NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/10B/40

This is to certify than an approval has been granted that the pattern and variants of the

Mercury Model WB-LT Weighbridge

submitted by Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
Thebarton SA 5031

are suitable for use for trade.

Conditions of Approval

This approval is subject to review on or after 30/9/85.

Instruments purporting to comply with this approval shall be marked NSC No 6/10B/40.

This approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.

The number of scale intervals applicable to the weighing instrument shall be no greater than the number of verification scale intervals approved for the basework, or the load cell, or the headwork, whichever is the smallest.

Signed

Executive Director

Descriptive Advice

Pattern: approved 25/9/80

. A self-indicating weighbridge of up to 50 t maximum capacity and approved for use with a maximum of 3500 scale intervals.

Variants: approved 25/9/80

1. The load cell and indicator of the pattern, with any Commission-approved Mercury basework.

2. With a subtractive taring device.

Technical Schedule No 6/10B/40 describes the pattern and variants 1 and 2.

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Variant: approved 9/3/81

3. The load cell and indicator with a four-section single-platform basework.

Technical Schedule No 6/10B/40 Variation No 1 describes variant 3.

Variant: approved 21/6/85

4. With a non-self-indicating headwork using a steelyard of between 20 t and 70 t capacity.

Note: Interim Certificate No 6/10B/40 Variation No 2 dated 24/6/85 incorrectly listed the maximum capacity as 60 t.

Technical Schedule No 6/10B/40 Variation No 2 describes variant 4.

Filing Advice

Certificate of Approval No 6/10B/40 dated 27/3/81 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/10B/40 dated 3/9/85
Technical Schedule No 6/10B/40 dated 10/10/80
Technical Schedule No 6/10B/40 Variation No 1 dated 27/3/81
Technical Schedule No 6/10B/40 Variation No 2 dated 3/9/85 (including Test Procedure)
Test Procedure No 6/10B/40 dated 10/10/80 (and amended by Notification of Change No 1 dated 9/3/81)
Figures 1 to 6 dated 10/10/80
Figure 7 dated 27/3/81
Figure 8 dated 3/9/85

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/10B/40

Pattern: Mercury WB-LT Weighbridge

Submittor: Mercury Scale Co. Pty Ltd,
32 Dew Street,
Thebarton, South Australia, 5031.

1. Description of Pattern

A self-indicating weighbridge comprising a three lever basework of up to 50 t maximum capacity with an HBM (GDR) Model Z3H3 load cell of 500 kg capacity and a Mercury Model 479 indicator.

1.1 Basework

Three lever basework of up to 50 t maximum capacity with a maximum of 3500 scale intervals (Figures 1, 2 and 3).

1.2 Load Cell

HBM (GDR) Model Z3H3 tension load cell of 500 kg capacity mounted as shown in Figure 3.

1.2.1 Range

Maximum number of verification scale intervals	3500
Minimum dead load	130 kg
Minimum measuring range	200 kg
Maximum measuring range	500 kg

1.2.2 Marking

The following is the minimum of data required to be marked on the load cell:

Manufacturer's name
Model number
Serial number
Output in the form ..... mV/V
Maximum capacity

1.2.3 Interconnection

The length of cable from the load cell to the connecting plug is 2 m $\pm$ 0,1 m and from the connecting plug to the indicator not greater than 10,0 m provided remote sensor leads are used.

1.3 Indicator

Mercury Model 479 (Figures 4 and 5) capable of displaying a maximum 3500 scale intervals.

1.3.1 Zero

A tool operated zero adjustment sets the instrument to within $\pm$0,25 e of zero which is indicated by a light marked ZERO.

1.3.2 Check Switch

A three position self-cancelling switch is used to test the indicators as follows:

centre position:	normal indication
up position:	all indicators illuminated
down position:	all indicators blank

1.4 Sealing

(1) The connecting plug is sealed as shown in Figure 6.

(2) The cable from the connecting plug is internally connected to the indicator.

(3) The indicator-cover retaining screws are sealed with lead and wire as shown in Figure 5.

1.5 Marking

The nameplate is marked with the following data:

Manufacturer's name	
Serial number of instrument	
NSC approval number in the form:	NSC No .....
Accuracy class in the form:	(III)
Maximum capacity in the form:	Max .....*
Minimum capacity in the form:	Min .....*
Verification scale interval in the form:	d_d e= .....*

2. Description of Variants

1. With any other Mercury basework approved by the Commission replacing the baseworks of the pattern and variants, provided that:

   (a) the basework is of an instrument conventionally known as a platform weighing machine, weigh-bridge or hopper scale, etc., where the head-work and basework are separate assemblies connected by a mechanical linkage;

   (b) the capacity of the instrument is not more than the capacity approved for the basework:

   (c) additional transfer levers may be used;

   (d) a levelling device and a level indicator are fitted, except for instruments installed in a fixed position or instruments which satisfy the accuracy requirements and tilt tests specified in Test Procedures when tilted to a slope of 1 in 20 in a longitudinal direction and a transverse direction;

   (e) if a level indicator is required, its sensitivity shall be such that, when the instrument is tilted so that the bubble in the level indicator moves 2 mm, the zero will not change by more than two scale intervals, and when zero is reset in the tilted position the instrument will satisfy the accuracy require-ments; and

   (f) the instrument is marked with the following approval numbers:

   Headwork NSC No 6/10B/40
   Basework NSC No .....

