The gauge block set used to conduct in-house performance checks of measuring devices will have their performance verified by an external calibration laboratory at regular intervals not to exceed ten (10) years. Proper handling of these standards should be followed when conducting performance checks.

- Comparison and Stereo Microscope Calibration
    - Currently, all maintenance and calibrations are performed by an approved vendor.
- Comparison Microscope Magnification Performance Check
    - A pair of Bright-Line Hymacytometer slides by Reichert-Jung (calibration standard K-2739) will be used. To check for magnification, place the K2739 onto both stages. Focus each side of the microscope using 6X magnification. Position the dividing prism such that it is in the center of the field. Align each side such that the lines on the scales are horizontal and the line at the top of the field of view is perfectly aligned on each side. The lines on the scale shall be aligned to one another such that the line on the bottom of the field is not misaligned by more than one line with either an upward or downward direction. Repeat the same procedure for all magnifications with the same one line tolerance. Document results as needed in logbook.
- Comparison Microscope Caliper Performance Checks
    - A stage micrometer slide (calibration standard KR-814 from Trace) will be used for performance checks. Placing the micrometer on the left stage, adjust the microscope's magnification to 6X. Focus the microscope on the 1" scale located on the slide. Using the measuring eyepiece, align the horizontal reticle with a scale division on the slide. Turn on the Sylvac caliper and zero it. Move the left stage until the eyepiece reticle is now on the next scale division. Observe the measurement noted on the caliper to the actual measurement listed on the scale. The tolerance can be ± .003". Repeat this procedure for all magnifications. Document results as needed in logbook.
    - *NOTE: Since the scale on the micrometer slide will not change unless damaged or broken, external re-calibration of the micrometer is not needed under normal usage. Replace the stage micrometer if damage should occur that affects the division markings.*
- Calipers
    - Use the Brown and Sharp Gauge Block Set and choose at least three different blocks. (Pick blocks that are at least 0.010" apart)
    - Insert the center of the block into the caliper and measure.
    - Observe the measurement noted on the caliper to the actual measurement listed on the block. The tolerance can be ± 0.003". If the caliper is within the tolerance on all measurements, the calibration has been verified. If the caliper does not measure within the tolerance, the caliper should be re-set and repeat steps one through three.
    - Record the results and date in the logbook.

- Micrometer

    - Use the Brown and Sharp Gauge Block Set and choose at least three different blocks. (Pick blocks that are at least 0.010” apart)
    - Insert the center of the block into the micrometer and measure.
    - Observe the measurement noted on the micrometer to the actual measurement listed on the block. The tolerance can be ± 0.003”.
    - If the micrometer is within the tolerance on all measurements, the check has been verified. If the micrometer does not measure within the tolerance, the micrometer should be re-set and repeat steps one through three.
    - Record the results and date in the logbook.

- Weight Scales

    - Scales will have performance checks performed annually. Routine maintenance will be performed annually or as needed.
    - Use the Fisher Scientific Company weights.
    - Press the calibration button on the scale and follow the directions.
    - The weight scales are considered to be within tolerance when the calibration is ± 0.1 gram.
    - Record the results and date in the logbook.

- Balance

    - Balances will have performance checks performed annually. Routine maintenance will be performed annually or as needed.
    - Release beam or arm.
    - Using the slide weights or dial, set a weight.
    - Place a weight equal to the set weight in the pan or hook.
    - Check for zero.
    - Repeat the above steps with three different weights.
    - Reset the balance if necessary. The tolerance can be ± 0.1 gram.

- Trigger Pull Spring Gauges

    - Use the 2000 gram weight located in the FSL-A Firearms Section.
    - Measure the weight using the trigger pull spring gauges.
    - Observe the weight noted on the gauge as compared to the actual weight listed on the weight.
    - The trigger pull spring gauges are considered to be within tolerance when calibration is ± 0.125 pounds. Re-adjust if necessary.
    - Record the results and date in the logbook.

- NRA Trigger Pull Weights

        - Use the NIST calibrated TSC balance located in the Explosives Section.

- Place the weights on the scale.
- Observe the weight noted on the scale as compared to the actual weight listed on the weights.
- The trigger pull weights are considered to be within tolerance when calibration is ± 1.0 ounce.
- Record the results and date in the logbook.

- 2000 Gram Weight

    - Use the NIST calibrated TSC scale located in the Explosives Section.
    - Place the weight on the scale.
    - Observe the weight noted on the scale as compared to the actual weight listed on the weight.
    - The 2000 gram weight is considered to be within tolerance when calibration is ± 1.0 gram.
    - Record the results and date in the logbook.

- Fisher Weights

    - Use the NIST calibrated Denver Instrument balance (Model APX-200) located in the Explosives Section.
    - Place the weight on the scale.
    - Observe the weight noted on the scale as compared to the actual weight listed on the weights.
    - The weights are considered to be within tolerance when calibration is ± 0.1 gram.
    - Record the results and date in the logbook.