

Mettler

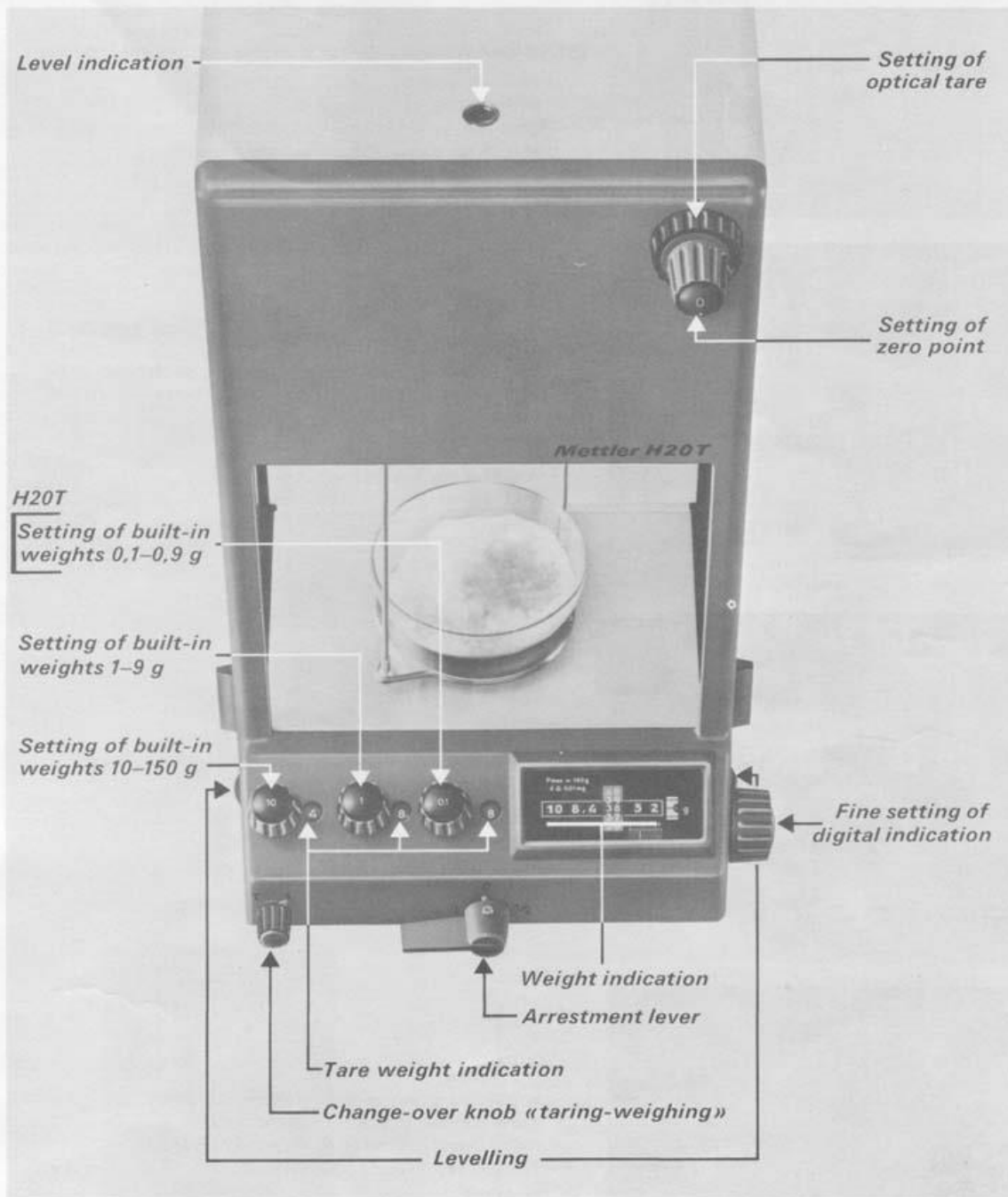
Mettler H10T/H20T

Instructions

Mettler Analytical and Precision Balances, CH-8606 Greifensee-Zurich/Switzerland

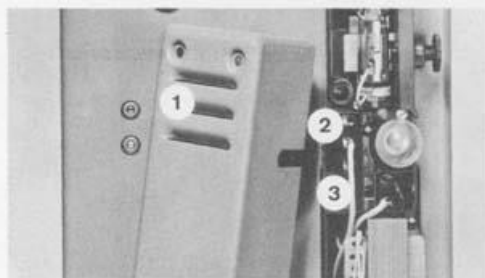
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1. General view