* These markings are repeated on the reading face of the instrument.

2. The indicator with:

(a) A semi-automatic subtractive taring device which allows a mass on the load receptor of up to 3500 e to be tared to within 0,25 e, and

(b) A non-automatic subtractive taring device which allows an operator to enter a tare in 1e increments up to 3500 e by using the four thumbwheel switches, in which case the instrument bears an additional marking in the form:

Tare T = ...

3. Test Procedure

1. Accuracy Requirements

The maximum permissible errors are:

$\pm$0,5 e for loads between 0 and 500 e;

$\pm$1 e for loads between 501 e and 2000 e;

$\pm$1,5 e for loads above 2000 e.

2. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity ($\pm$2% approximately).

3. Zero Balance

Check by means of the Commission's digital zero test (Design Manual No 1, Document 104, Testing Procedure for the Elimination of Rounding Error for Weighing Instruments with Digital Indication) that, when the "zero light" is illuminated, zero is set within 0,25 e of zero.

4. Range of Indication

(a) The maximum mass indicated should not exceed the maximum capacity (max); above this indicated mass the indicator should be blank.

(b) The minimum mass indicated should be zero; below this indicated mass the indicator should be blank.

5. Load Cell Creep

Leaving a maximum-capacity load on the load receptor for a period of 30 minutes should not cause the mass indicated to be incorrect, and on removal of the load the mass indicated should be zero $\pm$0,25 e.

6. Test Loads

The application of the test loads specified in Table 1 and the display of these loads within the applicable tolerance will check that the instrument operates in accordance with the approved design.

See Change No 1 9/3/81

7. Taring

Tare a mass above maximum capacity; on removal of the mass, no tare should be indicated.

TABLE 1

Test load in scale intervals*

50	1 233,5
99	1 422,5
188	1 611,5
377	1 800,5
566,5	2 000,5
755,5	2 500
944,5	3 000
	3 499

*Test load = number of scale intervals x scale interval

Note: The test load should include a test at capacity, less the tolerance and less 0,5 scale interval.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/10B/40

VARIATION No 1

Pattern: Mercury WB-LT Weighbridge

Submittor: Mercury Scale Co. Pty Ltd,
32 Dew Street,
Thebarton, South Australia, 5031.

1. Description of Variant

1.1 Variant 3

The load cell and indicator described in the pattern connected to a four-section, single-platform basework as shown in Figure 7. The basework is approved for a maximum capacity of 70.0 t with a maximum of 3500 scale intervals.

The decking may be concrete or steel.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/10B/40

VARIATION No 2

Pattern: Mercury Model WB-LT Weighbridge

Submittor: Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Variant 4

With a non-self-indicating headwork using a steelyard of between 20 t and 70 t capacity approved for use with up to 3500 verification scale intervals.

In addition, the instrument may be fitted with a Commission-approved load cell (mounted within the headwork housing as shown in Figure 8) and a Commission-approved digital indicator.

TEST PROCEDURE

Multiple Indicators

Where more than one indicating system is used, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load registered on the device with the largest verification scale interval.

When two or more digital indicators are used the indications shall agree exactly.

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

VARIOUS CERTIFICATES OF APPROVAL

The following changes are made to the approval documentation for the approvals listed overleaf

submitted by Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
Thebarton SA 5031.

In the Certificates and Technical Schedules listed, the following changes should be made:

1) The submittor should be changed to read;

A & D Mercury Pty Ltd

(the address remains unchanged)

2) Any Mercury instrument or component of an instrument approved in the documentation, may now also be known as "AND Mercury" or similar.

Signed

J. Birch.

Executive Director

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APPROVAL	PATTERN
TYPE: weighing instruments counter scales	
6/3/007	Model 92
6/3/008	Model 131
TYPE: counter machines semi-self-indicating	
6/4A/012	Model 304A
TYPE: counter machines freely-suspended < 30 kg (spring scales)	
6/5/011	Model 211 DA
TYPE: weighing instruments non-self-indicating	
6/9A/001	Models 692 and 682
6/9A/004	Model 522D
6/9A/007	Model 211
6/9A/008	Model 600
TYPE: weighing instruments self-indicating	
6/9C/005	Model 211D
6/9C/013	Up to 2500 lb or 1200 kg
6/9C/066	Model 522 AL
6/9C/067	Model SM100/479/522D
6/9C/081	Model SB-LP 1200
6/9C/088	Model 522D LT-10K
TYPE: weighbridges self-indicating	
6/10B/040	Model WB-LT
6/10B/045A	Model RVB-H20
TYPE: automatic weighing instruments (except belt conveyors)	
6/14B/012	Model HSD automatic hopper
TYPE: overhead weighing instrument (suspended load or receptor)	
6/18/005	With 211DA headwork
6/18/017	Model OHT 500
TYPE: digital indicators	
S114	Model 579
S128	Model 1300
S132	Model 900
S161	Model AD4316
S199	Model AD-4321
TYPE: load cells	
S117	Interface model SM25-12 kg
S163	Transducers model B5112.1K
S221	HBM model TRT-50 (Mercury model TRT3K-50)

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/10B/40

CHANGE No 1

The following change is made to the description of the

Mercury WB-LT Weighbridge

given in Technical Schedule No 6/10B/40 dated 10/10/80:

On page 5, paragraph 6 is deleted, and replaced by:

6. Test Loads

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

Note: All load applications to the instrument should be in accordance with the Commission's recommended testing procedure for the elimination of rounding error as set out in Document 104.

