CANCELLED

COMMONWEALTH OF AUSTRALIA

NATIONAL STANDARDS COMMISSION

Weights and Measures
(National Standards)
Act 1960-1966

Weights and Measures
(Patterns of Instruments)
Regulations

Certificate of Approval

CERTIFICATE NUMBER 6/4C/2

This Certificate cancels Certificate No 6/4C/2 dated 16th February, 1970. *

In respect of the pattern of

Mettler P1200 Self-indicating Counter Machine and Variants.

Submitted by: Watson Victor Ltd.,
95-99 Epping Road,
North Ryde,
New South Wales. 2113.

Manufactured by: Mettler Instrument AG,
CH-8606 Greifensee,
Zurich,
Switzerland.

This is to certify that the pattern and variants of the instrument illustrated and described in this Certificate have been examined by the National Standards Commission under the provisions of the abovementioned Regulations and have been approved as being suitable for use for trade.

The pattern and some variants were approved on 10th February, 1970, and further variants were approved on 9th December, 1970 (see Figure 15).

*NOTE: Figures 6/4C/2 - 1 to 6 of the previous issue form part of the Certificate and must be retained.

Cont'd over

Approval was granted on condition that all instruments made in conformity with the pattern and variants:

1. are appropriately marked NSC No 6/4C/2; and

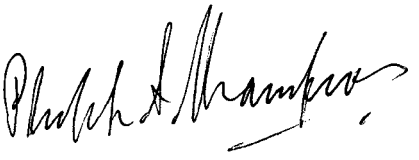
2. comply with the General Specifications for Weighing and Measuring Instruments to be Used for Trade.

This Certificate comprises:

Pages 1 to 6 dated 16th December, 1970.
Figures 6/4C/2 - 1 to 6 dated 16th February, 1970.
Figures 6/4C/2 - 7 to 16 dated 16th December, 1970.

Date of issue 16th December, 1970.

Signed



A person authorised by the Commission to sign Certificates under the abovementioned Regulations.

DESCRIPTION OF PATTERN

The pattern is a top-loading, multi-range, optical-projection, self-indicating counter machine of 1300 grammes capacity (see Figure 1), known as the Mettler P1200 Self-indicating Counter Machine, and comprising the components tabulated in Column 4 of Figure 15.

DESCRIPTION OF VARIANTS

The components tabulated in Columns 5 to 19 of Figure 15 make up variants known as Mettler Self-indicating Counter Machines with model numbers as indicated. The capacities of the variants are tabulated in Figure 16.

DESCRIPTION OF COMPONENTS

1. Weighing Mechanism

The weighing mechanism (see Figures 2, 3, 5 and 7) consists of a magnetically damped, unequal-arm beam with adjustable major and minor balance weights fixed on the long arm. The load receptor is supported on a vertical pillar which is located at the top on the beam load knife-edge and at the bottom by a link parallel to the beam. All the knife-edges in the beam and parallel link are supported on bearings consisting of two plates mounted side by side and at an angle to each other to form a vee. Each plate is self-aligning, being mounted on two balls within the bearing housing. Hardened-point bearings are provided to limit lateral movement of the knife-edges. A sensitivity adjustment is fitted to the beam and an enclosed balance box is provided beneath the load receptor.

2. Optical-projection System

A transparent graticule is attached to the end of the long arm of the beam and has 1000 graduations for a full scale deflection of 17° (see Figures 2 and 7). An optical-projection system projects the weight scale on to a ground-glass screen with a fixed indicator located in an inclined panel at the top front of the cabinet (see Figures 4, 6 and 14).

3. Range-changing Mechanism

The instrument is provided with a range-changing mechanism controlled by a knob on the front panel (see Figure 4) or on the side of the cabinet (see Figure 14). The knob is geared to a shaft with cams which raise or lower unit weights on rocker arms (see Figure 2). The unit weights are added to or removed from a cradle projecting from the vertical pillar which supports the load receptor, in various combinations to give the required ranges. The value of the range selected is shown in an aperture in the panel adjacent to the optical scale so that the total weight is indicated directly (see Figures 4 and 14).

4. Single Tare-spring Mechanism

The taring mechanism is controlled by a knob on the front panel. The tare load is applied by a temperature-stable spring (see Figure 2) attached to the top of the vertical pillar and to an adjustable bracket which is moved by a leadscrew driven from the knob. An indicator operated by the tare knob moves over a scale ungraduated except at zero (see Figure 4).

A zero adjustment, consisting of a serrated wheel accessible through a slot in a cover at the base of the instrument, moves the tare spring bracket through a fine screw attached to the leadscrew (see Figures 2, 3 and 7).

5. Opposed Tare Springs

The taring mechanism (see Figures 11 and 12) consists of two temperature-stable springs attached to opposite ends of the vertical pillar and to a common adjustable bracket which is moved by a leadscrew driven from the control knob (see Figure 13).

6. Tare Springs in Parallel

The tare load is applied by two temperature-stable springs (see Figures 5 and 7), both attached to the top of the vertical pillar and to an adjustable bracket which is moved by a leadscrew driven

from the control knob on the side of the cabinet (see Figure 5). An indicator operated by the tare knob moves over a scale ungraduated except at zero (see Figure 6).

7. Compensating Spring

A horizontal temperature-stable spring is attached to the base of the vertical pillar, the effect of which is to make the instrument independent of the force of gravity (see Figure 7).

8. Crossed Levels

A level indicator in the form of two tubular spirit levels at right angles is fixed to the top corner of the front of the machine (see Figure 4).

9. Automatic Level-error Corrector

The automatic level-error corrector (see Figure 8) compensates for small errors in longitudinal levelling of the cabinet. Correction is achieved by mounting the lens of the optical-projection system on a balanced lever parallel to the main lever so that changes in the position of the cabinet do not affect the relationship between the projecting lens and the graticule. Movement of the error-corrector lever is magnetically damped.

A second device (see Figure 9) having a near-vertical axis carries a shutter at the end of an extended arm and is positioned so as to interrupt the light beam of the projection system if the level error in the longitudinal direction exceeds the compensating range. The motion of the shutter is also magnetically damped.

10. Circular Level

The level indication consists of a circular spirit level mounted in the control panel at the front of the instrument (see Figure 10).

11. Sealed Cover and Stamping Plug

The mechanism is protected by a cover which is sealed by a wire

passing through the cover latch and a lug fitted to the frame and secured by a lead seal. A stamping plug is provided on the side of the front panel (see Figure 1).

12. Lever Locking Device

A knob-operated locking device which moves the vertical pillar up against a fixed stop is accessible beneath the cabinet.

GENERAL NOTES

The pattern and variants may be fitted with a filling scale, a comparator scale and an interpolation device, as well as the main weight scale. These additional scales are reading aids to the main scale and are not suitable for use for trade.