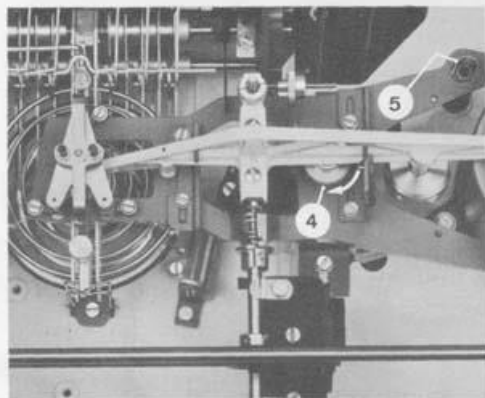
The balance is provided with a taring device which extends over the entire range of the built-in weights and the optical indication. The indication of the built-in weights and of the taring device is separately legible. A filling guide is provided for weighing-in operations.

2. Setting-up



2.1. Check voltage selector whether voltage set is correct

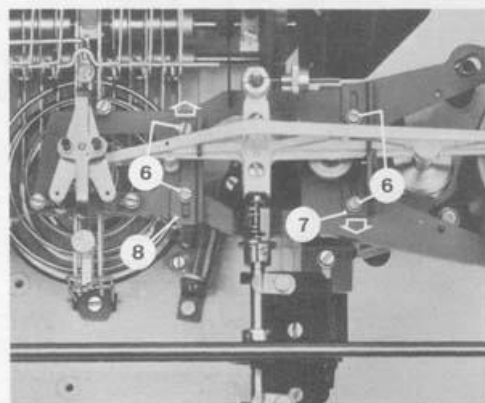
Remove housing ① from rear wall.
If operating voltage shown on terminal strip ② does not coincide with the supply voltage, the wire ③ should be connected to the desired voltage.



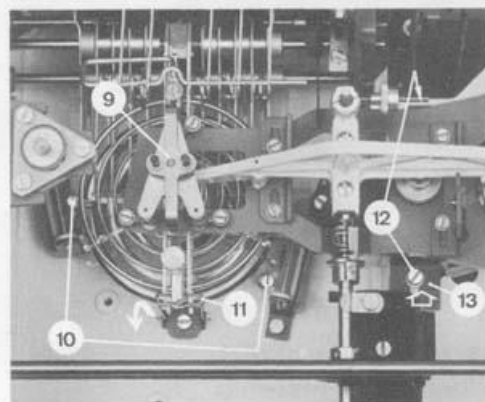
2.2. Releasing of transport arrestment

The following manipulations may be performed only with arrested balance (arrestment lever in vertical position)!

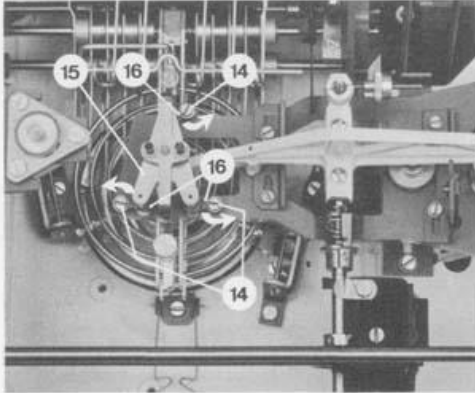
- Remove housing cover.
- Screw down knurled nut ④ and tighten.
- Pull out cardboard strip ⑤.



- Loosen the four screws ⑥, slide stirrup ⑦ and stirrup ⑧ in direction of arrow.
- Tighten screws ⑥.

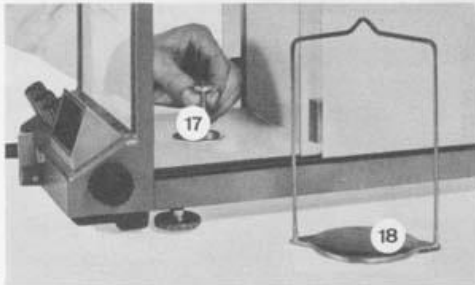


- Screw out grub-screw ⑨ as far as it will go.
- Turn out two screws ⑩ as far as they will go.
- Swing down spring ⑪ in direction of arrow.
- Loosen two screws ⑫, slide stirrup ⑬ in direction of arrow.
- Tighten screws ⑫.