The instrument should display these loads within the applicable tolerance as listed above.

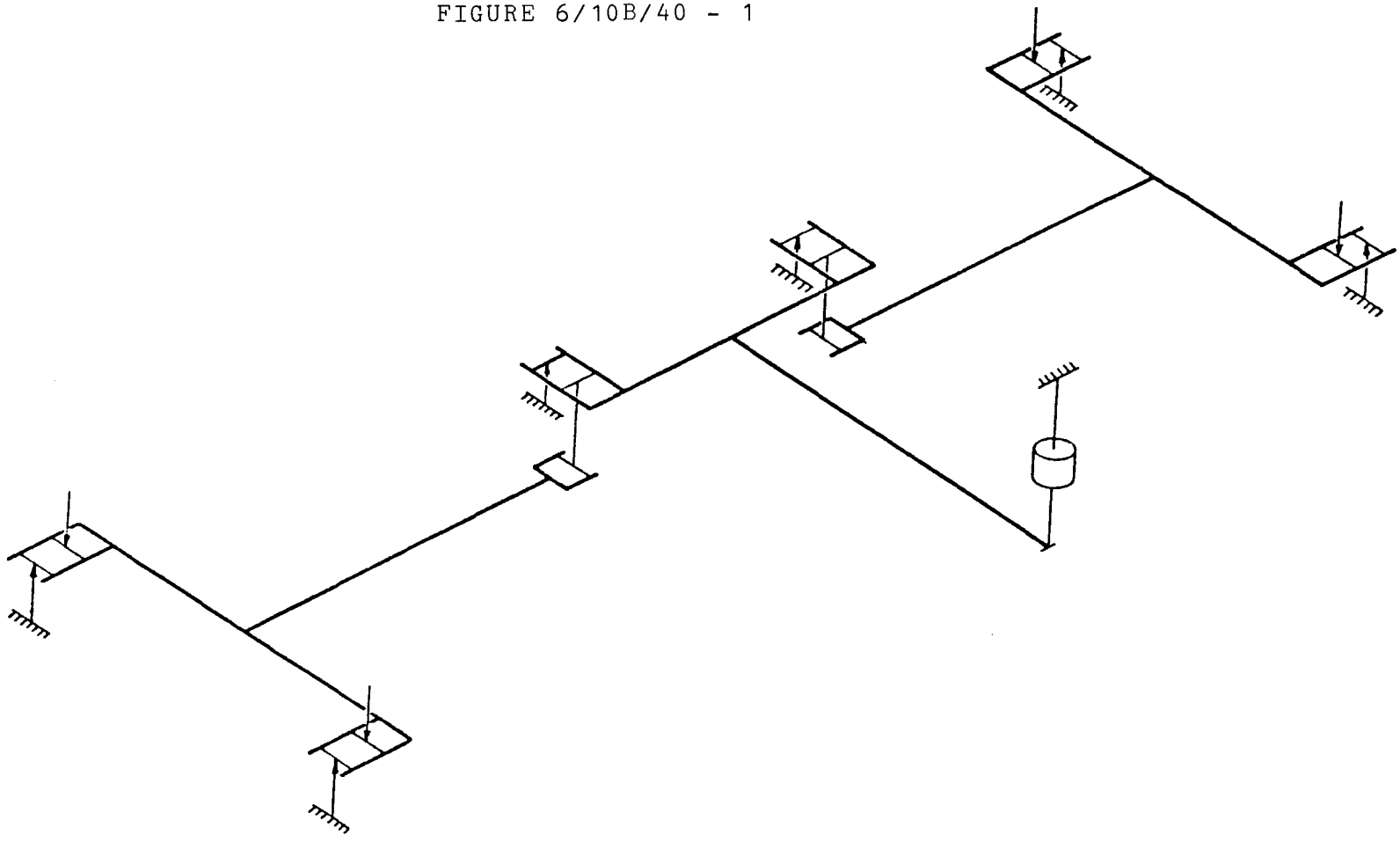
Signed

Raymond Ward