FC

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4C/2

CHANGE No 1

The approval of the patterns of the

Mettler Weighing Instrument Models P1200 and Others

given in Certificate No 6/4C/2 dated 16 December 1970

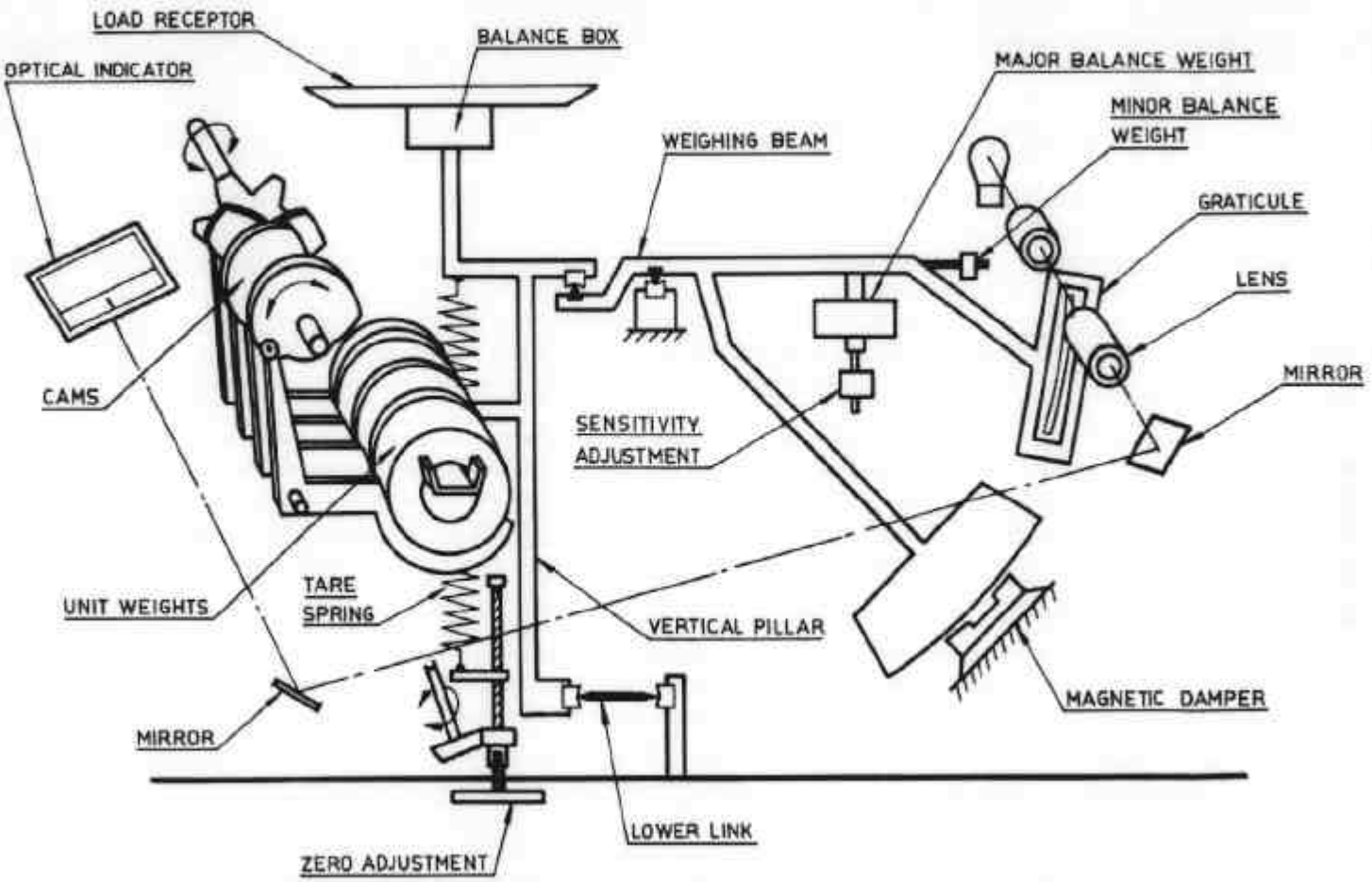
is varied to include Models P5N, P6N, P10N and P11N, which are the same as Models P5, P6, P10 and P11 respectively. The suffix N is now used to indicate models which are fitted with the automatic level-error corrector.

4/2/77

FIGURE 6/4C/2 - 1

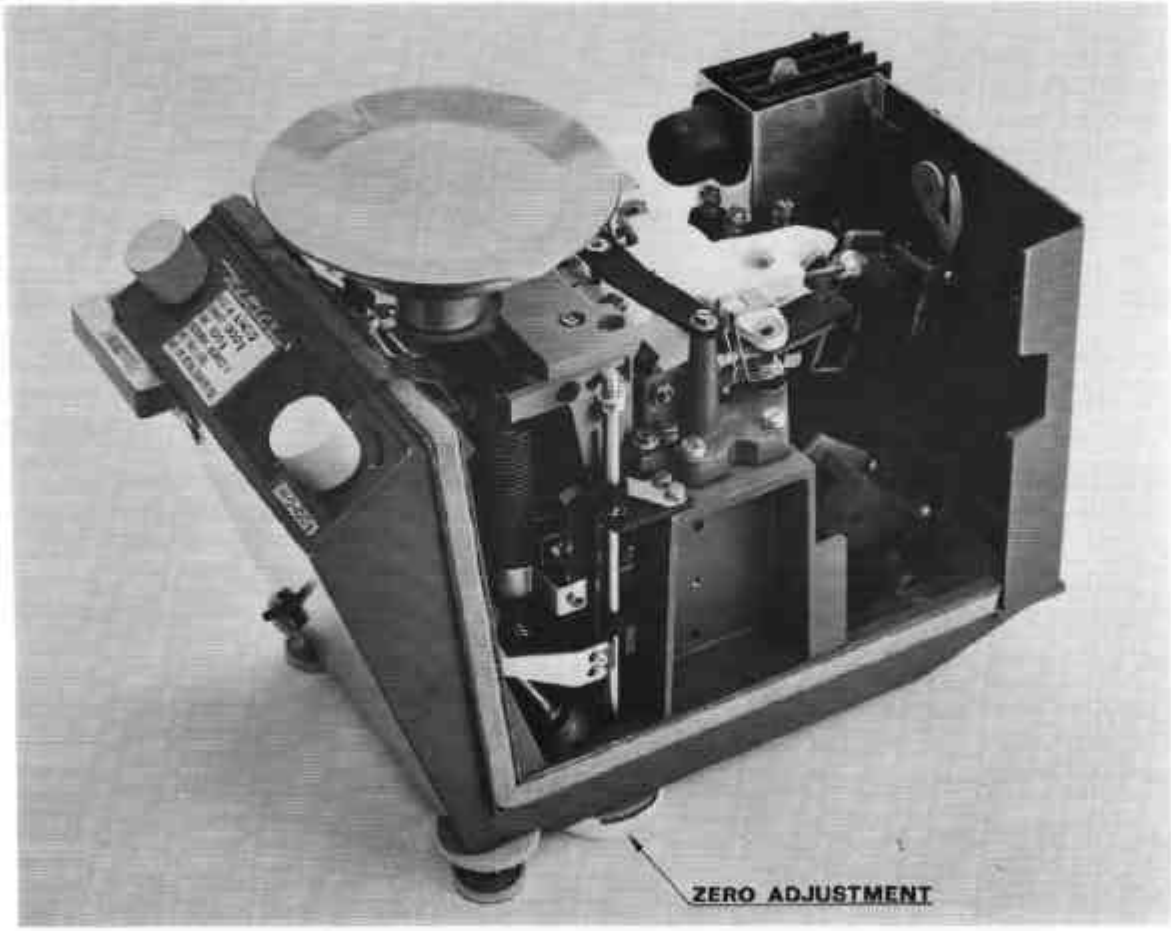
Mettler P1200 Self-indicating Counter Machine

