DEPTH CALIBRATION PROCEDURE

Revision 1
KCM - 5/15/09

BEFORE YOU BEGIN: Make sure that the barometric pressure that you are using to calibrate the sonde is local and accurate. Do not use your local airport weather station to gather barometric pressure. Use a traceable barometer if possible.

SETUP & OPERATION

- Confirm that the barometric pressure is local and accurate
- If you have covered the sonde with a protective layer (i.e. saran wrap) for fouling, make sure that the depth vent is clear and open. If not, remove the layer and re-establish, being careful not to cover the depth vent.
- Check to see if the depth vent openings are clear of debris. If not, run a pipe cleaner through the port and rinse the port with fresh water.

CALIBRATION/POST CHECK PROCESS - *Barometric Pressure Offset*

1. The initial calibration is performed by using the local barometric pressure to determine what pressure offset needs to be entered into the instrument
2. Calibrating depth should be done in air with the instrument oriented the same way that it will be deployed in the field (horizontally or vertically)
3. Use the Offset Table to determine what the barometric pressure offset is in meters or feet.
    a. *Example*: If the barometric pressure is 757 mm Hg, the number that you will enter to calibrate will be -0.041 m
4. Once the offset has been determined, enter that number to calibrate the depth
5. When you recover the instrument from the field, perform a post check
6. Make sure to orient the instrument in the same way it was calibrated and deployed in the field
7. Determine the local barometric pressure
8. Verify the pressure offset using the Offset Table and confirm that the instrument is reading within the specified tolerance
    a. *Example:* If local barometric pressure is 762 mm Hg, the instrument should be reading 0.027 +/-0.018m taking into consideration the non-vented, shallow depth sonde tolerance
    b. *Example:* If the instrument is reading -0.089 m, the barometric pressure reading should be 752 mm Hg (offset = -0.109 +/- 0.018m)
9. If the instrument is reading within the tolerance, you are done with the post check and you will not have to re-calibrate the depth on the instrument again
10. If the instrument is not reading correctly, insure that the barometric pressure source is consistent with the source used for your initial calibration and verify that the vent openings to the transducer are not blocked

PRESSURE OFFSET TABLE

NOTE: All readings are +/-0.018 m (0.06 ft) -- non-vented, shallow depth tolerance

Pressure mm Hg	Offset meter	Offset feet	Pressure mm Hg	Offset meter	Offset feet	Pressure mm Hg	Offset meter	Offset feet
680	-1.088	-3.570	**730**	-0.408	-1.339	**780**	0.272	0.892
681	-1.074	-3.524	**731**	-0.394	-1.293	**781**	0.285	0.935
682	-1.060	-3.478	**732**	-0.381	-1.250	**782**	0.299	0.981
683	-1.047	-3.435	**733**	-0.367	-1.204	**783**	0.313	1.027
684	-1.033	-3.389	**734**	-0.353	-1.158	**784**	0.326	1.070
685	-1.020	-3.347	**735**	-0.340	-1.116	**785**	0.340	1.116
686	-1.006	-3.301	**736**	-0.326	-1.070	**786**	0.353	1.158
687	-0.992	-3.255	**737**	-0.313	-1.027	**787**	0.367	1.204
688	-0.979	-3.212	**738**	-0.299	-0.981	**788**	0.381	1.250
689	-0.965	-3.166	**739**	-0.285	-0.935	**789**	0.394	1.293
690	-0.952	-3.124	**740**	-0.272	-0.892	**790**	0.408	1.339
691	-0.938	-3.078	**741**	-0.258	-0.846	**791**	0.421	1.381
692	-0.924	-3.032	**742**	-0.245	-0.804	**792**	0.435	1.427
693	-0.911	-2.989	**743**	-0.231	-0.758	**793**	0.449	1.473
694	-0.897	-2.943	**744**	-0.218	-0.715	**794**	0.462	1.516
695	-0.884	-2.900	**745**	-0.204	-0.669	**795**	0.476	1.562
696	-0.870	-2.854	**746**	-0.190	-0.623	**796**	0.489	1.604
697	-0.856	-2.809	**747**	-0.177	-0.581	**797**	0.503	1.650
698	-0.843	-2.766	**748**	-0.163	-0.535	**798**	0.517	1.696
699	-0.829	-2.720	**749**	-0.150	-0.492	**799**	0.530	1.739
700	-0.816	-2.677	**750**	-0.136	-0.446	**800**	0.544	1.785
701	-0.802	-2.631	**751**	-0.122	-0.400	**801**	0.557	1.828
702	-0.789	-2.589	**752**	-0.109	-0.358	**802**	0.571	1.873
703	-0.775	-2.543	**753**	-0.095	-0.312	**803**	0.585	1.919
704	-0.761	-2.497	**754**	-0.082	-0.269	**804**	0.598	1.962
705	-0.748	-2.454	**755**	-0.068	-0.223	**805**	0.612	2.008
706	-0.734	-2.408	**756**	-0.054	-0.177	**806**	0.625	2.051
707	-0.721	-2.366	**757**	-0.041	-0.135	**807**	0.639	2.097
708	-0.707	-2.320	**758**	-0.027	-0.089	**808**	0.653	2.142
709	-0.693	-2.274	**759**	-0.014	-0.046	**809**	0.666	2.185
710	-0.680	-2.231	**760**	0.000	0.000	**810**	0.680	2.231
711	-0.666	-2.185	**761**	0.014	0.046	**811**	0.693	2.274
712	-0.653	-2.142	**762**	0.027	0.089	**812**	0.707	2.320
713	-0.639	-2.097	**763**	0.041	0.135	**813**	0.721	2.366
714	-0.625	-2.051	**764**	0.054	0.177	**814**	0.734	2.408
715	-0.612	-2.008	**765**	0.068	0.223	**815**	0.748	2.454
716	-0.598	-1.962	**766**	0.082	0.269	**816**	0.761	2.497
717	-0.585	-1.919	**767**	0.095	0.312	**817**	0.775	2.543
718	-0.571	-1.873	**768**	0.109	0.358	**818**	0.789	2.589
719	-0.557	-1.828	**769**	0.122	0.400	**819**	0.802	2.631
720	-0.544	-1.785	**770**	0.136	0.446	**820**	0.816	2.677
721	-0.530	-1.739	**771**	0.150	0.492	**821**	0.829	2.720
722	-0.517	-1.696	**772**	0.163	0.535	**822**	0.843	2.766
723	-0.503	-1.650	**773**	0.177	0.581	**823**	0.856	2.809
724	-0.489	-1.604	**774**	0.190	0.623	**824**	0.870	2.854
725	-0.476	-1.562	**775**	0.204	0.669	**825**	0.884	2.900
726	-0.462	-1.516	**776**	0.218	0.715	**826**	0.897	2.943
727	-0.449	-1.473	**777**	0.231	0.758	**827**	0.911	2.989
728	-0.435	-1.427	**778**	0.245	0.804	**828**	0.924	3.032
729	-0.421	-1.381	**779**	0.258	0.846	**829**	0.938	3.078