Acting Executive Director

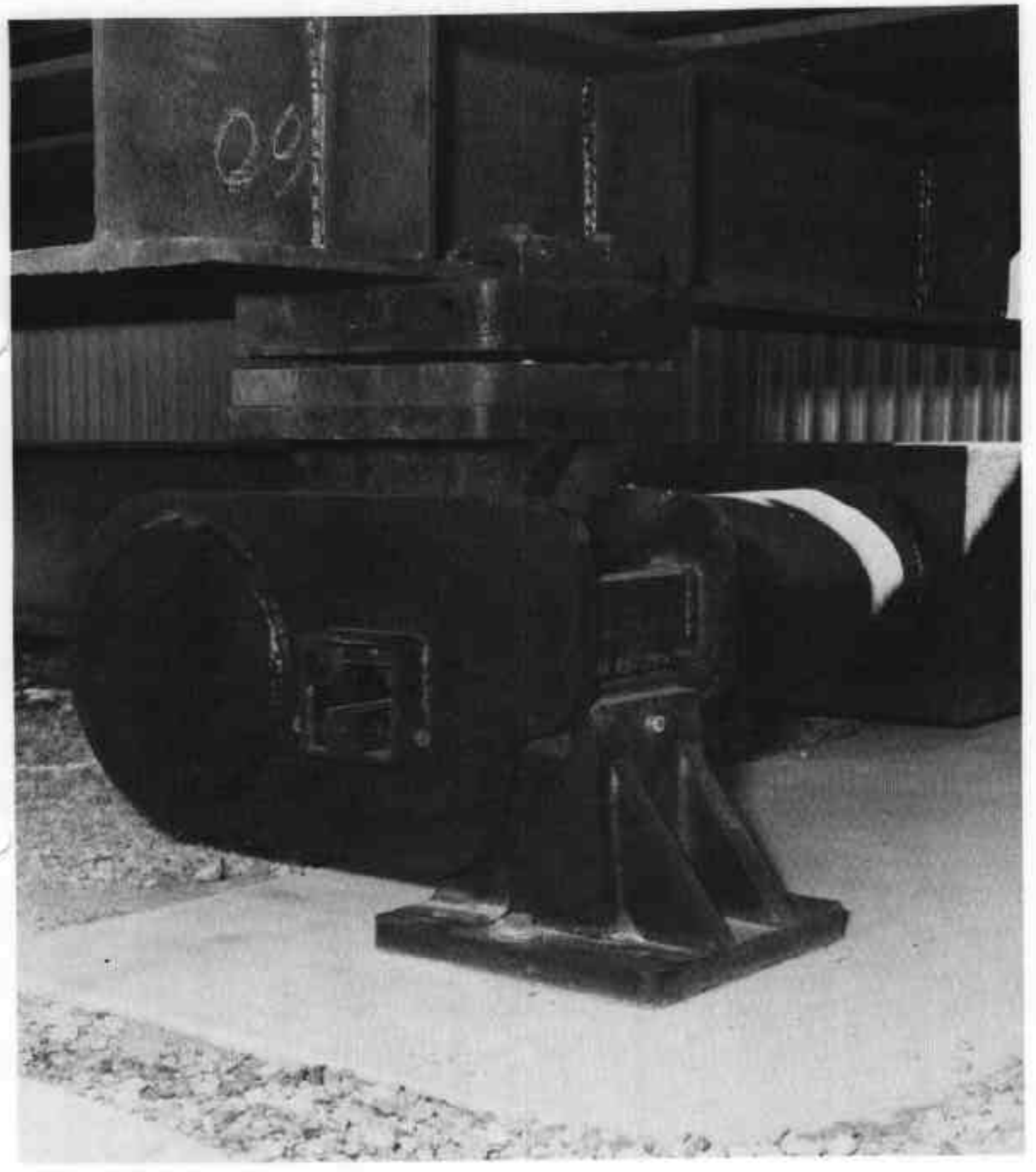
9/3/81

FIGURE 6/10B/40 - 1



Lever System - Schematic Diagram

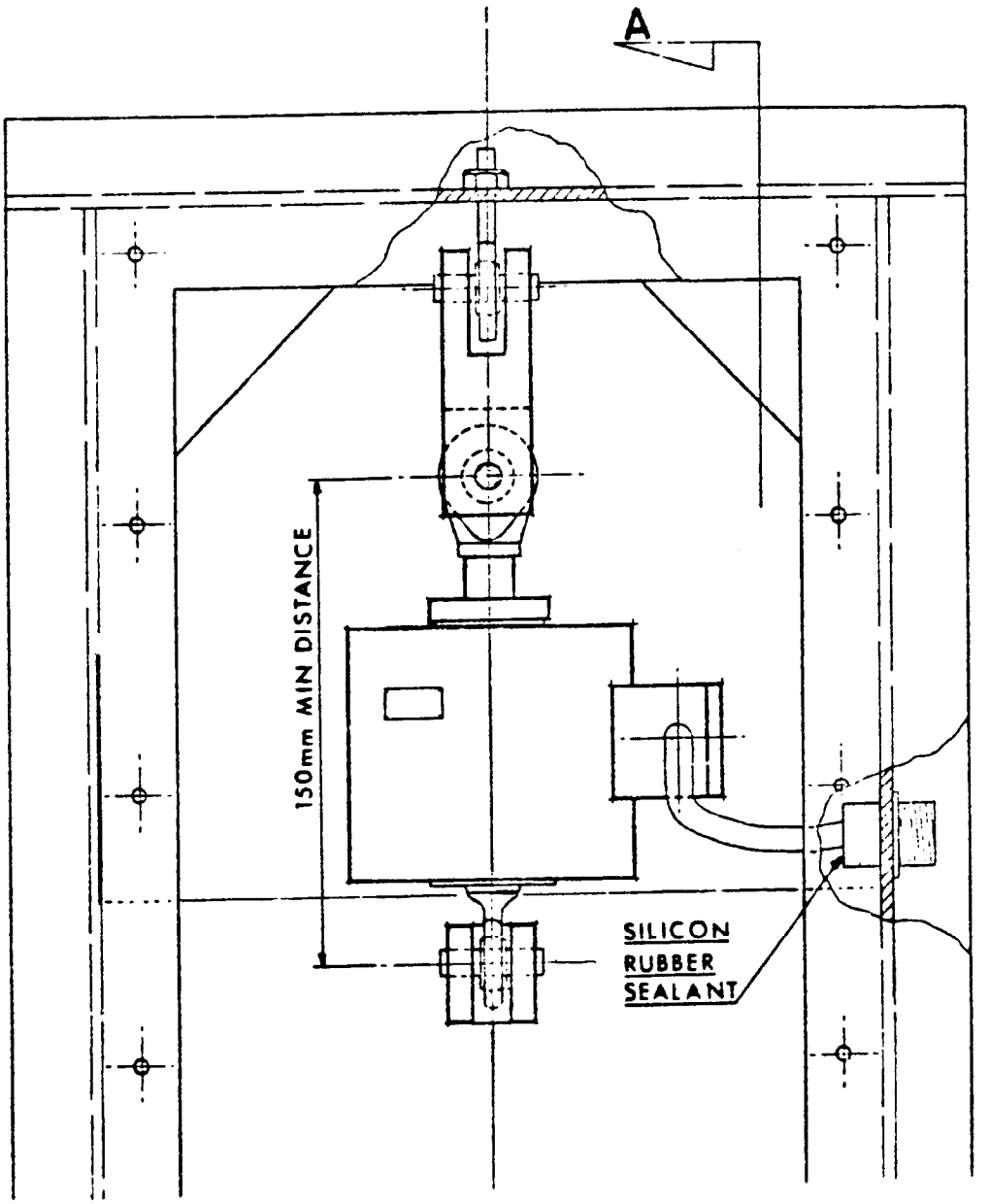
