



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/9C/217B

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

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

Ultrahawke Model 7600/15 Weighing Instrument

submitted by Ultrahawke Pty Ltd
 2/9 Production Drive
 Campbellfield VIC 3061

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 approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on 1/10/16, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 7 approved – interim certificate issued	28/09/01
1	Pattern & variants 1 to 5 updated – certificate issued	6/12/01
2	Variant 6 approved – certificate issued	15/12/04
3	Pattern & variants 1 to 6 reviewed – notification of change issued	1/02/07
4	Pattern & variants 1 to 6 reviewed & updated – certificate issued	16/03/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI (or NSC) 6/9C/217B' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) 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 document NMI P 106.

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

Special

The pattern as approved herein or with substitute approved load cells and/or approved indicators and in other capacities, or with different platform sizes, shall comply with General Certificate of Approval No 6B/0.

Note: New instruments manufactured under this approval shall only use load cells and/or indicators with current Supplementary Certificates of Approval.


The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

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 a long horizontal stroke at the bottom.

TECHNICAL SCHEDULE No 6/9C/217B

1. Description of Pattern **approved on 28/09/01**

An Ultrahawke model 7600/15 class  non-automatic self-indicating weighing instrument of 15 000 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

1.1 Basework

The model 7600/15 basework (Figures 1 and 2a) has the load receptor directly supported by means of ball-and-cup assemblies on load cells which are mounted on a subframe.

If approach ramps are provided care shall be taken to ensure that these do not interfere with the platform.

1.2 Load Cells

Four GEC Avery model 8708 load cells of 7000 kg capacity are used mounted as shown in Figure 1. (Note that the load cell profiles shown in Figures 2a, and 3 to 5 are not necessarily those of the GEC Avery model 8708 cells.) The load cells are described in the documentation of approval NSC S176B.

1.3 Indicator

A Gedge Systems model GS1650Mk3 digital indicator is used. The indicator is described in the documentation of NSC approval No S193B.


1.4 Levelling

Where instruments are liable to be tilted (i.e. they are not installed in a permanently fixed location) they are provided with adjustable feet and a level indicator. Adjacent to the level indicator is a notice stating 'instrument must be level when in use', or similar wording.

1.5 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate.

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Ultrahawke Pty Ltd
Indication of accuracy class	
Maximum capacity	<i>Max</i> g *
Minimum capacity	<i>Min</i> g *
Verification scale interval	<i>e</i> = g *
Tare capacity (if less than <i>Max</i>)	<i>T</i> = - g
Serial number of the instrument
Pattern approval mark for the instrument	NMI (or NSC) 6/9C/217B
Pattern approval mark for the load cells
Pattern approval mark for the indicator

* These markings shall also be shown near the display of the result if they are not already located there.

1.6 Sealing Provision

Provision is made for the calibration adjustments to be sealed as described in the approval documentation for the indicator.

1.7 Verification Provision

Provision is made for the application of a verification mark.

2. Description of Variant 1 approved on 6/12/01

Other models in the 7600 series in capacities as listed below with no less than 4 and with up to 10 NMI-approved load cells:

- from 100 kg up to 1499 kg;
- from 1500 kg up to 14 999 kg; and
- from 15 000 kg up to 149 999 kg.

Load cell mounting arrangements shall be in accordance with the approval documents for the load cell used. Beam type (Figure 2a) or compression type (Figure 2b) load cells may be used.

3. Description of Variant 2 approved on 6/12/01

Other models in the 7600 series with an alternative load cell mounting as shown in Figure 3.

4. Description of Variant 3 approved on 6/12/01

Other models in the 7600 series with an alternative basework arrangement which does not have a baseframe and where the self-aligning supporting feet are fitted directly to the load cells (Figures 4 and 5).

5. Description of Variant 4 approved on 6/12/01

With up to 4000 verification scale intervals using other approved load cells.

Instruments used with more than 3000 verification scale intervals shall be provided with wind protection in accordance with clause **4. Wind Effects** of General Certificate of Approval No 6B/0.

6. Description of Variant 5 approved on 6/12/01

As hopper weighing instruments in capacities from 100 kg up to 149 999 kg.

Instruments are either:

- (a) fitted with 3, 4 or 5 approved load cells (arranged symmetrically to ensure even loading of each cell) where the hopper is a vertical cylindrical or tank-type load receptor directly supported by the load cells; or
- (b) fitted with 4 approved load cells where the hopper is a non-vertical cylindrical, or other hopper-type load receptor.