- Loosen three screws (14), raise hanger plate (15) and swing out the three catches (16) in the direction of arrow.
- Tighten screws (14)
- Fit housing cover.

3. Setting and checking



3.1. Fitting of pan brake and pan

- Fit pan brake (17).
- Suspend pan (18).
- Check braking effect:
- Swing out pan laterally by about 1 cm (1/2 inch) and release.
- The pan must come to rest after about 10 oscillations.

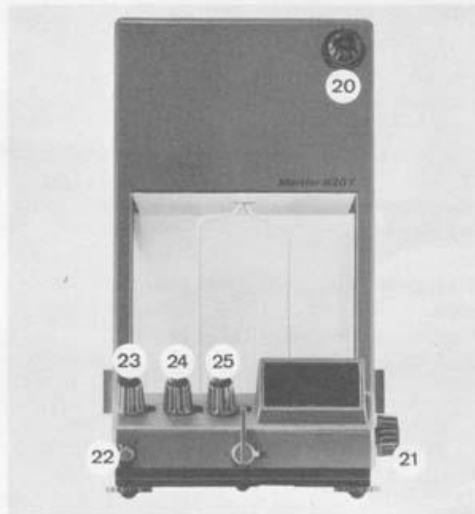


Corrections:

- Unhook pan (18).
- Pull pan brake (17) out of its guide.
- Braking effect too strong:
- Rotate sleeve (19) in direction of arrow.
- Braking effect too weak:
- Rotate sleeve (19) in opposite direction of arrow.

3.2. Setting all operating elements to zero

- Turn taring knob (20) as far as it will go in the anti-clockwise direction.
- Set digital indication to "00" by means of knob (21).

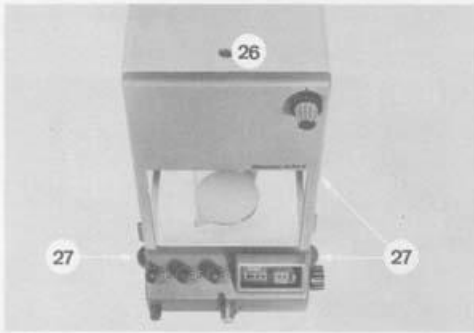


H20T

- Turn switch-over knob (22) to "T" and set tare weight indication to "0" by means of knobs (23), (24) and (25).
- Turn switch-over knob (22) to "I".
- Set built-in weight indication to "0" by means of knobs (23), (24) and (25).

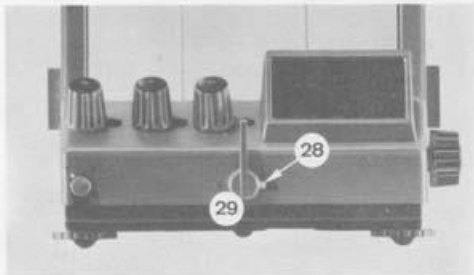
H10T

- Turn switch-over knob (22) to "T" and set tare weight indication to "0" by means of knobs (23) and (24).
- Turn switch-over knob (22) to "I".
- Set built-in weight indication to "0" by means of knobs (23) and (24).



3.3. Levelling balance

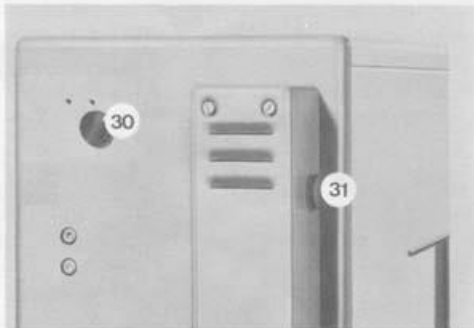
- Center the bubble of the level indicator ⑳ within the circular marker by turning the three foot-screws ㉗.
- Connect mains plug.



3.4. Positions of arrestment lever

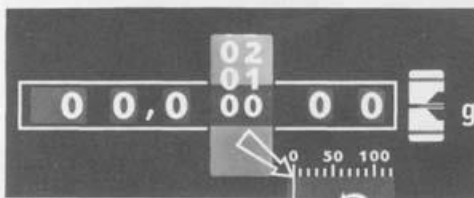
- Actuate knob ㉘, pulling arrestment lever ㉙ forward by about 4 mm at the same time.