FIGURE 6/10B/40 - 2



Corner of Platform Suspension and
Fulcrum Stand

10/10/80

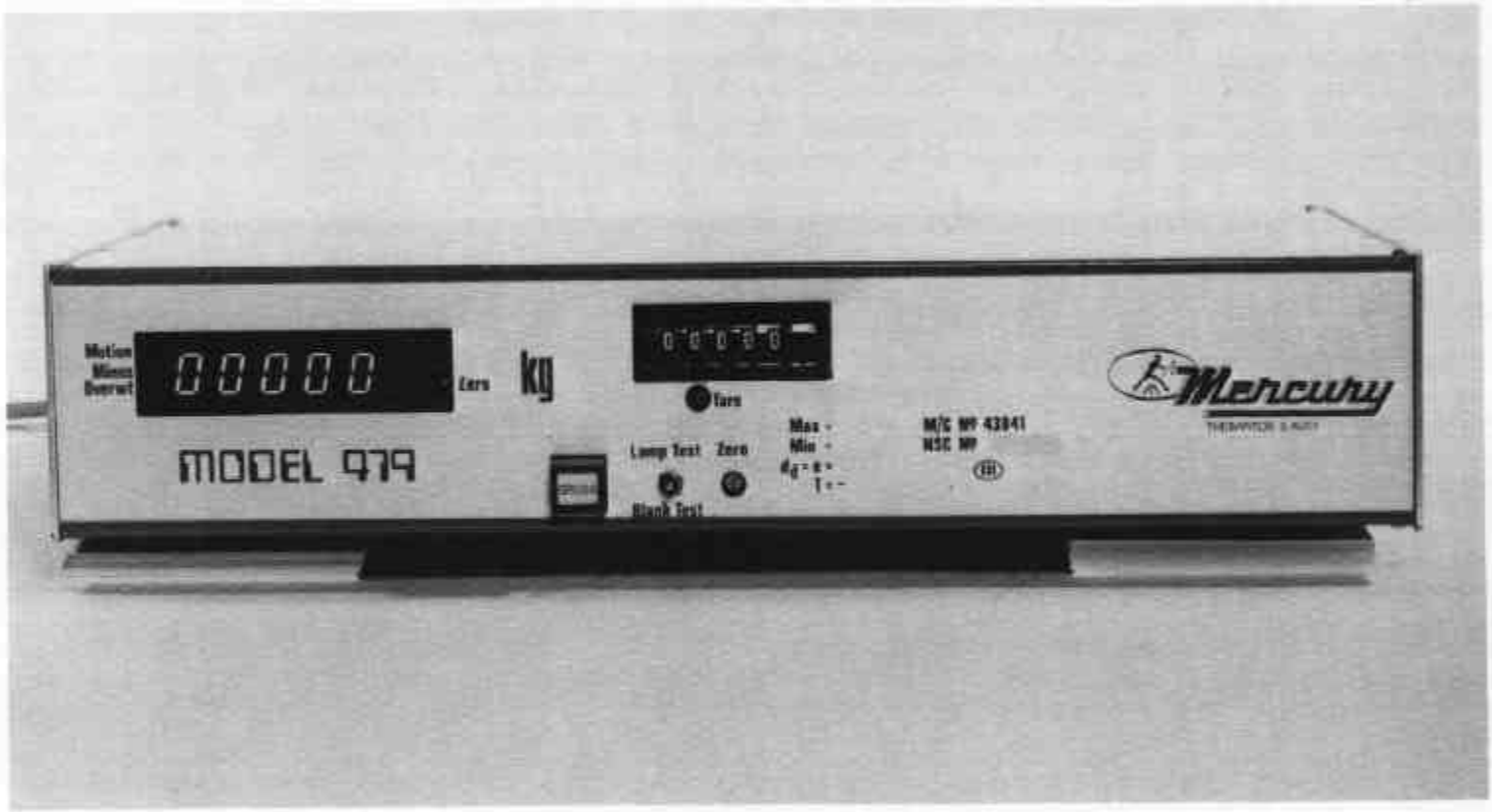
FIGURE 6/10B/40 - 3



Mounting of Load Cell

