

2002 CALIBRATION AND REPAIR OF OHAUS TRIPLE BEAM BALANCE
(2610 grams)**2002.1 CALIBRATION of OHAUS TRIPLE BEAM BALANCE (2610 grams)**

This balance requires calibration before each construction season. Rough use of the balance may damage the bearing "V-blocks" and cause erratic and inaccurate readings. Repairs to the balance should not be attempted by field project personnel. An apparently damaged balance should be exchanged for a calibrated balance in the District Office. Calibration and repair should be by authorized personnel of the District Materials Office.

2002.2 PPOCEDURE for CALIBRATION**A. Attachment or hanger weights.**

1. Check these weights on a laboratory balance and correct as needed by adding or subtracting lead shot. Reset cover plate screw securely. Newer hanger weights are not adjustable.
2. The 500 gram weight shall weigh 147.5 grams.
3. The 1000 gram weight shall weigh 295.0 grams.

B. Attachment weight pivots (hanger pins).

1. Set the balance on a firm, reasonably level surface.
2. Set all three beams and tare poise at zero.
3. Zero the balance using the knurled "fine adjustment" knob. If the balance will not zero, set it aside for possible repair.
4. Attach the 500g hanger weight and balance the scale using laboratory test weights. If the scale doesn't read $500 \pm 0.5g$, adjust the attachment weight pivot. Repeat step "E" using both front and back pivots. When pivots are adjusted, tighten the lock-nuts securely.

C. Calibrating the 10g capacity beam (allowable tolerance $\pm 0.1g$)

1. Zero the balance.
2. Apply a one gram load (laboratory weight), balance the scale and record the scale reading.

3. Continue calibration in one gram increments through ten grams.
 4. Remove the load, return poise to zero and check for zero balance.
 5. If the scale isn't in balance, repeat steps "1" through "4".
- D. Calibrating the 100g capacity beam (allowable tolerance $\pm 0.3g$)
1. Zero the balance.
 2. Apply a ten gram load (laboratory weight), balance the scale and record the scale reading.
 3. Continue calibration in ten gram increments through 100 grams.
 4. Remove the load, return poises to zero and check for zero balance.
 5. If the scale is not in balance, repeat steps "1" through "4".
- E. Calibrating the 500g capacity beam (allowable tolerance $\pm 0.5g$)
1. Zero the balance.
 2. Apply a 100 gram load (laboratory weight), balance the scale and record the reading.
 3. Continue calibration in 100 gram increments through 500 grams.
 4. Remove the weights, return poises to zero check for zero balance.
 5. If the scale is not in balance, repeat steps "1" through "4".
- F. Calibration at 1000g, 1500g, 2000g (tolerance $\pm 1.0g$), and 2610g (tolerance $\pm 1.5g$) loads.
1. Zero the balance.
 2. Apply a 1000g load (laboratory weight), balance the scale and record the reading.
 3. Continue calibration at 1500g, 2000g and 2610g (scale capacity) loads.

4. Remove the weights, return poises to zero and check for zero balance.
5. If the scale is not in balance, repeat steps "1" through "4".

A balance that meets the calibration requirements shall be initialed, marked "O.K." and dated (month and year) with tape or other marking. Balances that do not meet the requirements should be checked for possible repair.

2002.3

REPAIR OF OHAUS TRIPLE BEAM BALANCE (2610 grams)

Frequently, scales that do not meet the calibration requirements may be repaired by replacing the "V" bearing blocks. A scale that is obviously twisted out of alignment; however, is non-repairable and should be discarded.

Procedure for Repair:

- A. Check rod assembly - The check rod beneath the scale must swing freely. Any binding will cause inaccurate readings.
- B. Bearing "V" blocks.
 1. Carefully remove the bearing cover.
 2. Examine the friction plate (rectangular plate inside the cover) and using crocus cloth, remove any roughness or knurling caused by the knife edge.
 3. Carefully slide the "V" block out and replace it with a new one. Replace all four blocks, one at a time.
 4. Reassemble the friction plates and bearing covers. If the balance does not swing freely or rides against the trig loop post, the knife edges maybe worn, or the front bearing assembly may be out of line and is not repairable.
- C. Balance cup - A balance that will not "zero" may need adjustment of the ballast weight.
 1. Hold the bearing assembly beneath the platform securely, and slowly turn the platform counter clockwise to remove it.
 2. Adjust the ballast weights as needed, and replace the platform securely.

2002.4 OHAUS CALIBRATION FORM

SCALE NO.									
0g									
1g									
2g									
3g									
4g									
5g									
6g									
7g									
8g									
9g									
10g									
10g									
20g									
30g									
40g									
50g									
60g									
70g									
80g									
90g									
100g									
100g									
200g									
300g									
400g									
500g									
1000g									
1500g									
2000g									
2500g									
2610g									
PASS/FAIL									
DATE									
CHECKED BY									

Tolerances:

0 - 10g ($\pm 0.1g$)
500 - 2000g ($\pm 1.0g$)

10 - 100g ($\pm 0.3g$)
2000 - 2610g ($\pm 1.5g$)

100 - 500g ($\pm 0.5g$)