



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Cancellation
Certificate of Approval
No 6/10B/32C

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that the approval for use for trade granted in respect of the

Ultra-Hawke Model 6000 Weighing Instrument

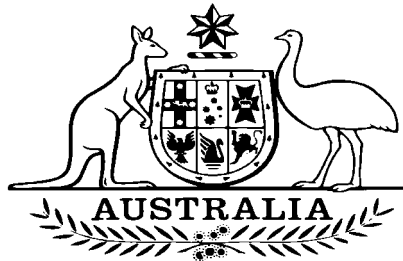
submitted by Ultra Scales Pty Ltd
 33 Judge Street
 Sunshine VIC 3020

has been cancelled in respect of new instruments as from 1 April 2011.

Signed by a person authorised by the Chief Metrologist
to exercise his powers under Regulation 60 of the
National Measurement Regulations 1999.

A handwritten signature in black ink, consisting of a series of loops and flourishes, positioned to the right of the signature text.

National Standards Commission



Certificate of Approval

No 6/10B/32C

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

Ultra-Hawke Model 6000 Weighing Instrument

submitted by Ultra Scales Pty Ltd
33 Judge Street
Sunshine VIC 3020.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This Certificate is issued upon completion of a review of NSC approval No 6/10B/32B.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 November 2002, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 6/10B/32C and only by persons authorised by the submittor.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with the Commission's Document 106.

The pattern and variants as approved herein or with substitute load cells and/or indicator and in other capacities, shall comply with General Certificate No 6B/0.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

DESCRIPTIVE ADVICE

Pattern: approved 21 October 1997

- An Ultra-Hawke model 6000 self-indicating weighing instrument of 200 000 kg maximum capacity.

Variants: approved 21 October 1997

1. With a non-self-indicating headwork.
2. With tare bars.
3. With a load cell and digital indicator.
4. With two lever systems installed adjacent to each other.

Technical Schedule No 6/10B/32C describes the pattern and variants 1 to 4.

FILING ADVICE

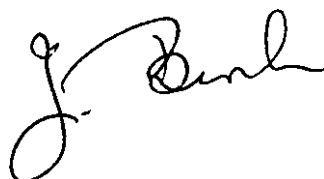
The documentation for this approval comprises:

Certificate of Approval No 6/10B/32C dated 13 January 1997

Technical Schedule No 6/10B/32C dated 13 January 1997 (incl. Test Procedure)

Figures 1 to 6 dated 13 January 1997

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



TECHNICAL SCHEDULE No 6/10B/32C

Pattern: Ultra-Hawke Model 6000 Weighing Instrument.

Submittor: Ultra Scales Pty Ltd
33 Judge Street
Sunshine VIC 3020.

1. Description of Pattern

An Ultra-Hawke model 6000 self-indicating weighing instrument of 200 000 kg maximum capacity.

1.1 Basework

The model 6000 consists of a lever system with the headwork connected by a transfer lever. Additional transfer levers may be required to connect the headwork if remote from the basework.

1.1.1 Lever System

The lever system, approved for use with up to 10 000 verification scale intervals, comprises two or more main levers and a number of transfer levers. The levers are cast or fabricated and of first, second or third order in Y, T or straight form. The various levers are connected by simple or compound vertical links. Figure 1 shows one arrangement.

1.1.2 Platform Support

The platform is supported in either of the following ways:

- (a) Directly supported through bearings on the main lever load knife-edges in which case the lever fulcrum knife-edges are located on bearings mounted in links suspended from either floor-mounted pedestals (Figure 2) or from a steel frame surrounding the basework (Figure 3); or
- (b) Mounted on the main lever knife-edges through a ball-bearing support assembly in which case the lever fulcrum knife-edges are located on bearings mounted in floor-mounted pedestals (Figure 4).

1.2 Headwork

Instruments are approved for use with up to 6 000 verification scale intervals when used with self-indicating headworks having dials of up to 600 scale intervals full scale deflection.

