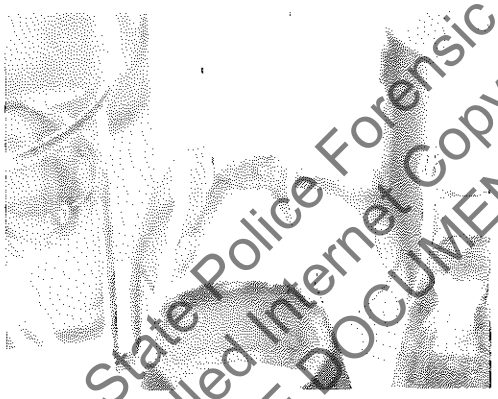
Idaho State Police
Forensic Services

Approval for Quality System Controlled Documents



Discipline/Name of Document: Firearms/Toolmarks
Section 9: Maintenance and Calibration

Revision Number: 2

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APPROVED BY: Corinna C Owsley
Quality Manager

1/8/08
Date Signed

Section 9 Maintenance and Calibration

History Page

Revision #	Effective date	History
0	11/15/06	This is an original procedure this procedure has been completely reformatted and updated from the previous procedure that was adopted from the Washington State Patrol.
1	5/7/07	Procedures for handling and transport of reference weights, gage blocks and the NIST traceable ruler were added. Issuing authority added.
2	1/8/2008	Maintenance for annual cleaning and check removed.

Section 9 Maintenance and Calibration

9.0 Scope and Background

To insure accurate data, all equipment that has a direct effect upon the comparison and measurement processes is kept in proper working order. Measurement devices and reference standards receive periodic calibration. Other equipment is examined and maintained periodically to verify safe/effective operation. Calibration / maintenance intervals may be adjusted based upon past performance, where the item has demonstrated that it will remain within specifications throughout the calibration interval.

Any equipment that appears to be damaged, out-of calibration or functioning improperly is removed from service, until the nature of the problem can be determined and corrected.

9.1 Procedures

9.1.1 Balances

Maintenance and repairs performed on the balance will be recorded in a maintenance log.

Balances will be calibrated annually be a certified outside vendor. If the balance is taken out of service for repair or an event occurs (such as moving the balance) an intermediate check will be performed and documented. In order to pass the intermediate check the accuracy of the balance will be +/- 2%. The weights used in intermediate checks will be cleaned and calibrated annually by an outside vendor. The weights will be handled with gloves or tweezers to keep them clean. They will be transported and stored in their case. The documentation for the calibration of the weights will be kept in the front office.

9.1.2 Comparison microscopes

Each microscope will have a maintenance log and any maintenance or repair will be recorded.

9.1.3 Micrometers and Calipers

Each micrometer or caliper will be annually checked against a certified gauge block or micrometer disk. These checks will be documented and the micrometer or caliper must demonstrate accuracy within .001" of the intended measurement.

9.1.4 Rulers, and other measuring devices.

9.1.4.1 NIST traceable devices

The measuring specifications and accuracy for the NIST traceable measuring devices and the certified measuring rods are determined during certification of these devices and can be found in each laboratory's equipment/instrumentation maintenance file. The NIST traceable measuring device will be calibrated and recertified every three years. The NIST traceable ruler will be stored so as to prevent damage such as bending or melting. The ruler shall be handled with care to prevent bending, melting or damage to measuring marks.

9.1.4.2 Rulers and tape measures

Measuring devices will be checked against the NIST traceable measuring device every three years.
The device will be checked against a NIST traceable device and should read 1:1. If it does not the device will be taken out of service.

9.1.4.3 Damage or malformation

If damage or a malformation (i.e. breakage or melting) occurs that may effect the measuring device it will be taken out of service and checked against the NIST certified measuring device before being put back into use. NIST certified measuring devices will be taken out of service and calibrated before being put back into service.

9.1.5 Gage blocks

Gage blocks will be calibrated by an outside vendor every three years. Gage blocks will be handled with care to prevent bending, breaking or melting and will be transported and stored in their case.

9.1.6 Trigger Pull Weights

Trigger pull weights will be checked annually. The weights will be checked using certified balance. Tolerance for each weight is +/- 5% of the expected value. If a weight does not fall within the expected value it will be taken out of service and corrective action will be taken. Corrective action may include cleaning the weight or replacing the weight. The weight must be checked and have satisfactory results before being put back in service.

9.2 Safety Considerations

This procedure involves hazardous materials, operations and equipment. This procedure does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this procedure to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. Proper caution must be exercised and the use of personal protective equipment must be considered to avoid exposure to hazardous conditions.