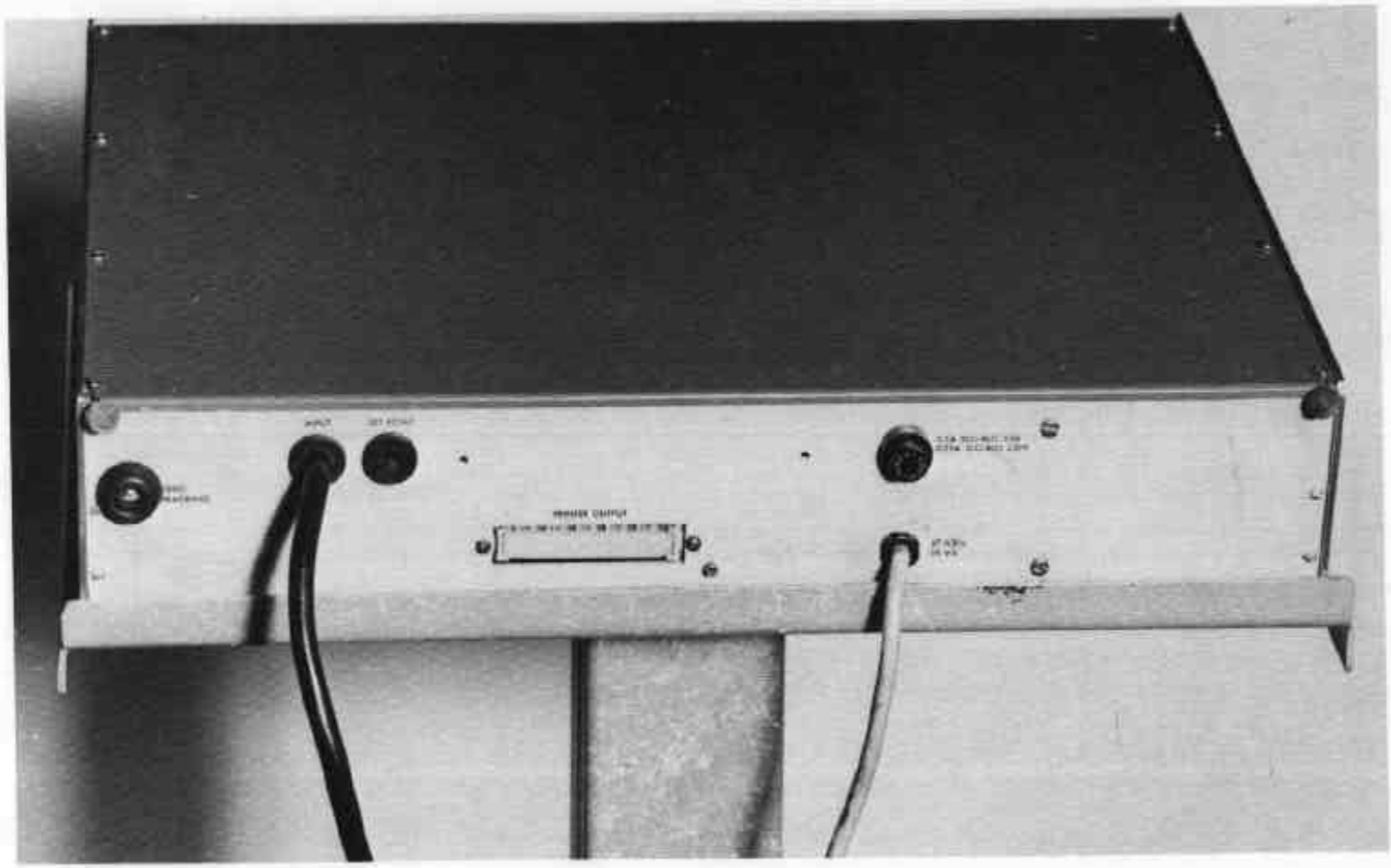
10/10/80

FIGURE 6/10B/40 - 4



Indicator Model 479

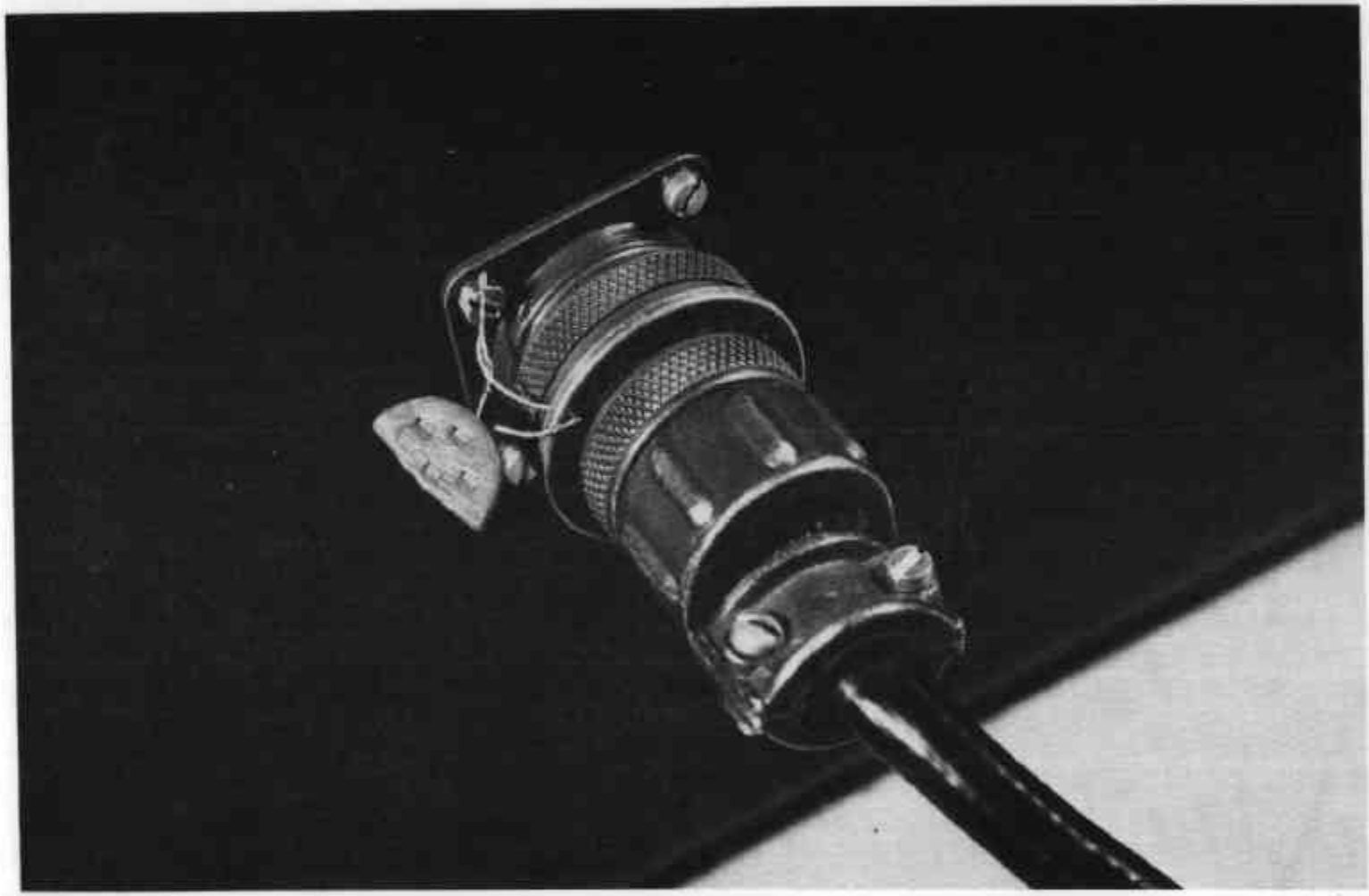
FIGURE 6/10B/40 - 5