The headwork consists of a unit-weight cabinet and a dial housing (Figure 5) which may have a double-sided indicator. The headwork may require intermediate levers and may have up to 9 unit-weights which are deposited either automatically via a geared motor or via a cam-driven arrangement using a handle on the front. A tool-operated zero adjustment is provided.

1.3 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.4 Sealing Provision

Provision is made for the calibration adjustments in the indicator to be sealed.

1.5 Markings

Instruments carry the following markings, in the form shown at right:

Manufacturer's mark, or name written in full	
Indication of accuracy class	
Maximum capacity	<i>Max</i> kg or t *
Minimum capacity	<i>Min</i> kg or t *
Verification scale interval	<i>e</i> = kg or t *
Serial number of the instrument	
Pattern approval mark for the instrument	NSC No 6/10B/32C
Pattern approval mark for the load cells	NSC No S.... #
Pattern approval mark for the indicator	NSC No S.... #

* These markings shall also be shown near each reading face if they are not already located there.

These markings are applicable to variants 3 and 4 only.

2. Description of Variants

2.1 Variant 1

With the self-indicating headwork replaced by a non-self-indicating headwork approved for use with up to 10 000 verification scale intervals. The final transfer lever is connected through a pullrod direct to the full capacity steelyard or alternatively through an intermediate lever in the headwork cabinet (Figure 6).

2.2 Variant 2

With graduated or ungraduated tare bars fitted to the self-indicating headwork, in which case only a single dial and indicator may be used and on the same side of the headwork cabinet as the tare bars, locking lever and unit-weight controls.

2.3 Variant 3

With a Gedge Systems model GS1650Mk3 digital indicator (as described in the documentation of NSC approval No S193B) and a Kelba model KA-1000-C3 load cell (as described in the documentation of NSC approval No S155B).

The load cell may be fitted directly in the pullrod from the nose-end knife-edge of the basework transfer lever or installed in the nose-end of each pair of main levers. Alternatively, the load cell may be connected to a suitably shortened headwork lever.

If a self-indicating (mechanical) headwork is also fitted, only one method of mass indication is in use at any time; the other indicator is rendered inoperative.

2.4 Variant 4

With two model 6000 lever systems installed adjacent to each other, either in the same or in separate weighbridge pits.

The links supporting the lever fulcrum knife-edges are suspended from floor-mounted pedestals and/or from a steel frame surrounding the basework.

Each lever system is connected to its own load cell.