Lever in position 0 = arrested
 Lever in position 1/2 = semi-released
 Lever in position 1 = released

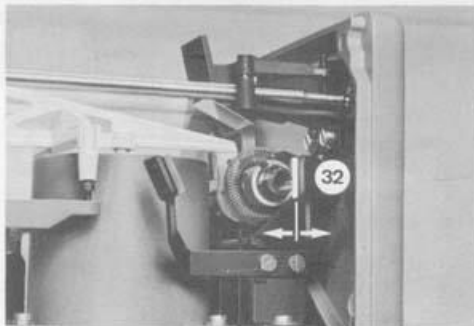


3.5. Checking of scale image

- Load pan with about 1 g and semi-release balance (position 1/2). Image definition is adjusted by turning the knob ㉚ on rear wall.
- If the scale image is dim or has shadows along the edges, brightness is adjusted by turning knob ㉛.
- Arrest balance (position 0) and remove 1 g weight.

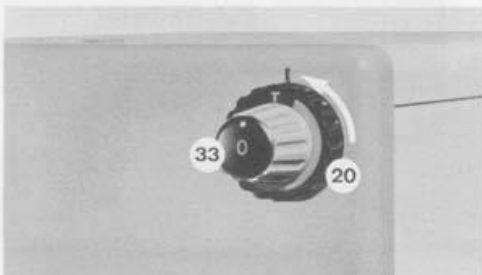


- Release balance (position 1). The filling guide must be set accurately to zero.



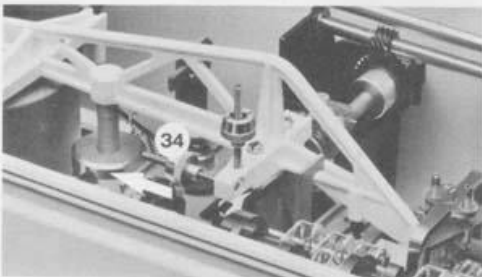
Lateral displacement of the scale image can be corrected as follows:

- Arrest balance.
- Remove housing cover and right side-wall.
- Release balance.
- Push corner mirror ㉜ in direction of arrow.
- Arrest balance, fit side-wall and housing cover.



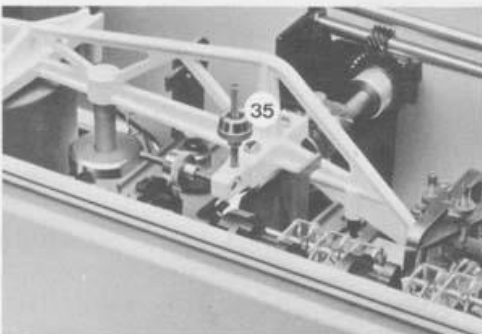
3.6. Setting of zero point

- Turn taring knob 20 as far as it will go in the anti-clockwise direction.
- Release balance.
- Accurately set zero point, using knob 33.



If range of adjustment is insufficient:

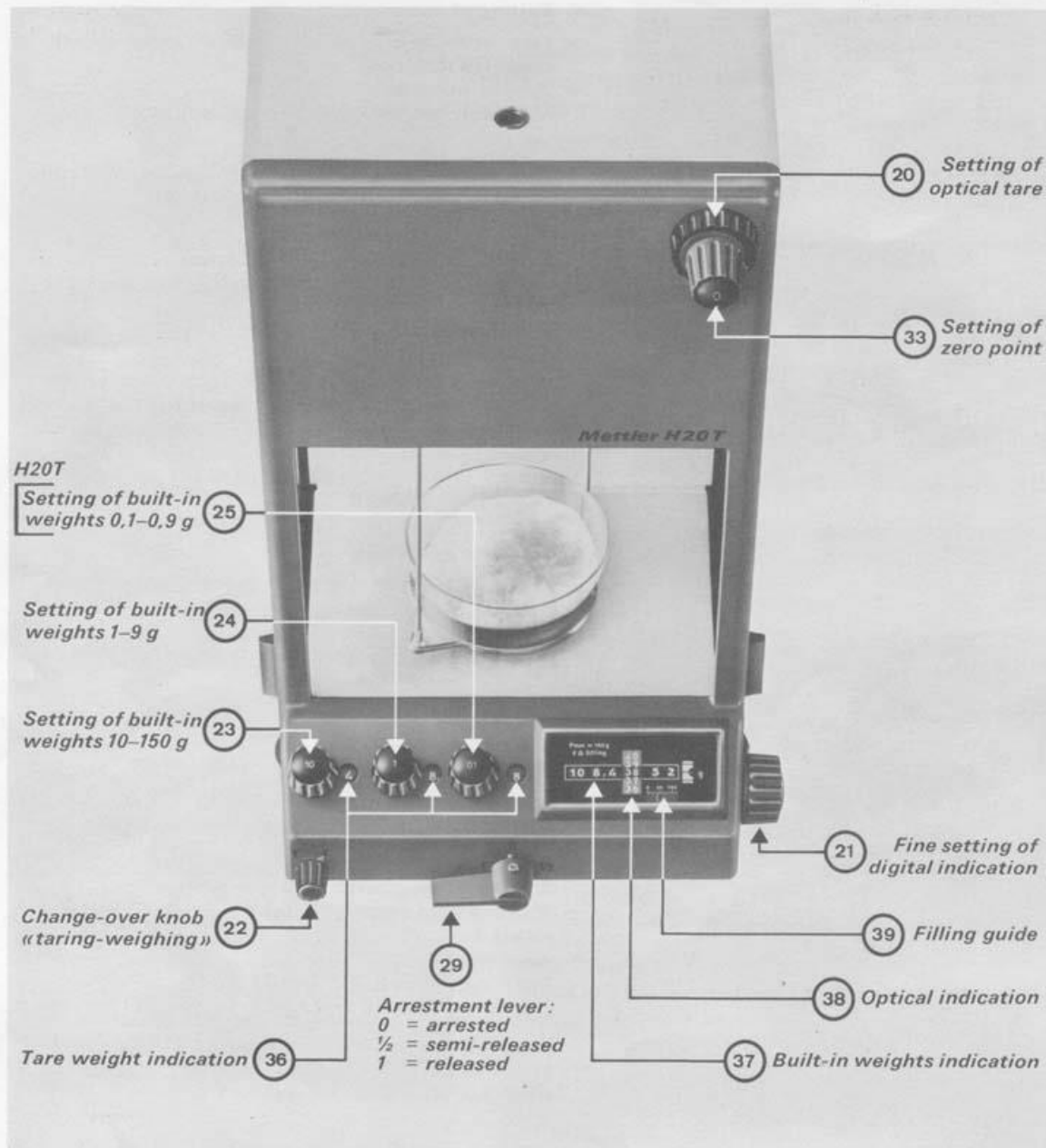
- Register mark in zero-point knob 33 with the index on the housing.
- Arrest balance (position 0).
- Remove housing cover.
- By turning the fine adjustment weight 34, the zero point is corrected. Turning in direction of arrow will raise the scale and vice-versa. (One round corresponds to about 14 scale lines on the H20T and to about 7 scale lines on the H10T.)



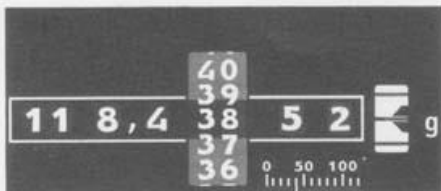
3.7. Checking sensitivity

- | | |
|------|---|
| H20T | <ul style="list-style-type: none"> - Put weight switch knob 25 on " 1 ". - Load pan with about 0.1 g and release balance. - Setting zero point. - Set weight adjustment knob 26 to " 0 ". |
| H10T | <ul style="list-style-type: none"> - Put weight switch knob 24 to " 1 ". - Load pan with about 1 g and release balance. - Setting zero point. - Set weight adjustment knob 24 to " 0 ". |
- The optical scale must indicate 100 precisely.
 - Arrest balance and remove 1 g resp. 0.1 g weight.
- Correcting sensitivity:
- Remove housing cover.
 - With readings below 100, the sensitivity weight 36 should be screwed up with the balance arrested (one round corresponds to about 0.4 scale lines on the H20T and to about 0.2 scale lines on the H10T)
 - With readings above 100, screw down sensitivity weight 36 with the balance arrested (one round corresponds to about 0.4 scale lines on the H20T and to about 0.2 scale lines on the H10T).

4. Directions for use



- Turn taring device (20) counterclockwise as far as it will go.
- Set built-in weight indication (37) to "0" by means of knobs (23), (24) and (25).
- In case tare weight indication (36) is not at zero:
- Turn switch-over knob (22) to "T".
- Set taring weight indication (36) to "0".
- Turn switch-over knob (22) to "I".
- Set digital indication to "00" by means of knob (21).
- Release balance (arrestment lever (29) at "1").
- Register the zero line of the optical scale with the index mark on the ground-glass screen by means of knob (33).
- Arrest balance (arrestment lever (29) at "0").