FIGURE 6/4C/2 - 2



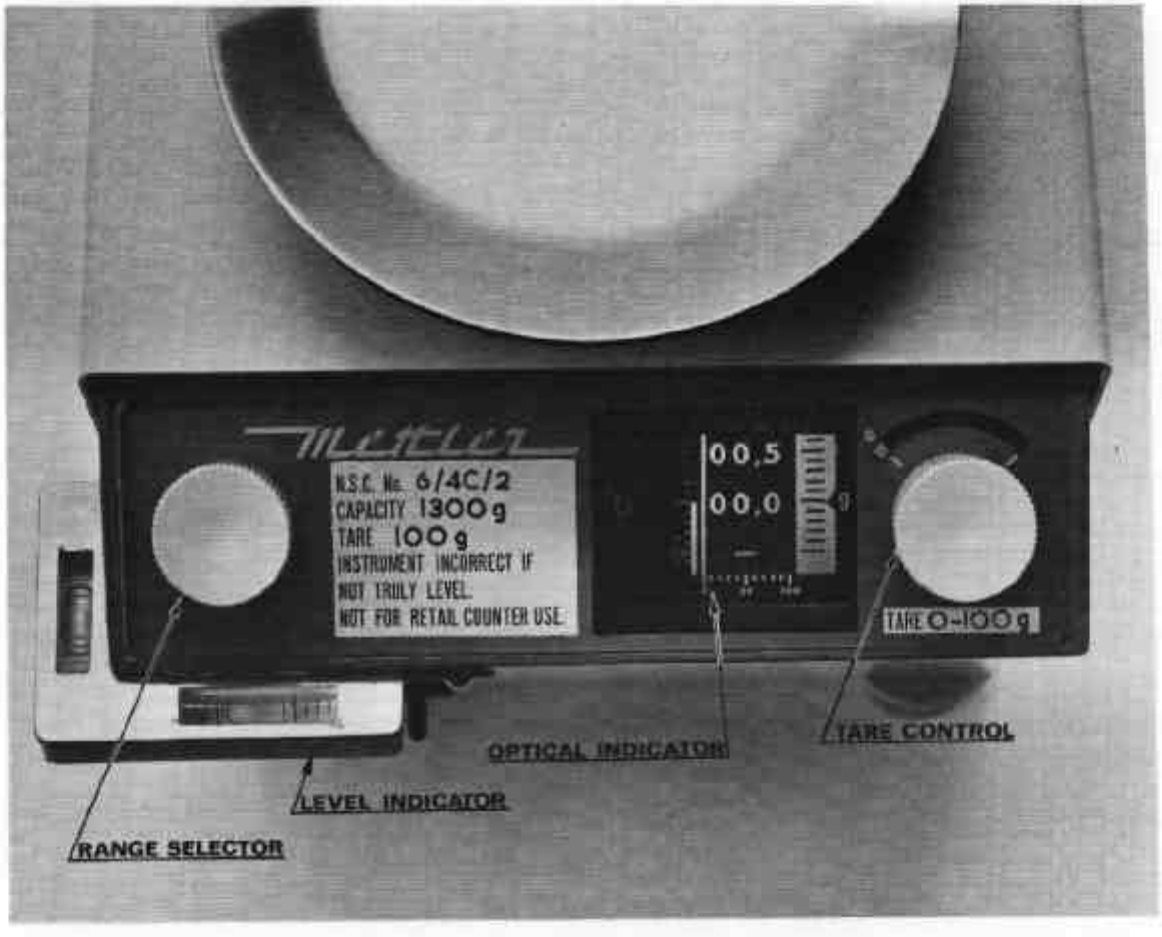
Mettler P1200 Lever Mechanism and Optical Projection System

FIGURE 6/4C/2 - 3



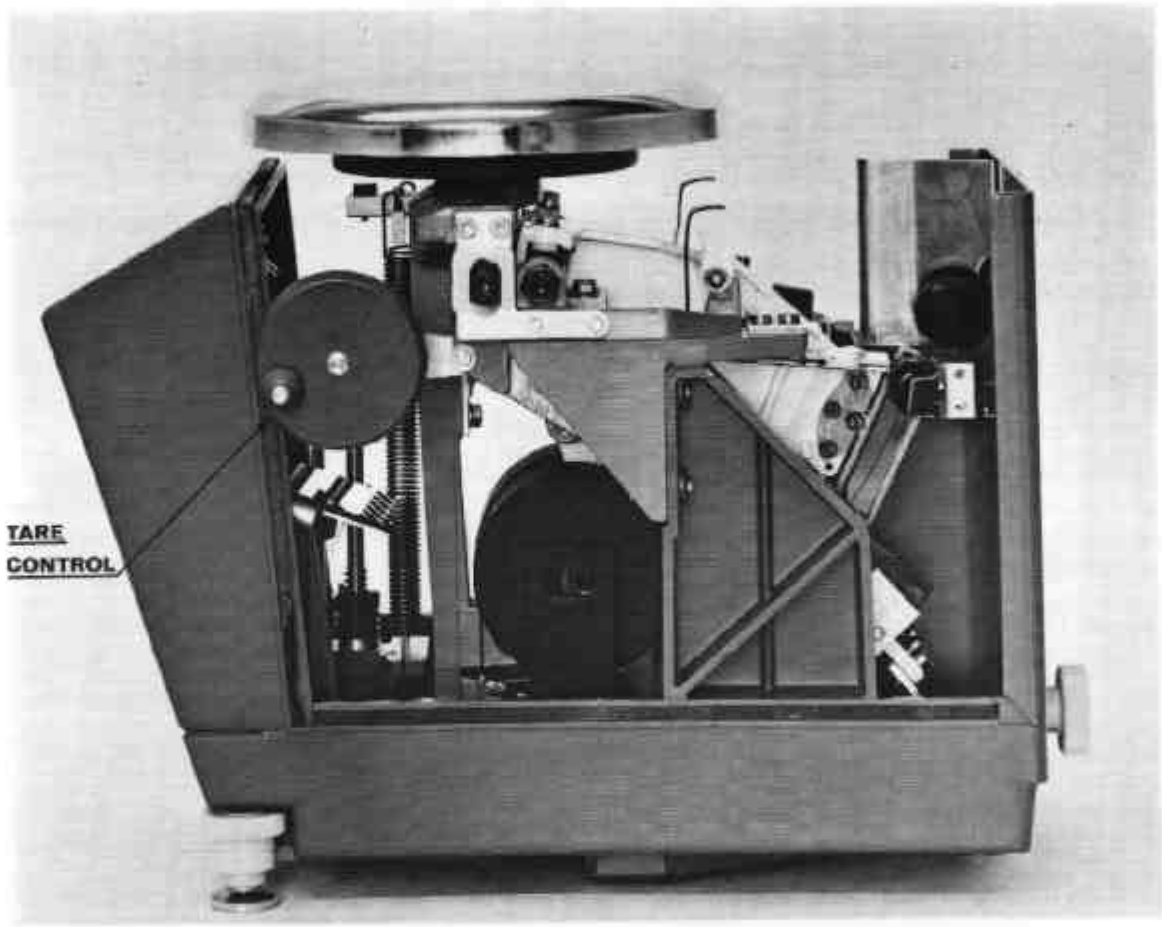
Mettler P1200 Lever Mechanism and Optical Projection System

