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Title: Calibration of a Mettler PL1200 Balance

Source: Research Triangle Institute

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TITLE: STANDARD OPERATING PROCEDURE FOR CALIBRATION OF A METTLER PL1200 BALANCE

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CALIBRATION OF A METTLER PL 1200 BALANCE

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1.0 INSTRUMENTATION

The Mettler PL 1200 has a weight range of 0 to 1200 g with a readability of 0.01 g. It has an additional taring range of 100 g so that the maximum load is 1300 g.

2.0 GENERAL INSTRUCTION MANUAL

Copies of the instruction manual are maintained by the ACS Support Services Staff and in the QA Office. In addition, instructions for operation of the balance are attached to the balance (a copy is included in this SOP with a general view of the instrument).

3.0 CALIBRATION

The balance will be calibrated annually by the manufacturer or manufacturer's representative.

Calibration must be verified each time the balance is moved, cleaned, and at other intervals depending upon usage and project protocol.

3.1 Place a standard 100 g weight (±0.2 g) on pan and set built-in weight control knob ("14" on general view, Figure 1) to "1".

NOTE: The standard weight must be Class S-1 or equivalent.

3.2 Adjust to exact zero with zero-adjustment disk ("20" on general view, Figure 1).

3.3 Return weight-control know to "0" and read results on the optical scale. The optical scale must read 100 g exactly.

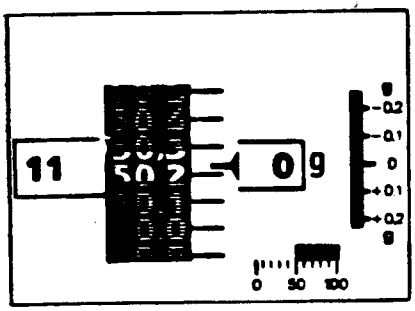
3.4 If the reading is less than 100 g, remove housing cover and raise weight (Knob No. 23).

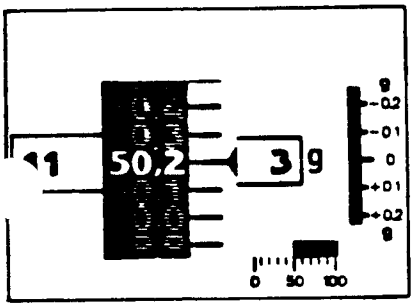
Legend for Figure 1

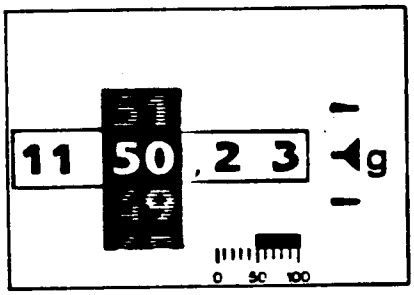
9 Pan
10 Light switch
11 Level indicator
12 Leveling discs
13 Tare knob
14 Weight-control knob
15 Digital-counter knob
20 Zero-adjustment disk
27 Built-in weight result
28 Optical scale
29 Filling guide
30 Over-under scale
31 Tare indicator

Directions for use

Switch light ⑩ on.
Balance should be level. Adjust if necessary.
Turn tare knob ⑬ in direction of arrow to stop position.
Set digital result to "0" with digital-counter knob ⑮.
Set built-in weight result ㉗ to "0" with built-in weight-control knob ⑭.
Adjust zero line of optical scale exactly to index mark of ground-glass plate with zero-adjustment disk ⑳.







1. To weigh a sample

- Place sample to be weighed on pan.
- If plus signs appear on the optical scale, turn the built-in weight-control knob ⑭ until numbers appear on the optical scale.
- Read the result.

Analog readout

The final digit, ten milligrams, is estimated by determining the position of the pointer between scale divisions.

Sample weight: 1150,22 g

Digital readout

Turn the digital-counter knob ⑮ until the next lower scale division lines up with the pointer.

Sample weight: 1150,23 g

2. To tare a sample

Samples weighing up to 100 g may be tared by turning the tare knob ⑬ continuously back to zero.
If the tare is more than 100 g, the built-in weights have to be used. When using the built-in weights, the corresponding value has to be subtracted off the weighing result.
The red pointer or the red " T " resp. indicates the range used in the tare indicator ㉛.

