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NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/4C/32

This is to certify that an approval has been granted by the Commission that the pattern of the

Mettler Weighing Instrument Model PK 2000

submitted by Watson Victor Ltd.,
669 Warrigal Road,
Chadstone, Victoria, 3148,

is suitable for use for trade.

The approval of the pattern is subject to review on or after 1/12/86.

All instruments purporting to comply with this approval shall be marked NSC No 6/4C/32.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 4/12/81.

- Mettler Model PK 2000 Class II self-indicating weighing instrument of capacity 2000 g by 0.1 g.

Technical Schedule No 6/4C/32 dated 24/12/81 describes the pattern.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4C/32

Pattern: Mettler Weighing Instrument Model PK 2000

Submittor: Watson Victor Limited,
669 Warrigal Road,
Chadstone, Victoria, 3148.

1. Description of Pattern

1.1

The pattern is a Class II electronic weighing instrument of capacity 2000 g by 0.1 g verification scale intervals (e), and 0.01 scale intervals (d). The balance operates on a pulse-compensation principle. A coil which is concentrically located in the air gap of a permanent magnet system is connected to the weighing pan so that a change in the load on the pan causes a vertical change of position of the coil. The coil is fed with current pulses, the amplitude of which are kept constant by a temperature-controlled diode and the pulse width of which varies according to the load applied. Any change in position of the weighing system brought about by a load variation is counteracted by adapting the duration of the current pulses to the unit. If the load mass increases, the pulse width is greater, and vice versa. There is therefore a closed loop control which ensures that the weighing system always assumes the same position. Figures 1, 2 and 3 illustrate the foregoing description.

A rectangle encloses and differentiates the right-hand digit (d).

1.2 Zero and Tare

Zero setting and taring are accomplished by means of a switch bar on the front of the instrument which sets zero to within $\pm 0,25e$. Zero is then indicated by + or - signs to within 0.25e. The removal of a tared load from the weighing instrument will result in the value of the tare rounded to the nearest 0.25e being displayed preceded by a minus sign.

1.3 Levelling

The instrument is provided with a level indicator and is supported on three feet, two of which are adjustable. Adjacent to the level indicator is a notice advising that the instrument is incorrect if not truly level.

1.4 Markings

The nameplate is marked with the following data:

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No 6/4C/32
Accuracy class	II
Maximum capacity in the form	Max 2000 g*
Minimum capacity in the form	Min 5 g*
Verification scale interval in the form	e = 0.1 g*
Scale interval in the form	d = 0.01 g*
Maximum subtractive tare	T = -2000 g

* These markings are repeated close to the reading face if the nameplate is not in that vicinity.

The instrument is also marked NOT FOR RETAIL COUNTER USE.

1.5 Sealing

Provision is made for sealing together the two halves of the casing by a lead and wire seal through two lugs on the side of the instrument. The method of sealing, if required by the Weights and Measures Authority, is shown in Figure 2.

TEST PROCEDURE No 6/4C/32

1. Accuracy Requirements

The maximum permissible errors are:

$\pm 0.5e$ for loads between 0 and 5000e; and

$\pm 1e$ for loads between 5001e and 20 000e.

2. Level Sensitivity

When the instrument is tilted so that the bubble in the level indicator moves 2 mm, and zero balance is reset in the tilted position, the instrument should satisfy the accuracy requirements as in 1. above.

3. Range of Indication

The mass indication should blank not more than 10 verification scale intervals above the marked maximum capacity, Max.

On power up there is an all 8's segment check before the instrument displays zero balance.

4. Tare

Place a mass equivalent to maximum capacity plus 11e on the load receptor and attempt to tare; this should not be possible.

Place masses equal to 80% of maximum capacity on the load receptor and operate the tare bar. Then place masses up to 20% of the maximum capacity on the load receptor. The indication of these masses should be within the above accuracy requirements.

5. Load Test

Test loads are to be applied to the instrument in not less than 5 approximately equal steps with the first load equal to the minimum capacity, increasing to maximum capacity, followed by decreasing loads of not less than 5 approximately equal steps.

FIGURE 6/4C/32 - 1



Mettler PK 2000

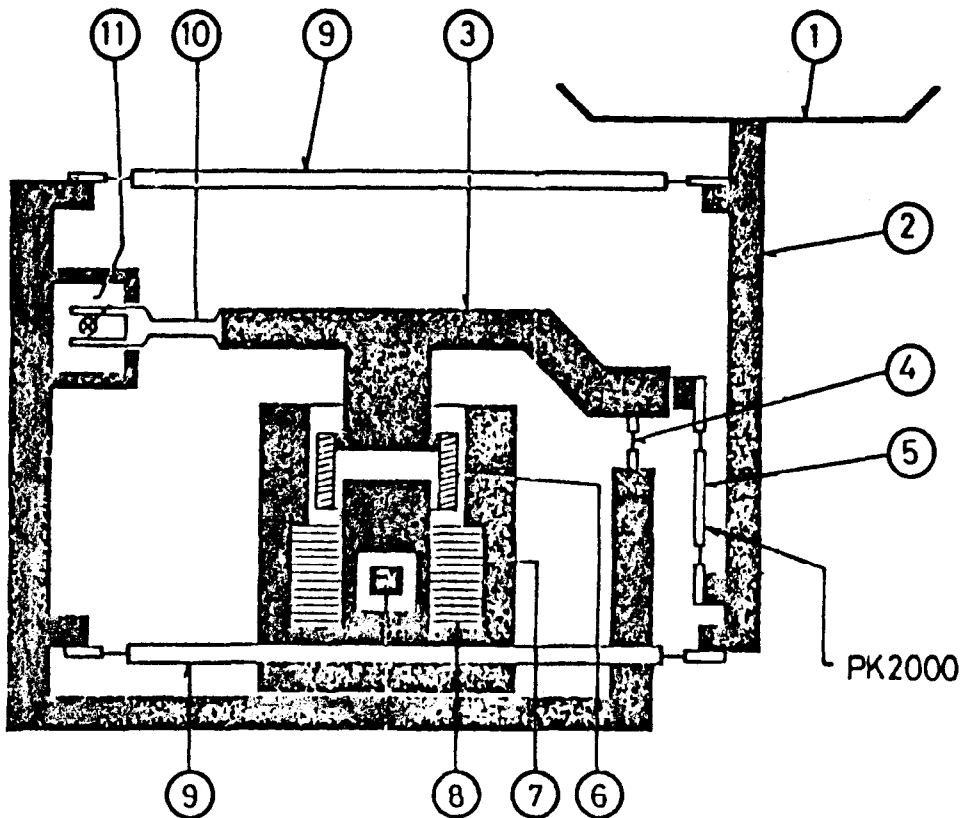
24/12/81

FIGURE 6/4C/32 - 2



Mettler PX 2000 - Showing sealing

FIGURE 6/4C/32 - 3



- 1 Pan
- 2 Hanger
- 3 Arm
- 4 Flexible bearings
- 5 Link
- 6 Compensation coil + power-stabilizing coil
- 7 Permanent magnet
- 8 Coil
- 9 Guide
- 10 Scanning vane
- 11 Opto-electronic scanner

Mettler PK 2000 - Schematic Diagram