TEST PROCEDURE

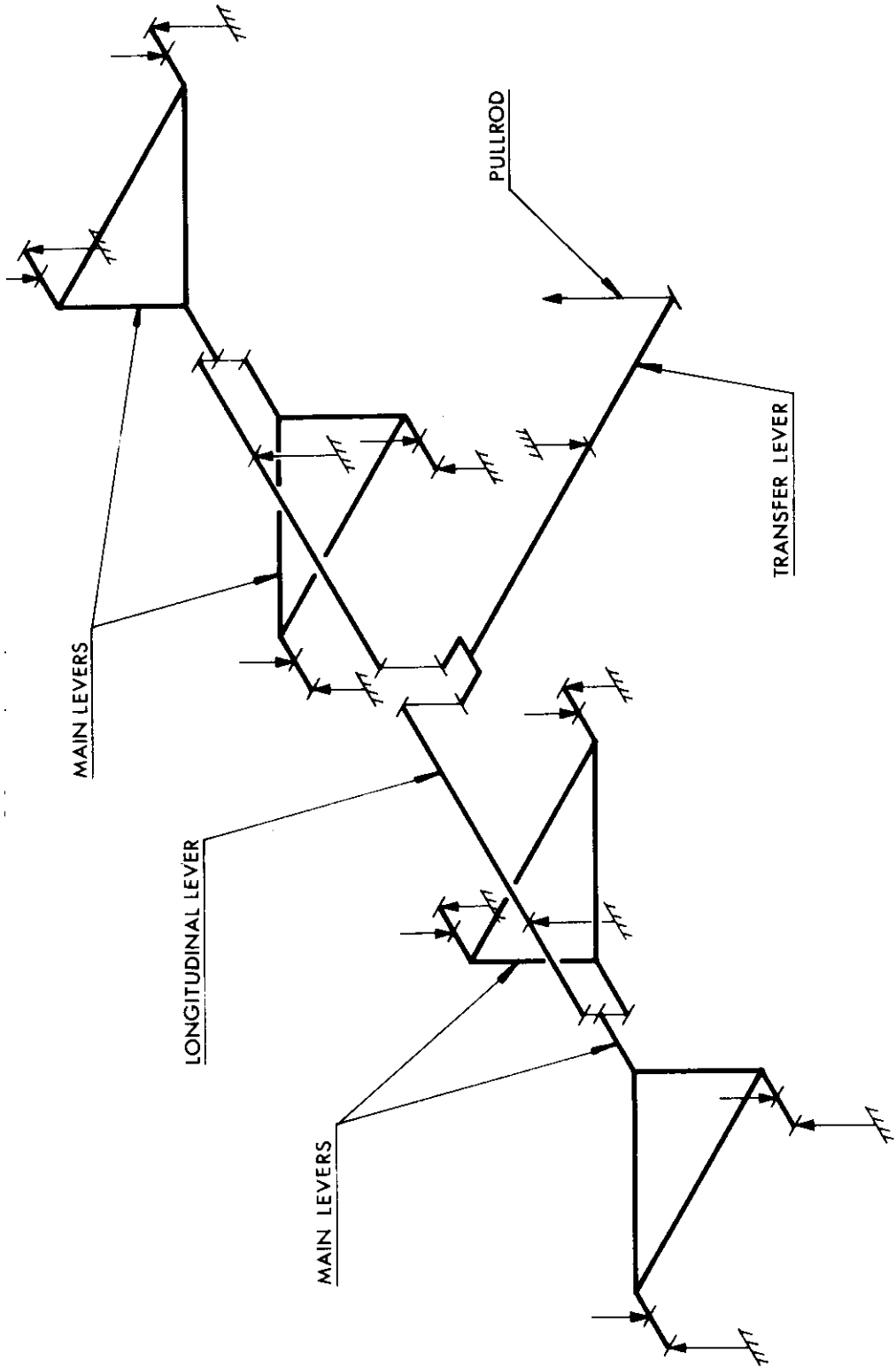
Instruments should be tested in conjunction with any tests specified in the approval documentation for the indicator used (where applicable), and in accordance with any relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