Weight indication H20T: 118.43852 g



Weight indication H10T: 132.7343 g

4.1. Weight determination

- Load pan with material to be weighed.
- Semi-release balance (arrestment lever 29 at 1/2).
- Turn weight adjustment knob 23 and watch arrows on filling guide 30. When direction of the arrows changes, turn knob 23 backwards by one unit. If the direction of the arrows does not change, leave knob in its position.

H20T | - Repeat process with weight adjustment knobs 24 and 25.

H10T | - Repeat process with weight adjustment knob 24.

- Release balance and allow scale to come to rest.

H20T | - When the balance is released, the weight adjustment knobs 23 and 24 are automatically blocked in order to avoid wrong manipulations!

H10T | - When the balance is released, the weight adjustment knob 23 is automatically blocked in order to avoid wrong manipulations!

- Turn fine adjustment of digital indication 21 until the next lower division is located precisely in the light slot of the index fork.
- Read result.
- Arrest balance.

Return all indicating elements to "0".

4.2. Taring

- Apply tare receptacle and semi-release balance.
- Turn switch-over knob 22 to "T".
- Determine tare by means of the weight adjustment knobs 23, 24 and 25 as in weight determination.
- Release balance and allow scale to come to rest.
- Return scale to "0" by turning the optical taring device 20.
- Set zero point accurately by means of the zero-point adjustment 33.
- Arrest balance and turn switch-over knob 22 to "I".

The weighing capacity is reduced by the tared value!

4.3. Weighing-in

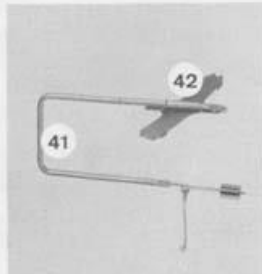
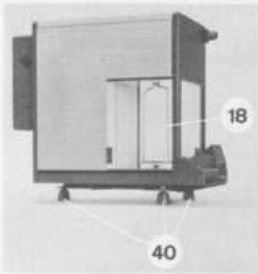
The filling guide 30 with a scale division of 0.01 g on the H20T and 0.1 g on the H10T enables the approximate weight to be read also when scale is in motion.



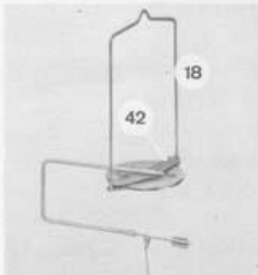
Shortly before the desired weight is reached, the weight is read on the optical scale 30. If the built-in weights are employed, they must be set prior to releasing the balance. (Set weight adjustment 26 on the H20T or 24 on the H10T to the next lower tenth of a gram value resp. gram value so that the full optical range is available for weighing-in.)

4.4. Weighing below the balance

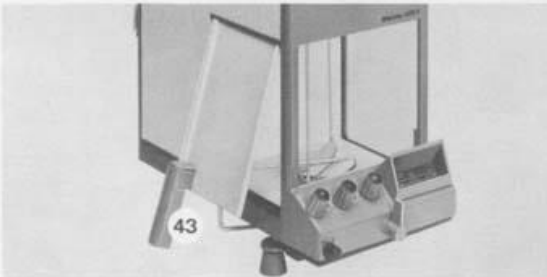
As special accessory, a device for weighings below the balance is available.



- Place balance on the three soles (40).
- Remove pan (19).
- Insert stirrup (41) in the holding spring (42).



- Clamp holding spring (42) on to the pan (19).
- Fit pan (19).

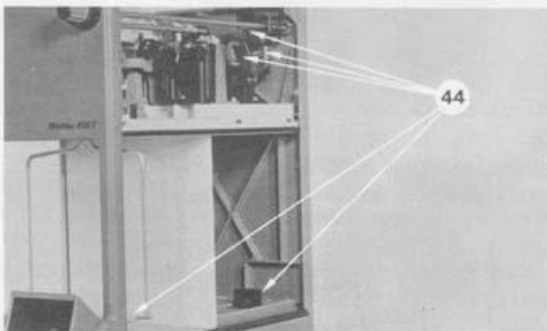


- Slip draft shield (43) into the upper window guide according figure and fold it down.
- Levelling balance (see page 4).
- The device for weighing below the balance may be compensated by the built-in weights and the optical tare compensation.

