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drawing samples with a peristaltic pump;  
 selecting a designated container;  
 moving the distributor arm to the designated container by counting changes in incremental angular movement of the distributor arm until it is over the container wherein an outlet end of the distributor is connected to the distributor arm;  
 causing at least one of said samples to flow into the designated container by rotating the outlet end of the distributor over the designated container and causing the sample to flow through the distributor into the designated container;  
 continually updating the position of the distributor arm in memory;  
 the step of calibrating including the step of rotating the distributor arm against a stop member in a first direction, rotating the distributor arm against the stop member in a second direction, calculating the flexing of the stop member by determining an amount in excess of 360 degrees of motion of the distributor arm; and  
 correcting for the excess motion.

9. A method in accordance with claim 8 in which the step of correcting for the excess motion includes the step of measuring the distance between a series of containers at multiple locations in a cycle.

10. A method of drawing samples into a plurality of containers comprising the steps of:

calibrating a distributor arm as to position;  
 drawing samples with a peristaltic pump;

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selecting a designated container;  
 moving the distributor arm to the designated container by counting changes in incremental angular movement of the distributor arm until it is over the container wherein an outlet end of the distributor is connected to the distributor arm;  
 causing at least one of said samples to flow into the designated container by rotating the outlet end of the distributor over the designated container and causing the sample to flow through the distributor into the designated container;  
 continually updating the position of the distributor arm in memory;  
 generating a series of random numbers for selecting containers to receive samples;  
 moving the distributor arm at selected times over the containers to deposit a sample in a designated container at a time corresponding to one of said random numbers; and  
 recording the time at which containers receive samples.

11. A method in accordance with claim 10 wherein the operator checks the time at which samples have been deposited in certain containers.

12. A method in accordance with claim 10 wherein a standard solution is inserted in a container prior to taking samples, wherein tampering may be discovered.

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