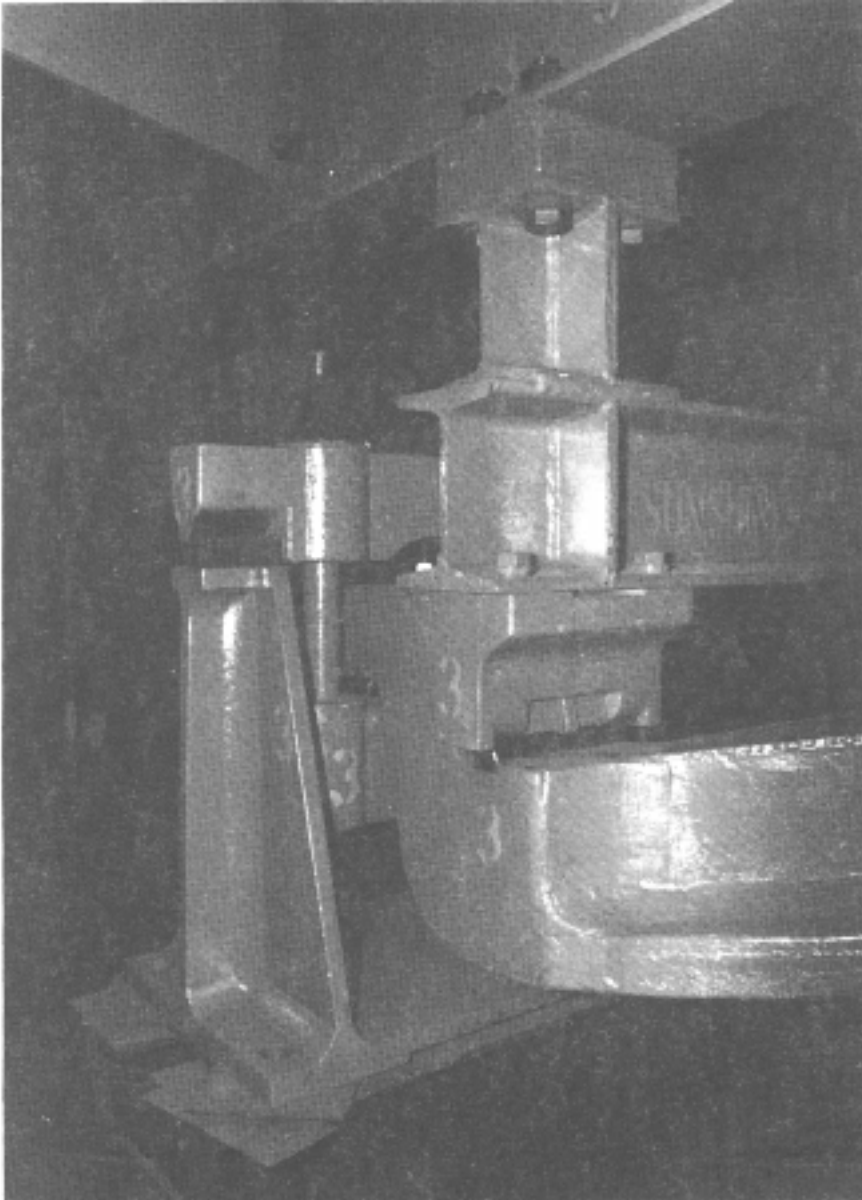
- $\pm 0.5 e$ for loads $0 \leq m \leq 500$;
- $\pm 1.0 e$ for loads $500 < m \leq 2\,000$; and
- $\pm 1.5 e$ for loads $2\,000 < m \leq 10\,000$.

FIGURE 6/10B/32C - 1



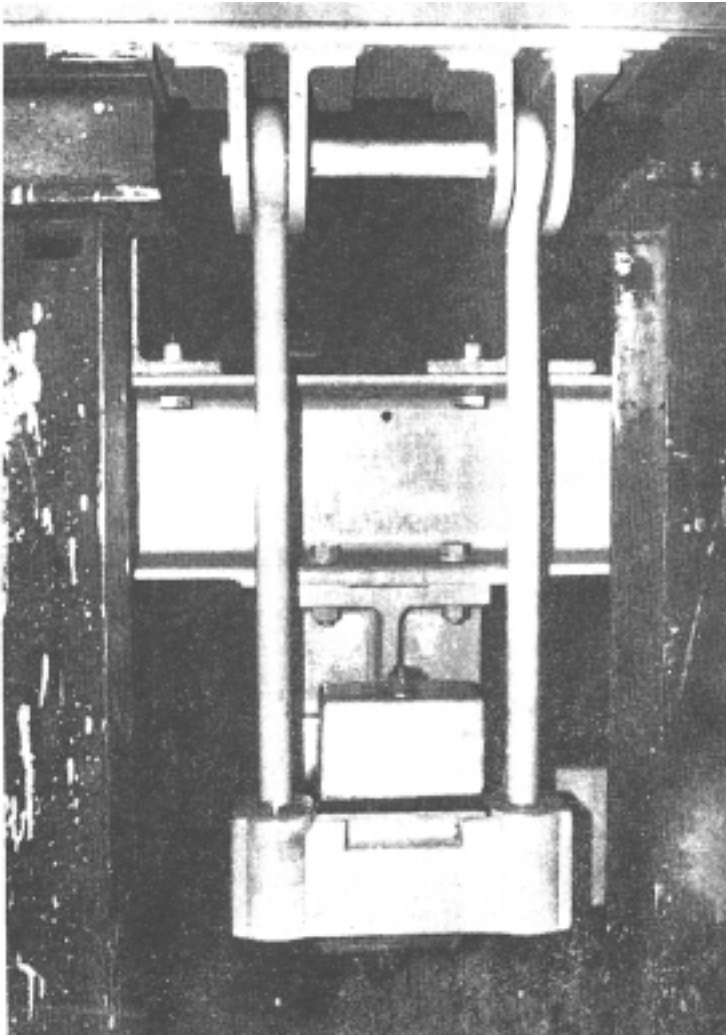
Ultra-Hawke Model 6000 Seven-level Weighing Instrument

