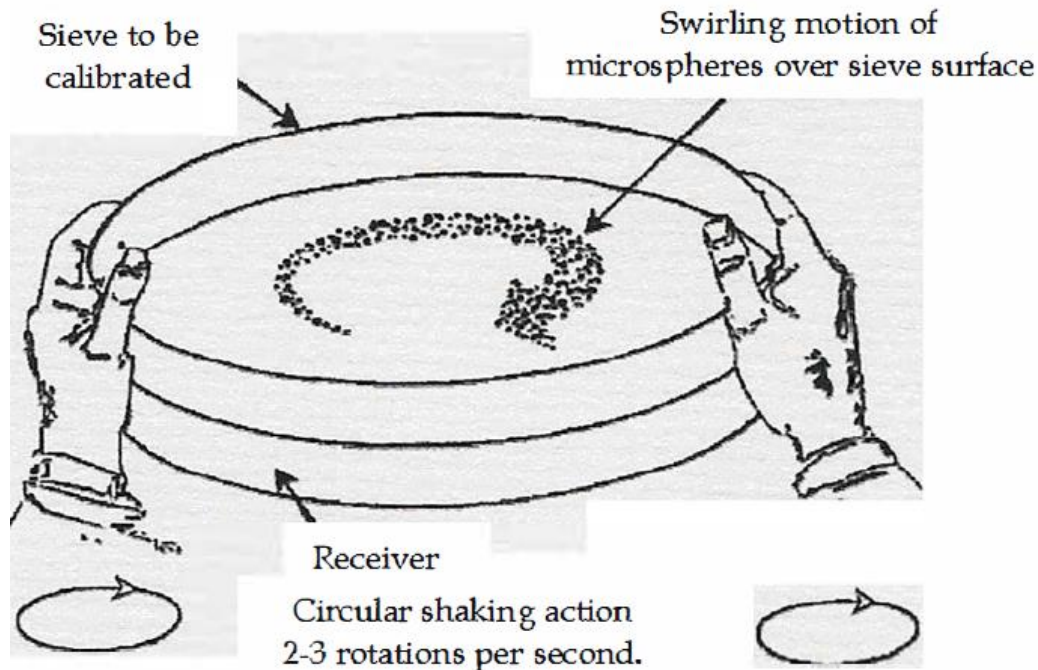


## *Use of Sieve Calibration Microspheres*



Place the sieve to be calibrated (up to 200 mm or 8 inch diameter), with the receiver, on a balance (with 0.01 g resolution) and tare.

Select the appropriate calibration microspheres for the aperture size of the sieve and pour out a single-shot bottle onto the mesh. Record the initial weight of the microspheres shown on the balance  $W_1$ .

Shake the microspheres over the surface of the mesh until the end point is reached:

### By Hand

Use a vigorous swirling action to disperse the microspheres over the surface of the mesh - see diagram above - 2 - 3 cycles per second for 1 minute is recommended.

### Mechanical Sieve Shaking

Shaking times may vary from 1 - 3 minutes depending on the sieve shaker. Empty and check the receiver at one minute intervals to determine that the end-point has been reached.

When complete, tap the frame of the sieve a few times with your hand to dislodge any near aperture sized beads.

Empty the undersize fraction from the receiver into a suitable container. (These can be kept for future analysis by microscope if the maximum aperture size of the sieve needs to be determined.)

Reassemble the sieve and receiver and tap a few more times by hand - if beads still fall through the mesh the shaking time needs to be extended because the end-point has not been reached.

Empty the receiver again, if necessary.



Without resetting the tare on the balance, re-weigh the sieve and receiver (now including the over-size microspheres in the sieve) - record the weight W2.

Calculate the percentage of microspheres passing the sieve:

$$\frac{W1 - W2}{W1} = \% \text{ passing}$$

Use the calibration graph on the calibration certificate to determine the mean aperture size from the percentage passing. Check that the batch number on the bottle matches with the certificate. Dispose of the microspheres with due regard to local health and safety requirements. Each bottle of microspheres is only intended to be used once as the calibration is invalidated after use. For sieves with diameters in excess of 200 mm or 8 inches two or more bottles of microspheres should be used. Always use the entire contents of a bottle and do not attempt to alter the sample size in the bottle as this will invalidate the calibration.