FIGURE 6/4C/2 - 4



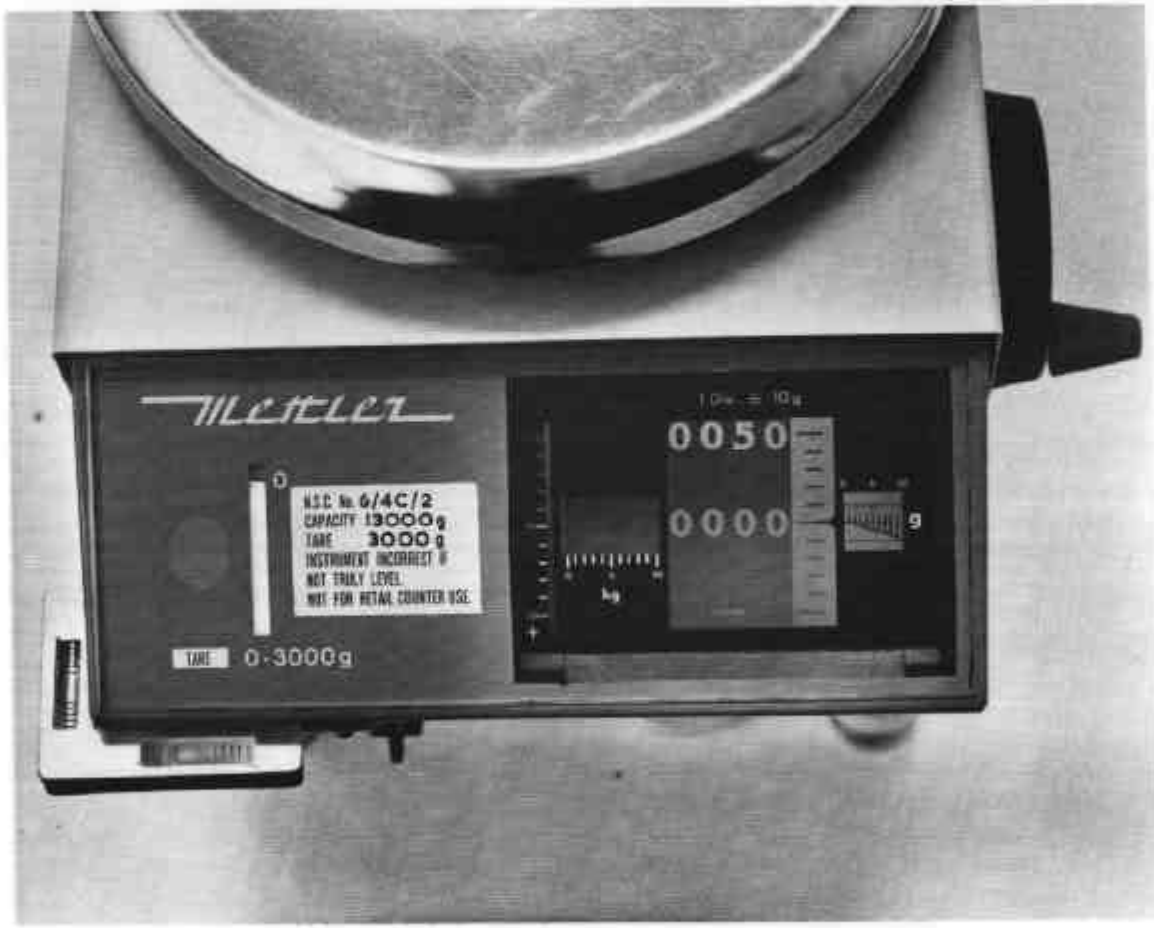
Mettler P1200 Control Panel and Optical Indicator

FIGURE 6/4C/2 - 5



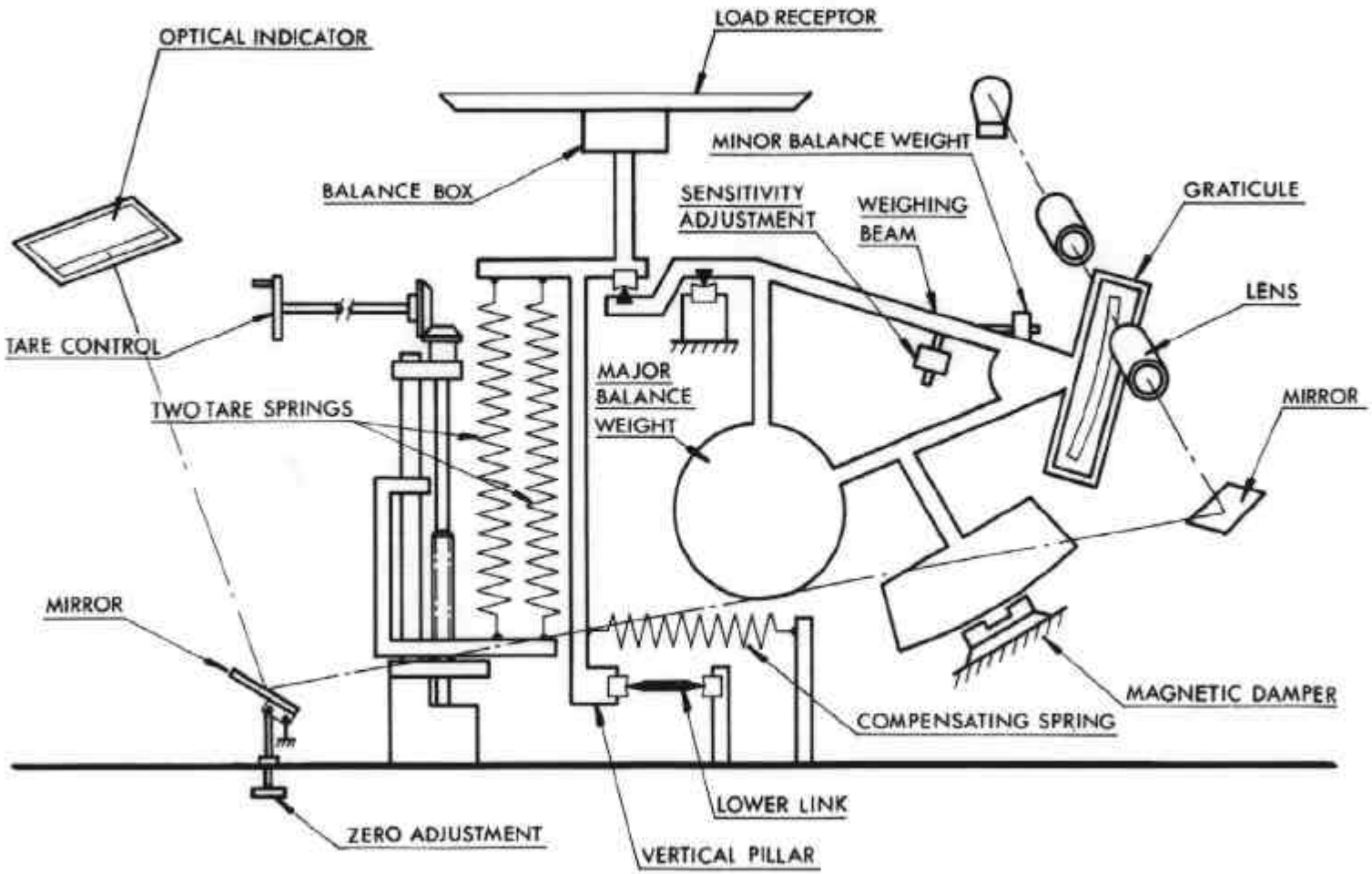
Mettler P10 Lever Mechanism and Optical Projection System