FIGURE 6/10B/32C - 2



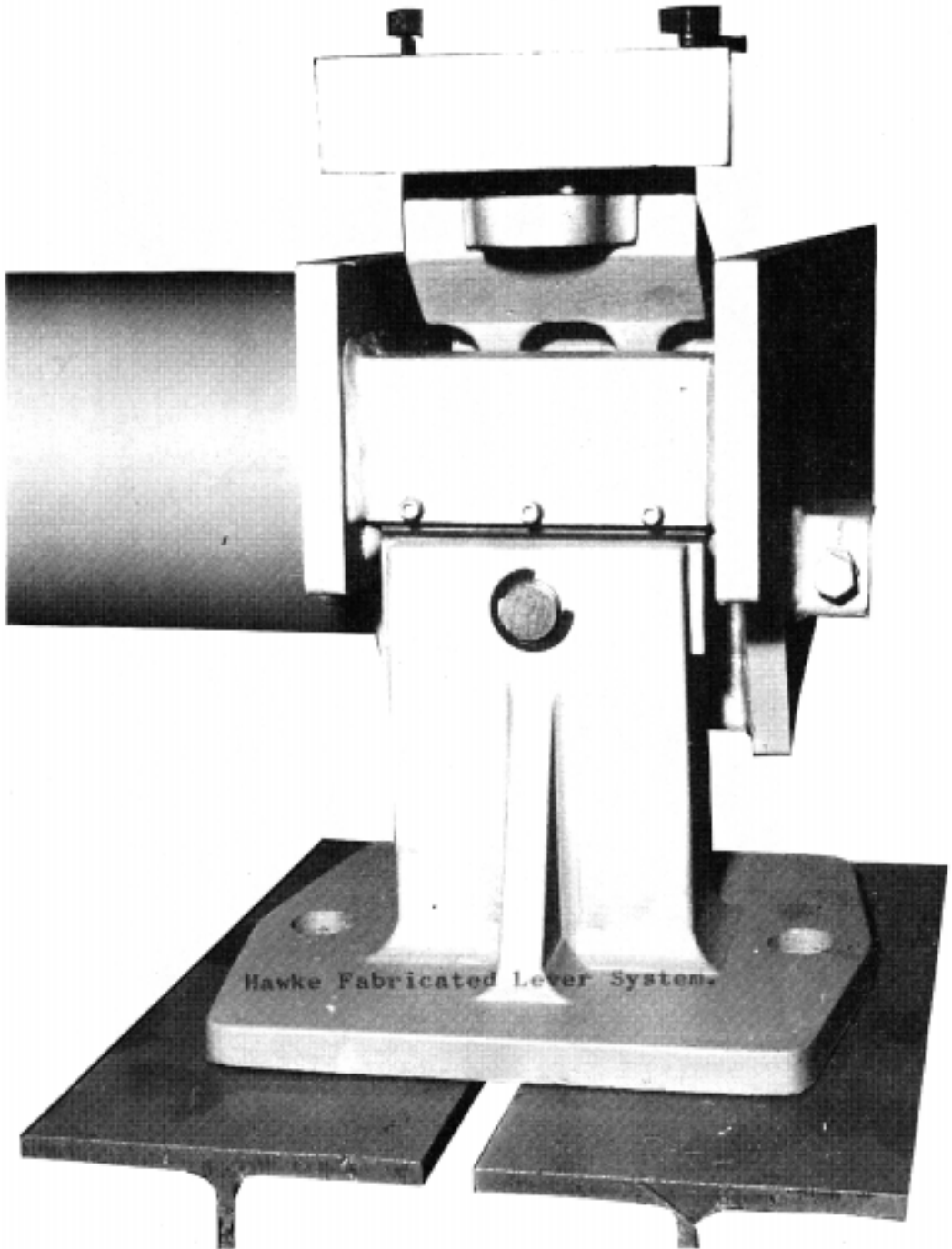
Main Lever Load Knife-edge Pedestal Support