Model 479 Indicator - Rear View Showing Sealing

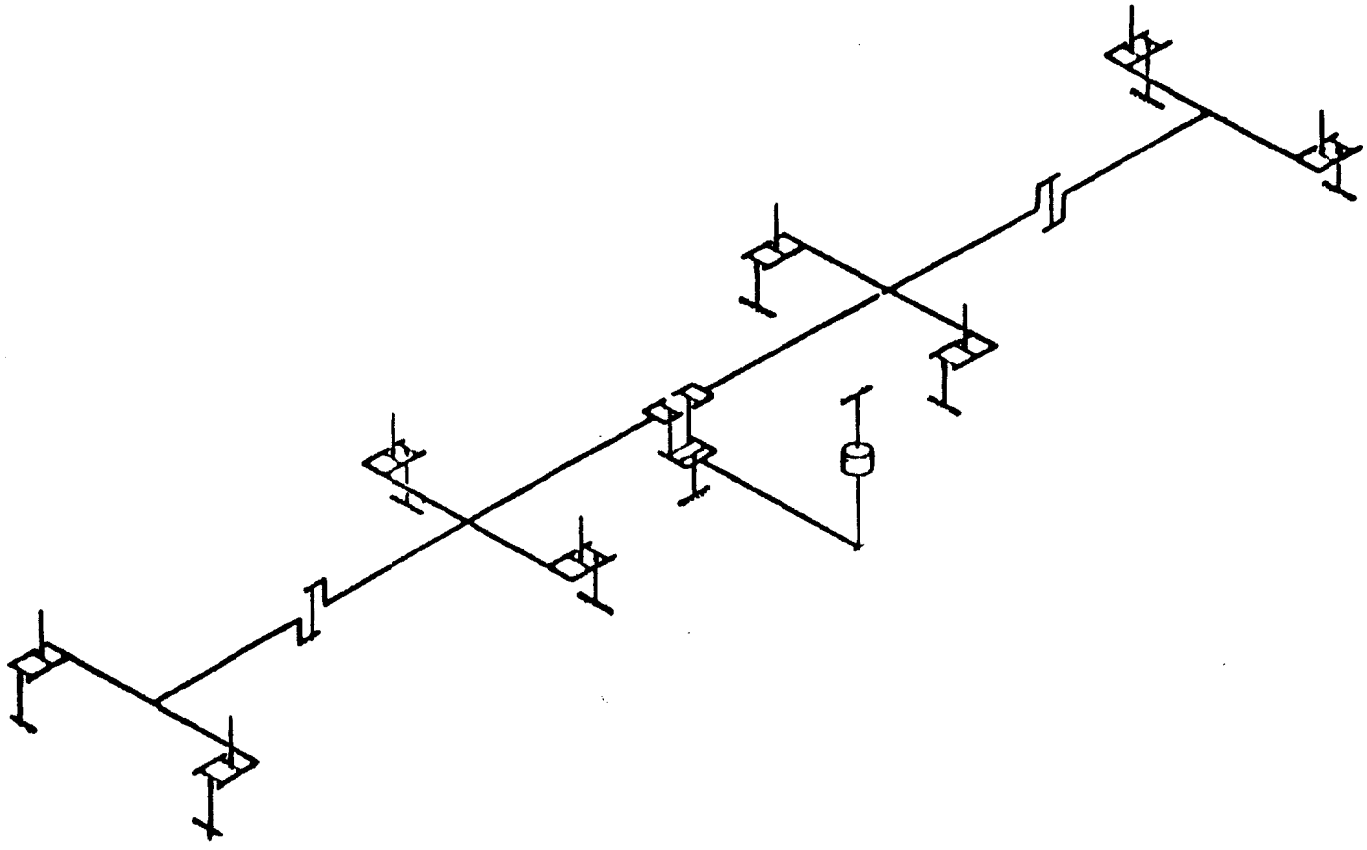
FIGURE 6/10B/40 - 6

10/10/80



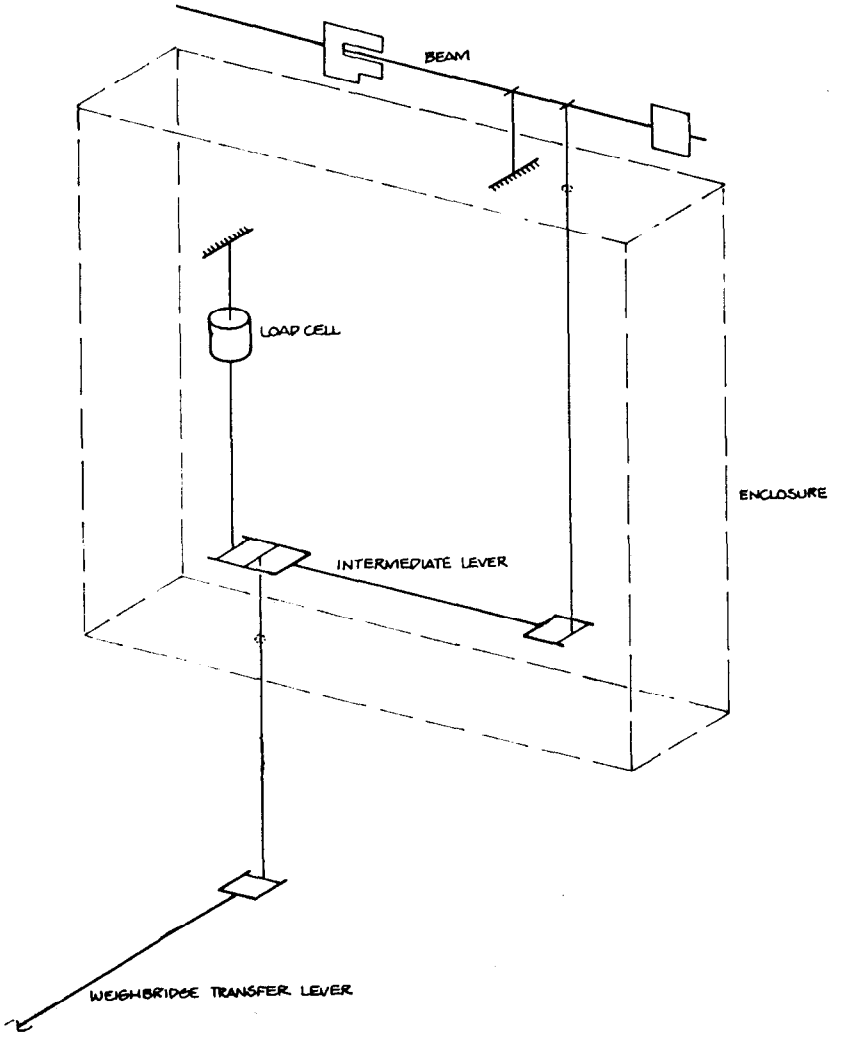
Load Cell Output Cable Showing Sealing

FIGURE 6/10B/40 - 7



Baseworks - Schematic Diagram

FIGURE 6/10B/40 - 8



Showing Steelyard And Optional Load Cell