5. Cleaning and maintenance

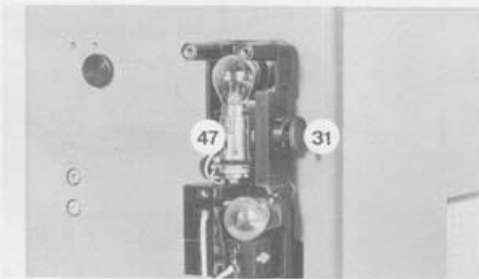
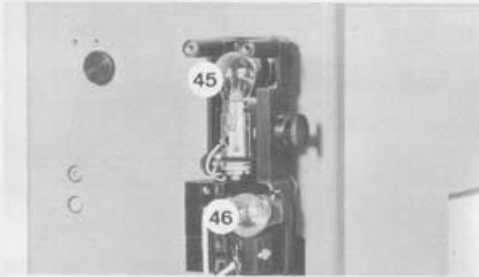
In normal operation the Mettler H20T and H10T requires no service for an extended space of time. Maintenance is for the customer limited to:

- Checking and, possibly, adjusting sensitivity (see page 5).
- Cleaning the housing, weighing chamber and mirrors.
- Replacing lamp.



5.1. Cleaning

- Lift off housing cover and right side-wall.
- Carefully clean the mirrors marked (44), using the enclosed piece of buckskin.



5.2. Replacing lamp

- Disconnect mains plug.
- Remove housing ① .
- Turn lamp ④ in anticlockwise direction and pull it out (note position of lamp filament).
- Fit new lamp ④ .

Order spare lamp.

Adjusting of image brightness after having changed the lamp :

- Height adjustment by means of knob ② .
- Lateral adjustment by bending lamp holder ④ .

6. Troubles and their causes

No scale image

No supply voltage
 Mains plug not connected
 Loose contacts in cable or mains switch
 Lamp defective

Poor scale image

Voltage selector (wire ③ in terminal strip) not adjusted to supply voltage
 Image definition poorly adjusted
 Image brightness inadequately adjusted
 Mirror soiled

Zero point cannot be set

Optical taring not at stop in the anticlockwise direction
 Level indicator not centered in circular marker
 Indicating elements not at zero
 Pan heavily soiled

Switch-over knob I-T cannot be adjusted

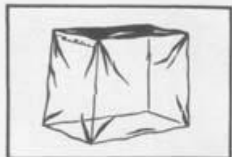
Weight adjusting knobs in intermediate positions

Scale moves jerkily or blocks

Soiled pan brake
 Pan brake jams
 Suspension or weights are touching somewhere

7. Accessories

Standard equipment comprises:



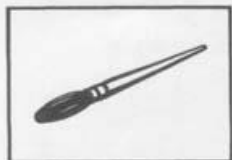
Protective cover

50560



Lamp

11698



Brush

70114



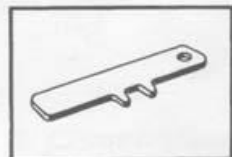
Buckskin

70109



Screw - driver

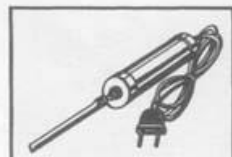
50279



Key

50599

Supplied upon order:



Vibro spatula

220 V

2250

220 V with Schuko plug

9741

110 V

9743

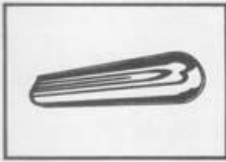
110 V with U. S. plug

9744



Weighing boat 10 g

4507



Weighing boat 20 g

4508



Glass dish, dia. 50 mm (2 inches) 10 g

4506



Glass dish, dia. 70 mm (2 3/4 inches) 20 g

2013



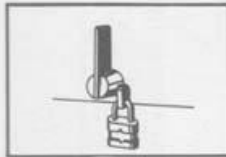
1 Set of dish hooks

1243



Stand

1526



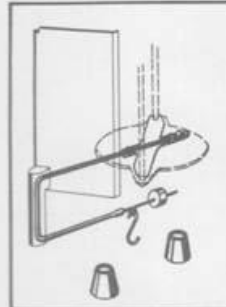
Locking device

4580



Damping unit

4597



Hanger for weighing below the balance

50330

8. Packing

For the transport, the arrestment of the balance takes place according to chapter 2.2., but in the reverse sequence.

To protect the balance, we recommend to leave it in its original package.