FIGURE 6/10B/32C - 3



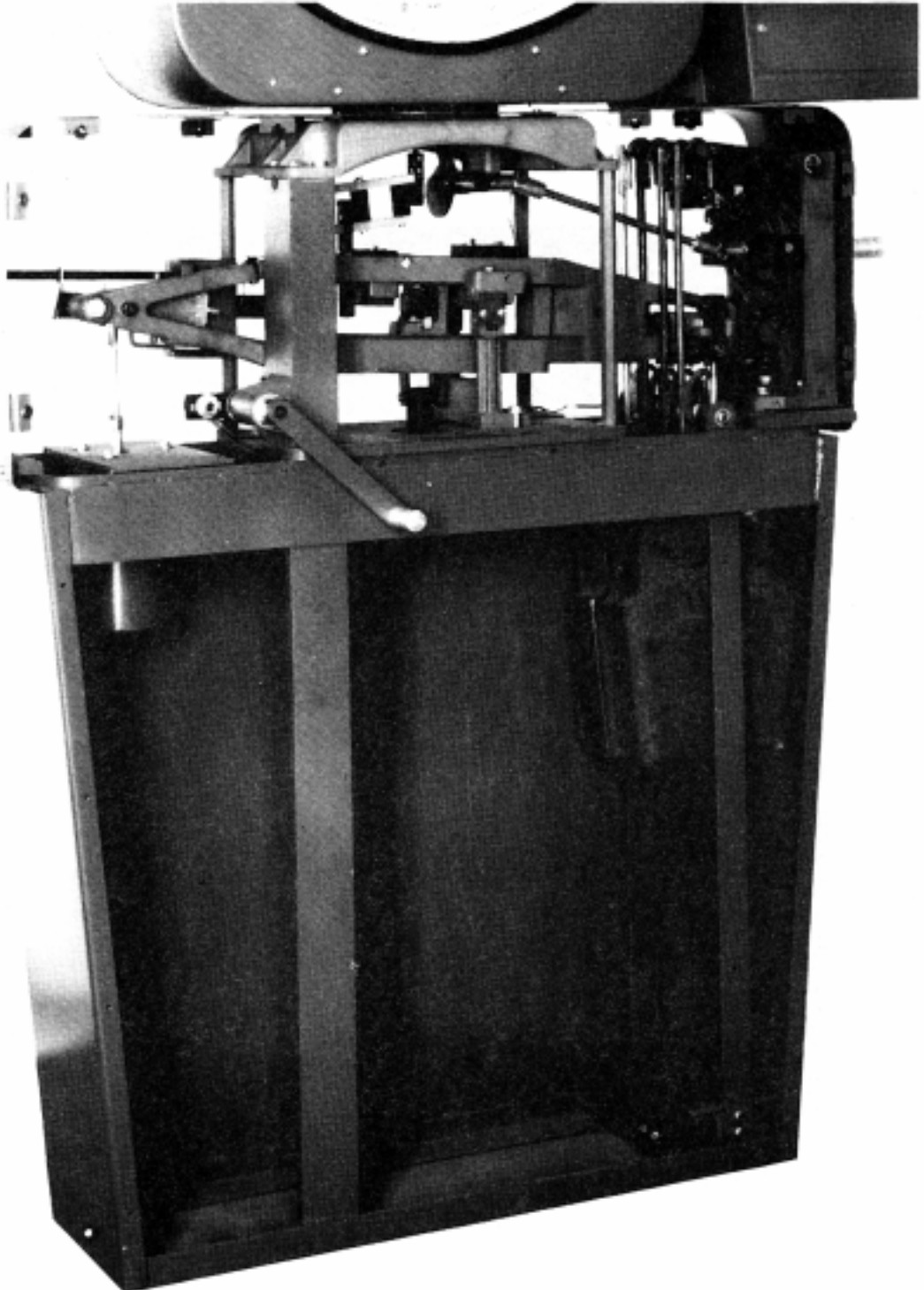
Main Lever Fulcrum Knife-edge Suspension Support

