

INSTRUMENT CLEANING AND MAINTENANCE PROCEDURES

EN 1060-1, -2

Cuff Cleaning Procedure: (All Types)

Remove the rubber inflation bag from the Dacron® Calibrated® V-Lok® Cuff and engage the hook and loop fasteners to prevent lint from collecting in the hooks.

Washing the cuff in warm, soapy water will extend the service life of the cuff. If required, the use of non-chlorine bleach is recommended, however, chlorine bleach solutions will shorten the service life of the cuff.

The cuff and inflation bag may be sterilized with commercially available disinfectants however, some disinfectants may cause skin irritation and dark colored disinfectants may stain the cuff. Test a single cuff to ensure that no damage or staining will occur. Follow the manufacturer's instructions and **thoroughly rinse** each component to remove any residual disinfectants, allow them to air dry and then insert the inflation bag.

Cuffs **can** be sterilized with Ethylene Oxide.

Do **not** autoclave the cuff and do **not** iron the cuff as the hook and loop fasteners will melt at temperatures above 325° degrees F, 162° degrees C.

Accuracy: +/- 3 mmHg, European Standards EN1060-1, non-invasive sphygmomanometers, EN 1060-2 supplementary requirements, as well as ANSI/AMMI SP-10.

Tube Dimensions: The **internal** diameter of the cartridge tube on a mercury-gravity type sphygmomanometer is 5 mm.

Warning to users: If **Luer lock** connectors are attached to the tubing of a sphygmomanometer, there is a possibility that they might be inadvertently connected to intravascular fluid systems, allowing air to be pumped into a blood vessel.

Annex B (informative):

B. 1 Guidelines and Precautions: (Mercury-gravity Type)

Mercury-gravity type sphygmomanometers should be handled with care. Regular checks should be made to ensure that there are no air leaks in the inflation system or that the manometer has not been damaged so as to cause a loss of mercury.

B. 2 Health & Safety When Handling Mercury:

Exposure to mercury can have serious toxicological effects; absorption of mercury results in neuropsychiatric disorders and, in extreme cases nephrosis. Therefore precautions should be taken when carrying out any maintenance to a mercury-gravity type sphygmomanometer.

When cleaning or repairing a mercury-gravity type sphygmomanometer the instrument should be placed on a smooth impervious surface, which slopes away from the operator at about a 10-degree to the horizontal, with a water-filled trough at the rear. Suitable gloves (e.g. *nitrile*) should be worn to avoid direct skin contact. Work should be carried out in a well-ventilated area, and ingestion and inhalation of the vapor should be avoided.

For more extensive repairs, the instrument should be packed with adequate padding, sealed in a plastic bag or container, and returned to a specialist for repair. It is essential that a high standard of occupational hygiene be maintained in facilities where mercury-containing instruments are repaired. Chronic absorption is known to have occurred in individuals repairing sphygmomanometers.

B. 3 Mercury Spillage:

When dealing with a mercury spillage, wear latex gloves. Avoid prolonged inhalation of mercury vapor. Do not use an open vacuum system to aid collection.

Collect the small droplets of mercury into one globule and immediately transfer all the mercury into a container, which should then be sealed.

After removal of as much mercury as practicable, treat the contaminated surfaces with a wash composed of equal parts calcium hydroxide and powdered sulfur mixed with water to form a thin paste. Apply this paste to all contaminated surfaces and allow to dry. Remove the paste and wash the surfaces with clean water. Allow to dry and ventilate the area.

B. 4 Cleaning The Manometer Tube:

To obtain the best results from a mercury-gravity type sphygmomanometer, it should be tested at regular intervals to see if the mercury moves up and down the tube freely. If it does not, the manometer tube should be cleaned. During cleaning, care should be taken to avoid the contamination of clothing. Any material contaminated with mercury should be sealed in a plastic bag and disposed of properly.

Instrument Maintenance (All Types)

Maintenance: It is recommended that accuracy and performance be checked one a year, and after any repair. Additionally, aneroid instruments should be checked for accuracy if the pointer is outside of the zero calibration zone, when no pressure is applied.

Testing Instrument Accuracy

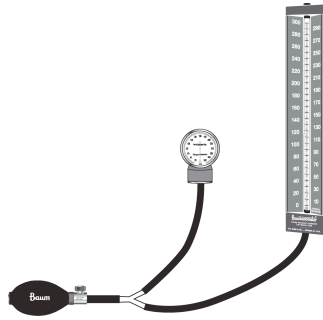
To test instrument accuracy you will need:

1. A *master reference manometer* (mercury-gravity standard).
2. A "Y" connector with an inflation bulb and valve attached.

Connect one leg to the *master reference manometer* and the other to the blood pressure instrument to be tested.

Note: *Cuffs and bags are not used in this test.*

*Diagram of a master reference manometer
connected to an aneroid with a "Y" connector*



Test Procedure

Check each instrument to be sure that it is at zero and do not inflate beyond 300 mmHg. Slowly inflate the instruments to 250 mmHg and compare the readings. They should be the same, however, a deviation of ± 3 mmHg is acceptable. Repeat this procedure at 200 mmHg, 150 mmHg, 100 mmHg, 50 mmHg and 0 mmHg. If the deviation is greater than ± 3 mmHg at any of these points, the instrument being tested is inaccurate and needs adjustment or repair.

Note:

Instruments that fall out of calibration should be immediately taken out of service and referred to qualified service personnel for repair and recalibration.