FIGURE 6/4C/2 - 6



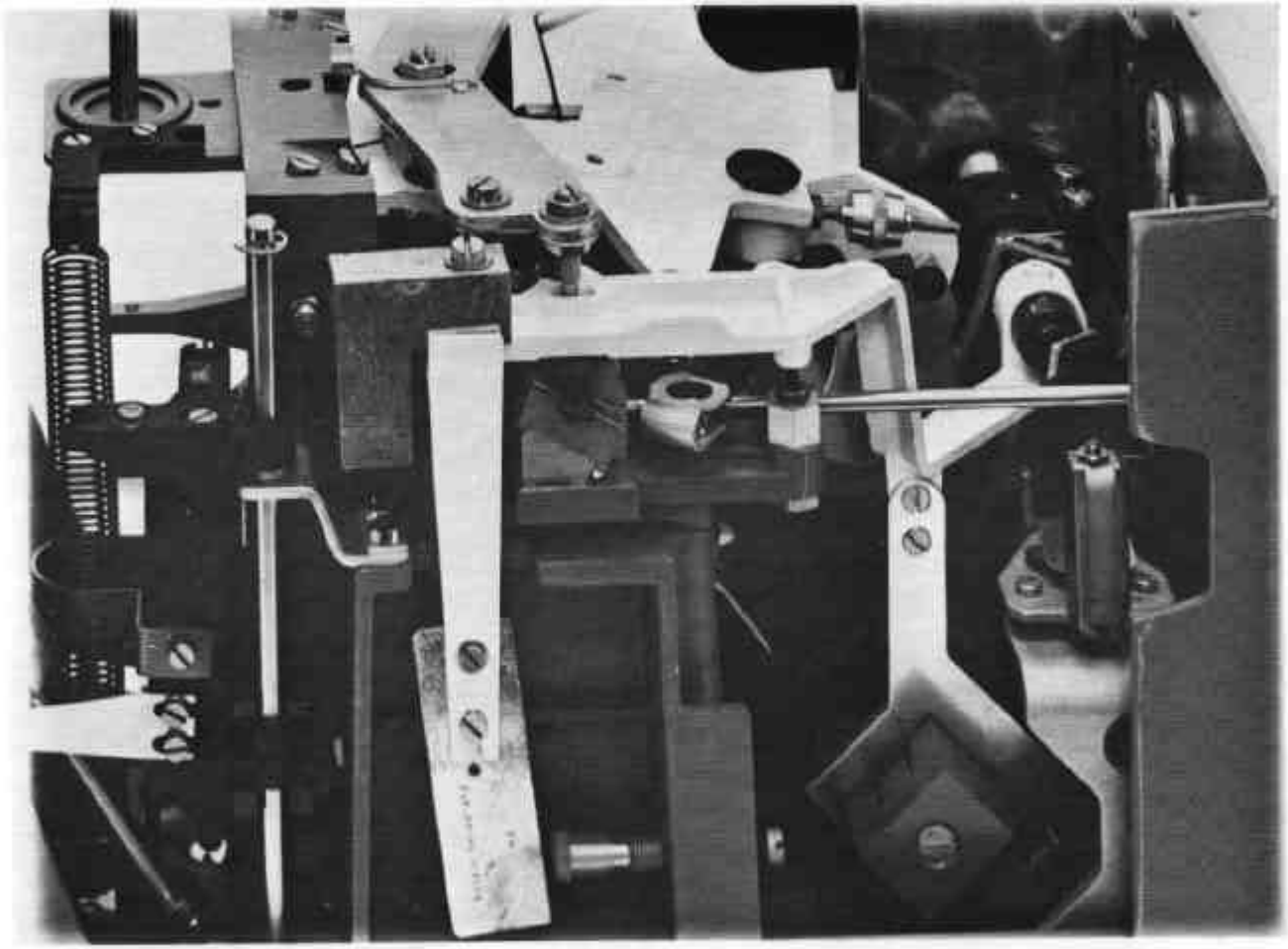
Mettler P10 Control Panel and Optical Indicator

