. RTV Silicone or Teflon tape are the typical sealants used. The TCI recommended thread sealant is **Loctite RTV Clear Silicone Sealant (59530)**. This sealant was used during all environmental testing at Trans-Cal and has proven to be durable in condition extremes that exceed the vast majority of field applications. (Reference ANSI/ASME B1.20.1-1983 (R2001) for the NPT specification.)
2. **Cross Threaded Mating Fittings** – Cross threading occurs when the threads of the mating fitting do not mesh with the threads of the digitizer static port. Usually due to a misalignment of the mating parts, this misalignment can damage the static port threads.

To prevent cross threading:

- a. Bring the mating fitting into contact with the digitizer static port. Align so that the centerline of the fitting is roughly on the centerline of the digitizer static port.
  - b. Rotate the fitting counterclockwise  by hand until a click is heard. That click indicates the start of the fitting thread is at the start of the static line connector thread.
  - c. Then rotate the fitting clockwise  by hand until finger tight.
  - d. Finish tightening the fitting using a double wrench technique. Included in the standards for NPT threads is an engagement length. Unfortunately, there is wide variation in the quality of the mating fitting threads and materials can range from nylon to brass and aluminum. While TCI static port threads are gaged against a calibrated standard, the quality of the mating NPT fitting threads is beyond our control. These variations make it impossible to standardize a torque or engagement specification. As a general guideline, you should have between 3.5 and 6 engaged NPT threads to insure an adequate seal.
3. **Neglecting to Plug the Unused Static Port** – The SSD120-(XX)N-(XXXX) incorporates two static port inlets. If one port is unused it must be plugged. Use the plug included with the digitizer or an equal part. This plug must be sealed using a sealant as described in item 1 above.