Note: Instruments with more than 4 load cells may be acceptable if prior written agreement from NMI is obtained.

In addition suitable provision must be made for the application of suitable verified masses to the instrument as required for verification and certification purposes. It may be necessary for such masses to be incorporated within the design of the instrument.

7. Description of Variant 6

approved on 15/12/04

As weighing instruments with platforms which are circular (Figure 6) or triangular in shape fitted with three load cell assemblies and suitable for special purposes with centrally-loaded applications with a maximum capacity of 3000 kg.

Instruments are fitted with 3 or more approved load cells arranged symmetrically to ensure even loading of each cell. The load receptor is directly supported by the load cells.

In addition, suitable provision must be made for the application of suitable verified masses to the instrument as required for verification and certification purposes. It may be necessary for such masses to be incorporated within the design of the instrument.

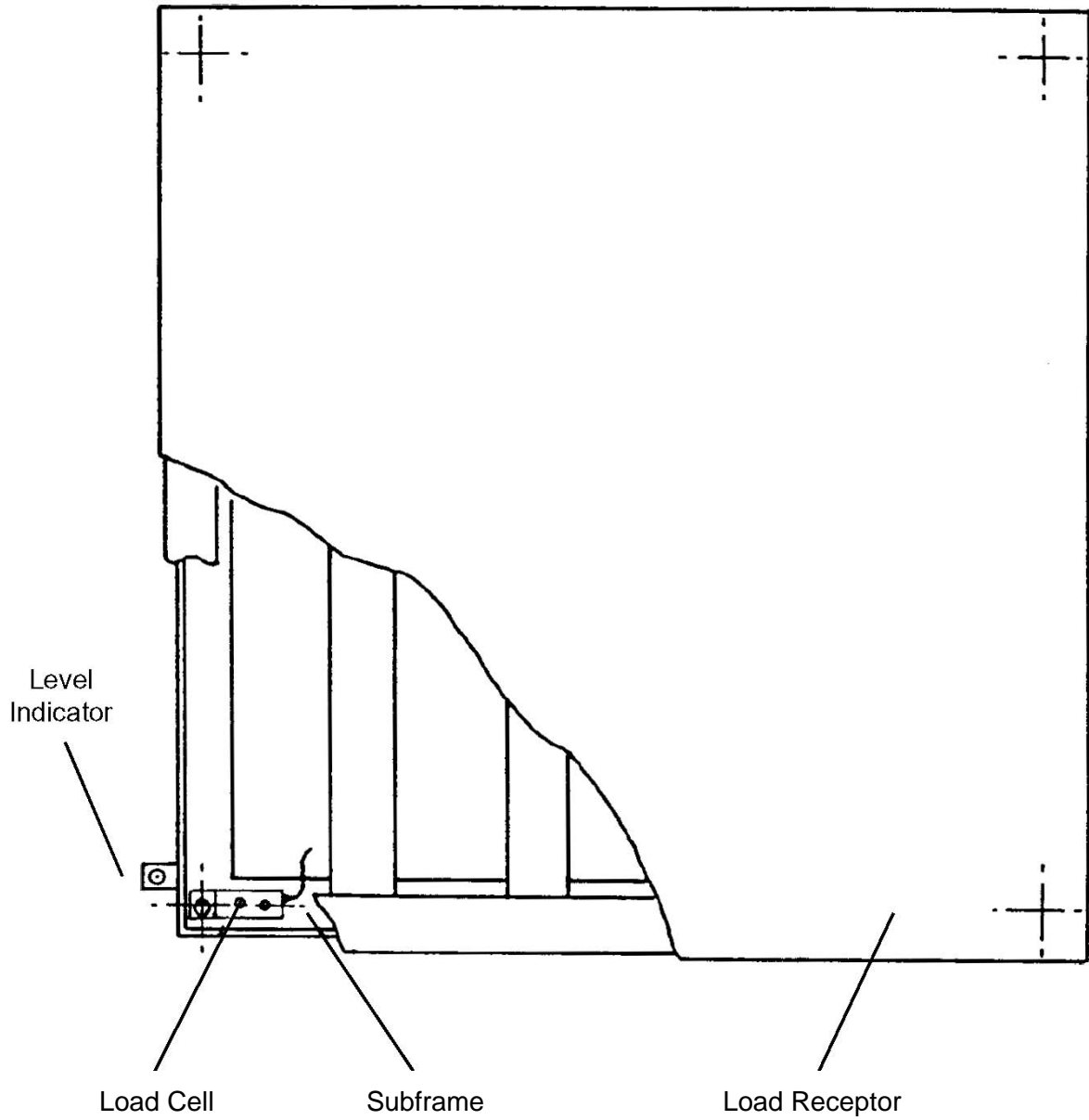
TEST PROCEDURE No 6/9C/217B

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

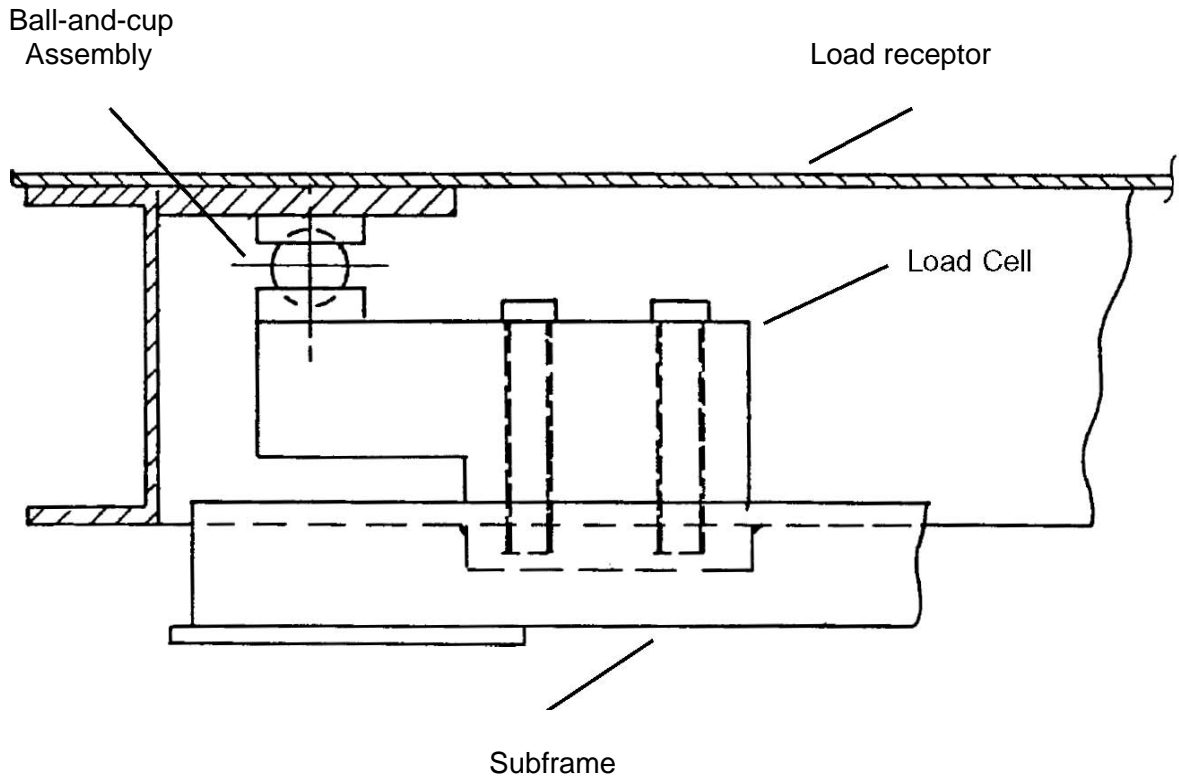
The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 6/9C/217B – 1