FIGURE 6/4C/2 - 7

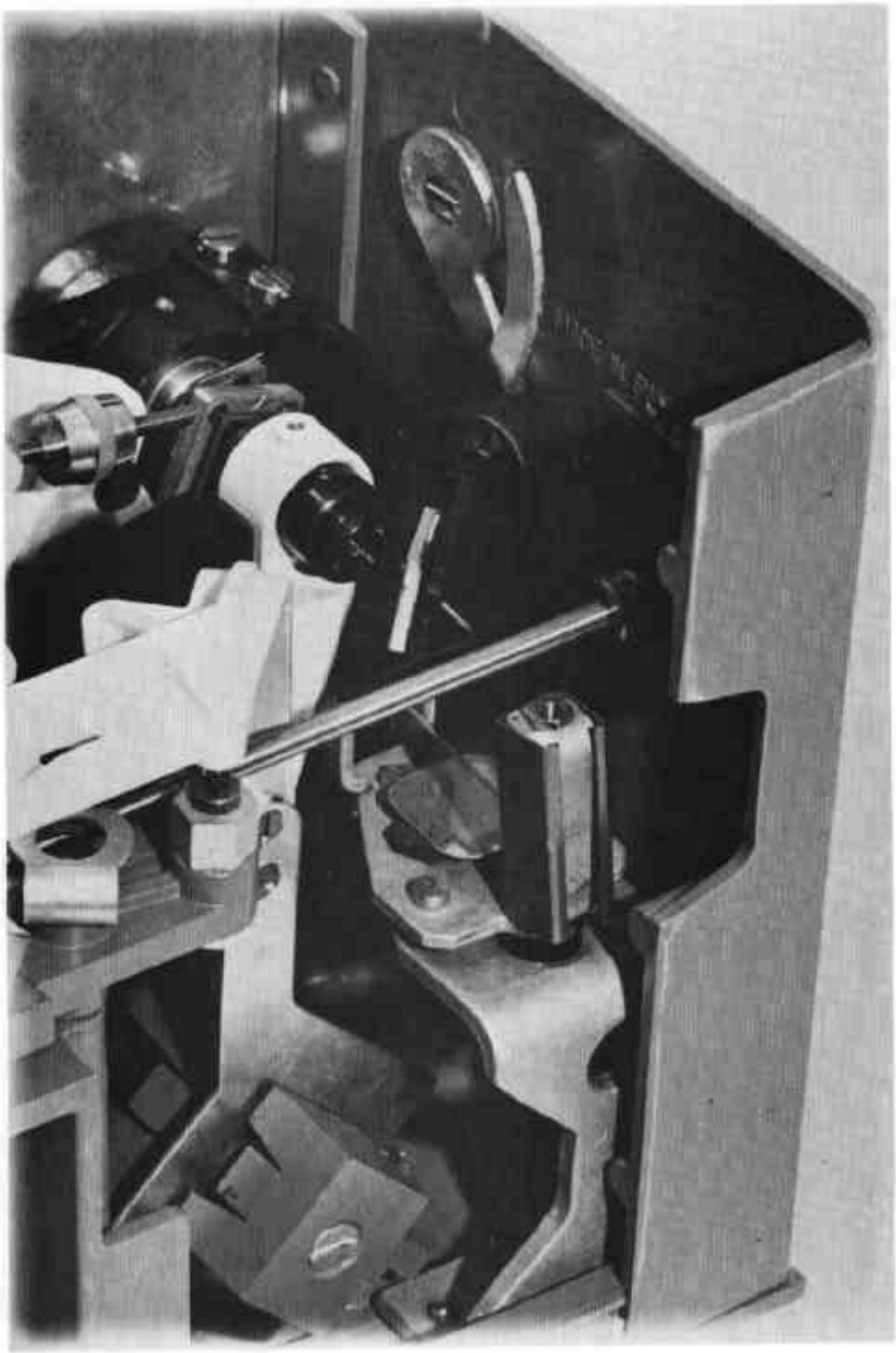


Mettler P10 Lever Mechanism and Optical-projection System

FIGURE 6/4C/2 - 8

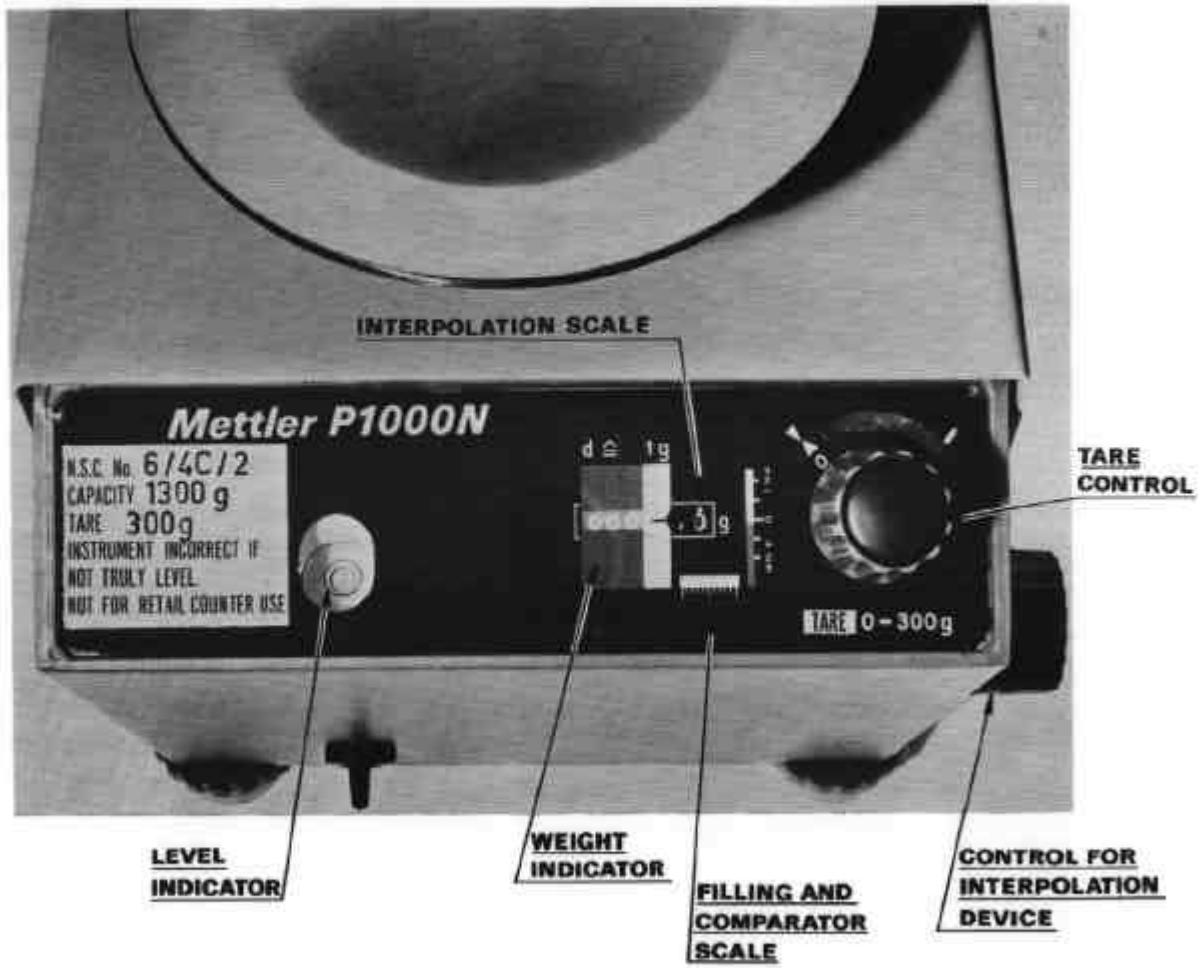


Mettler P1000N — Automatic Level-error Corrector



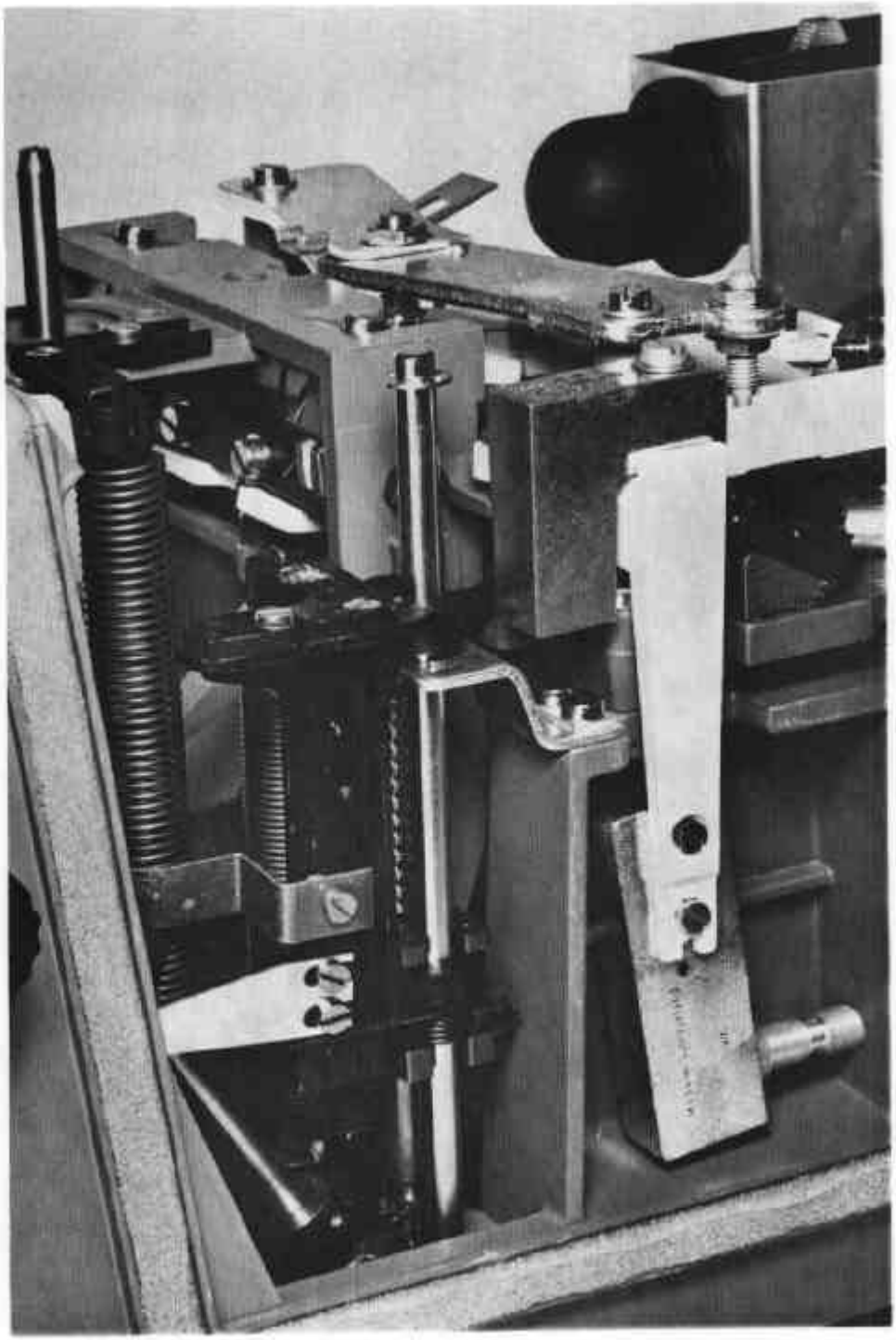
Mettler P1000N — Level-operated Light Cut-off
16/12/70