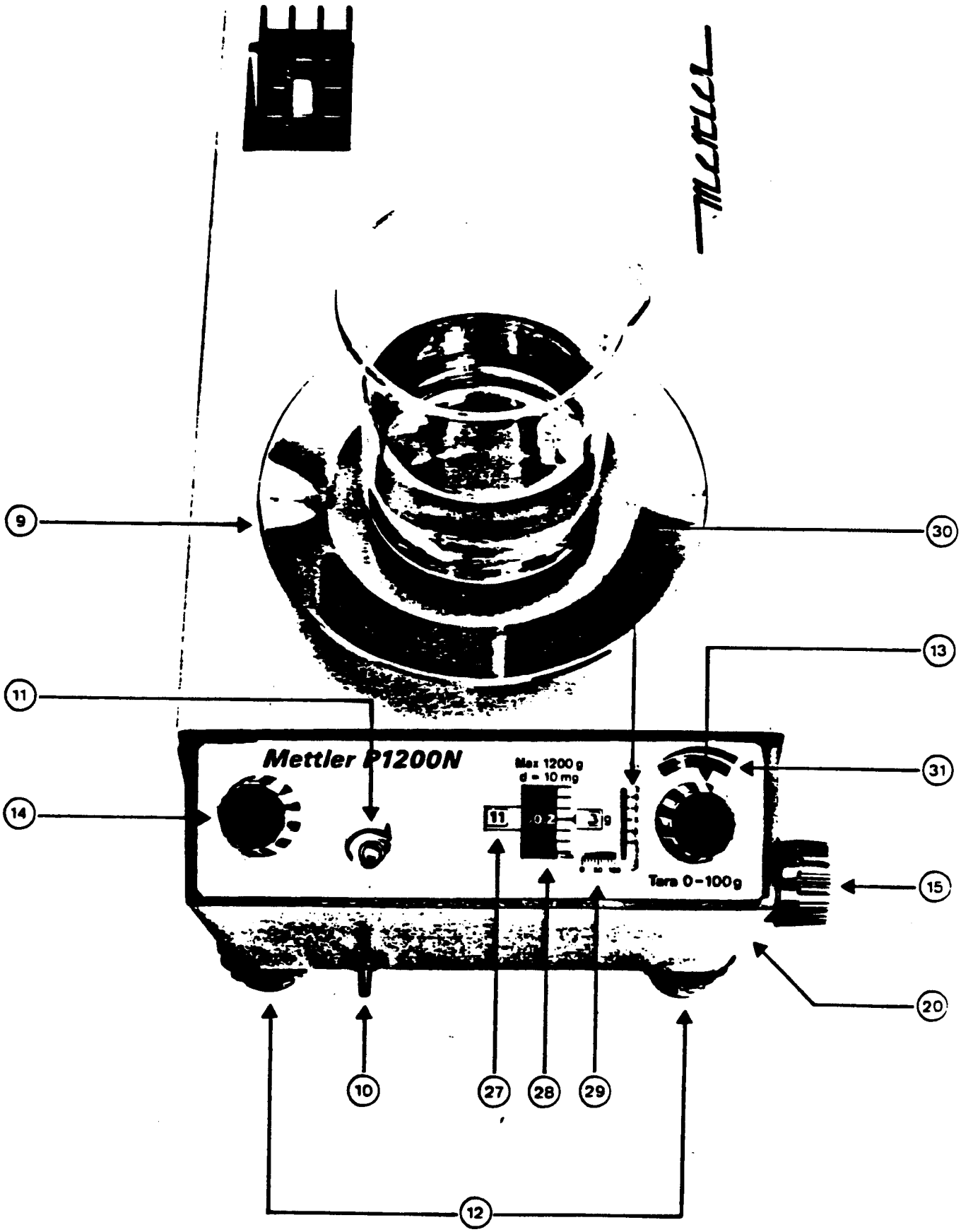


Figure 1. General view of the Mettler PL1200