FIGURE 6/10B/32C - 4



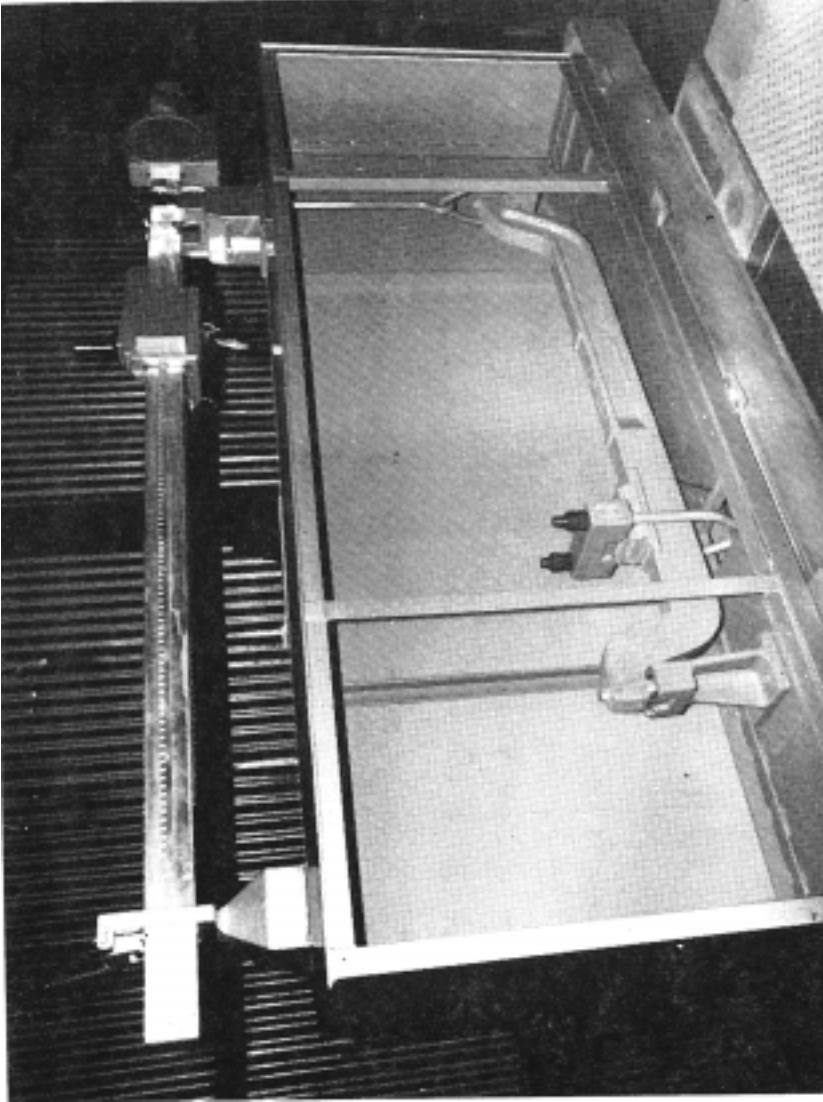
Ball-bearing Support Unit and Pedestal

FIGURE 6/10B/32C - 5



Lower Headwork With Manual Unit-weight Mechanism

FIGURE 6/10B/32C - 6



Non-self-indicating Headwork