FIGURE 6/4C/2 - 10



Mettler P1000N — Control Panel and Optical Indicator

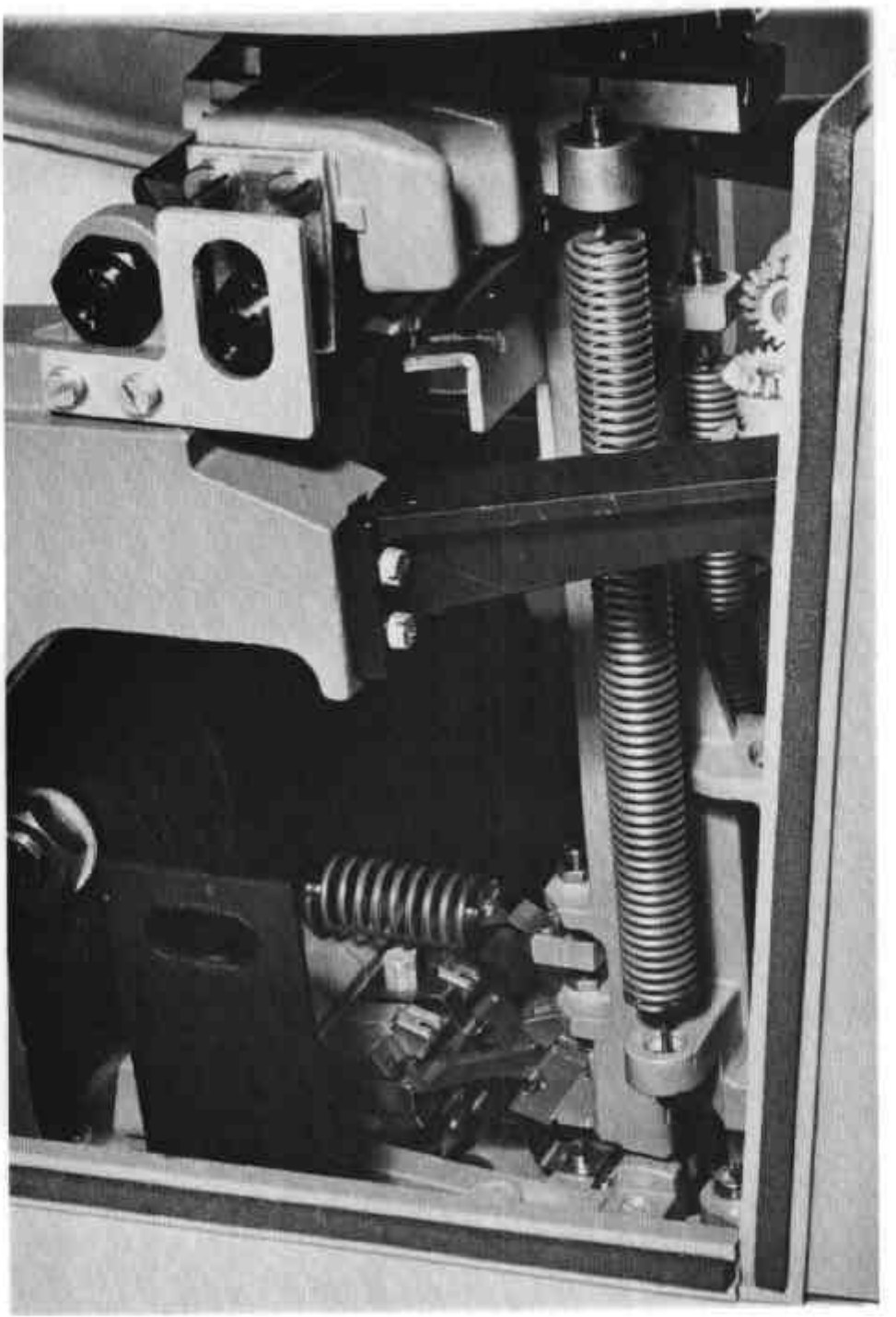
FIGURE 6/4C/2 - 11



Mettler P1000N — Opposed Tare Springs

16/12/70

FIGURE 6/4C/2 - 12

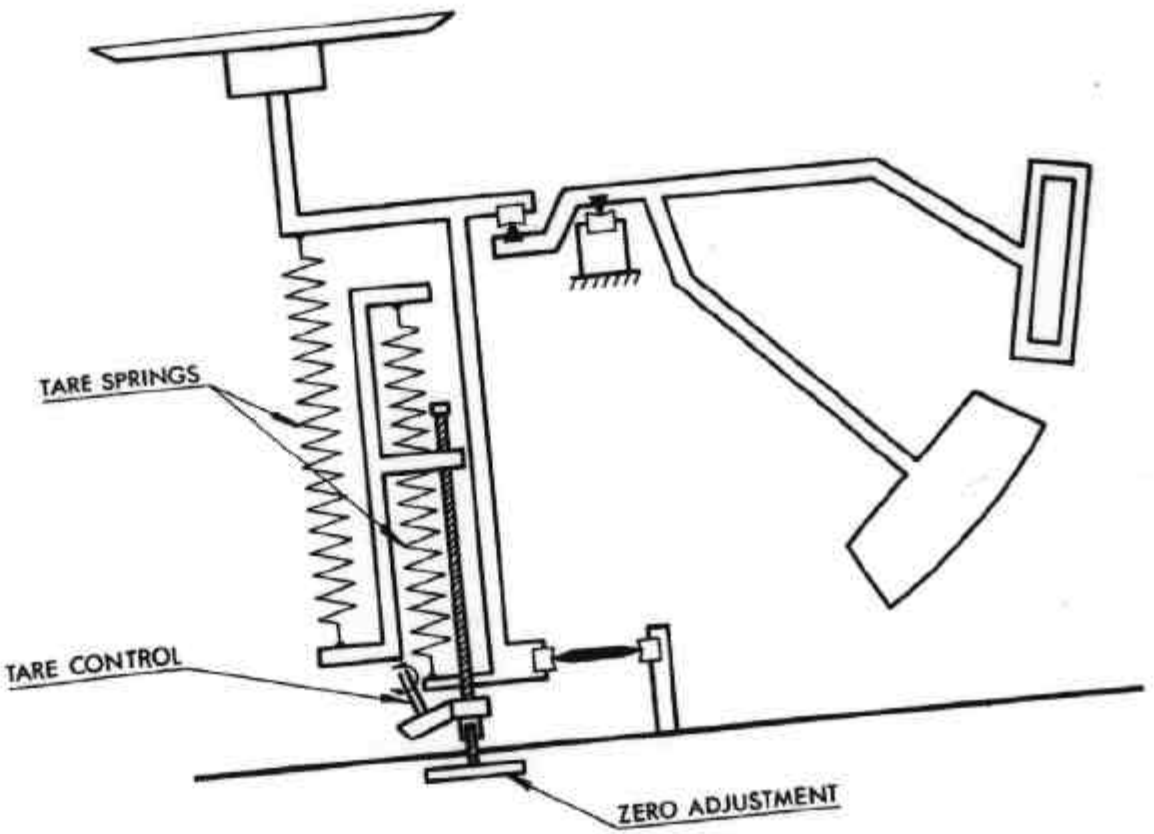


Mettler P10 — Opposed Tare Springs

16/12/70

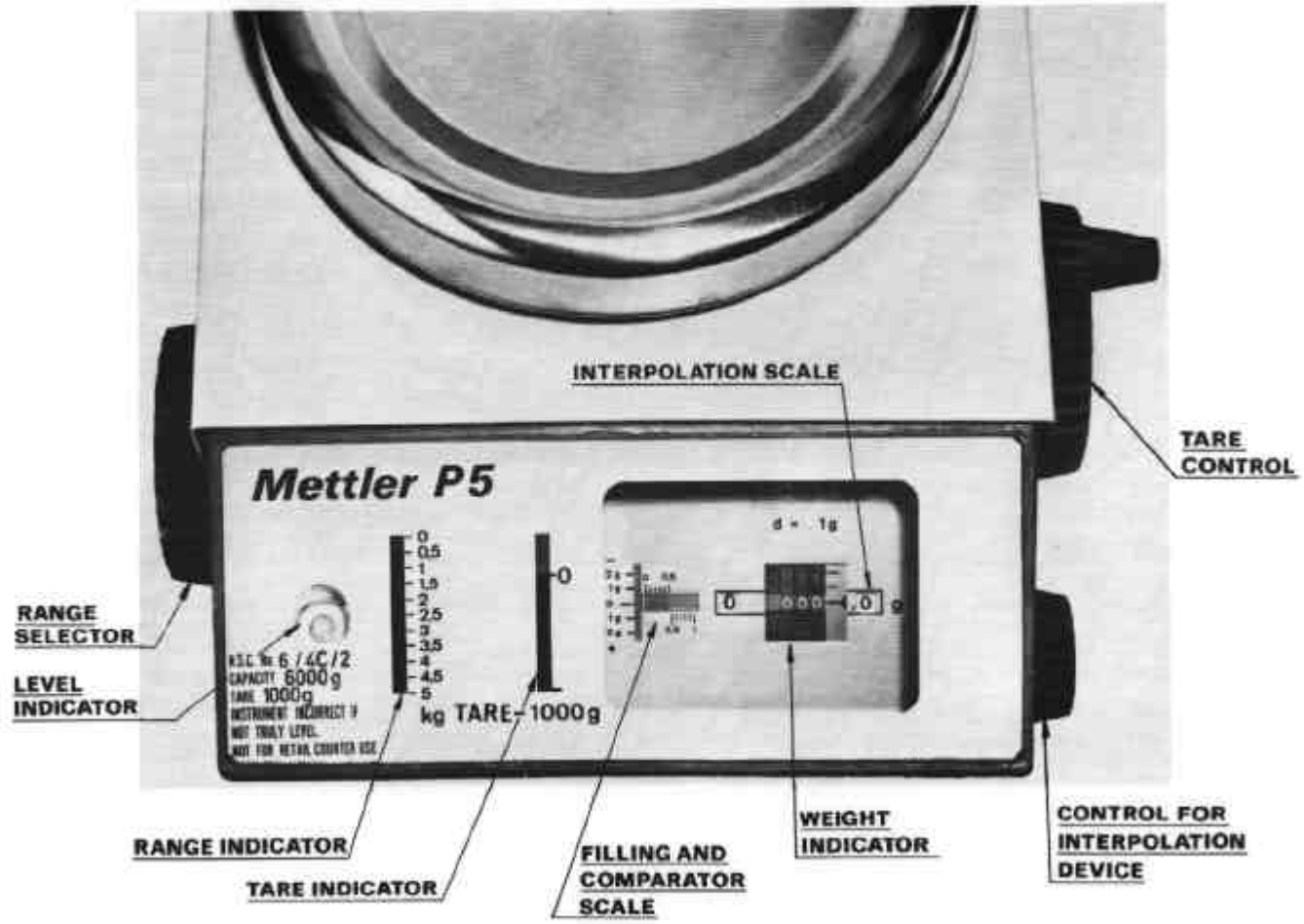
FIGURE 6/4C/2 - 13

16/12/70



Arrangement of Opposed Tare Springs

FIGURE 6/4C/2 - 14



Mettler P5 — Control Panel and Optical Indicator

16/12/70

FIGURE 6/4C/2 - 15

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	COMPONENTS	DATE APPROVED	PATTERN P1200	VARIANTS														
				P1200	P1200N	P1000	P1000N	P2000	P2000N	P120	P120N	P160	P160N	P10	P10	P6	P5	P11
1	Unequal-arm beam weighing mechanism	10 FEB 70	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	Optical-projection system	10 FEB 70	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	Range-changing mechanism	10 FEB 70	*	*	*		*	*	*	*	*	*	*			*	*	*
4	Single tare-spring (Figure 2)	10 FEB 70	*			A				A						*	*	
5	Opposed tare springs (Figure 13)	9 DEC 70		*	*	A	*	*	*	A	*	*	*		*			*
6	Tare springs in parallel (Figure 7)	10 FEB 70												*				
7	Compensating spring (Figure 7)	10 FEB 70												*	*	*	*	*
8	Crossed levels	10 FEB 70	*	*		*		*		*		*		*				
9	Automatic level-error corrector	9 DEC 70			*		*		*		*		*		*	*	*	*
10	Circular level	9 DEC 70			*		*		*		*		*		*	*	*	*
11	Sealed cover and stamping plug	10 FEB 70	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	Lever locking device	10 FEB 70	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* - indicates required component

A - indicates alternative components, one of which is required

Compatibility Table for Components Described in this Certificate

FIGURE 6/4C/2 - 16

16/12/70

Model Numbers	Total Capacity	Dial Capacity	Tare Capacity	Unit-weight Capacity	Number of Unit Weights	Graduation Size
P1200 and P1200N	1300 g	100 g	100 g	100 g	11	0.1 g
P1000 and P1000N	1300 g	1000 g	300 g	-	-	1 g
P2000 and P2000N	2500 g	1000 g	500 g	1000 g	1	1 g
P120 and P120N	130 g	10 g	10 g	10 g	11	0.01 g
P160 and P160N	170 g	10 g	10 g	10 g	15	0.01 g
P10	13 kg	10 kg	3 kg	-	-	10 g
P6	7.5 kg	6 kg	1.5 kg	-	-	10 g
P5	6 kg	500 g	1 kg	500 g	9	1 g
P11	11 kg	500 g	1 kg	(500 g (5 kg	9) 1)	1 g

Capacities of Pattern and Variants