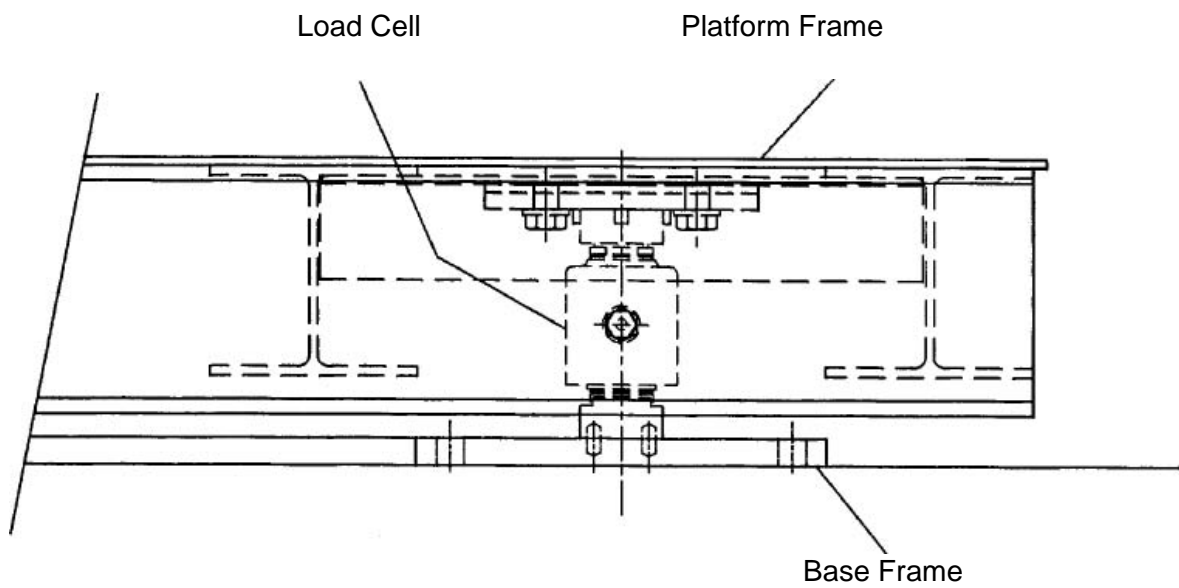


Ultrahawke Model 7600/15 (or 7600) Weighing Instrument

FIGURE 6/9C/217B – 2

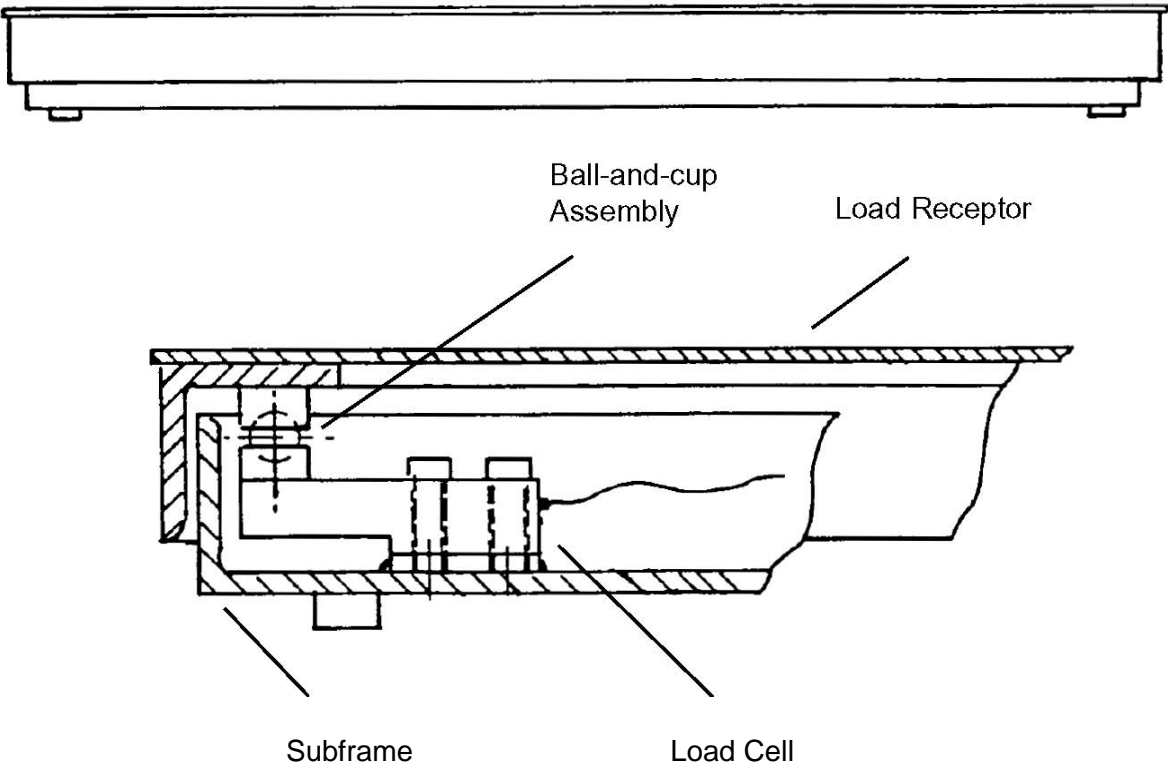


(a) Load Cell Mounting for the Pattern and Variant 1



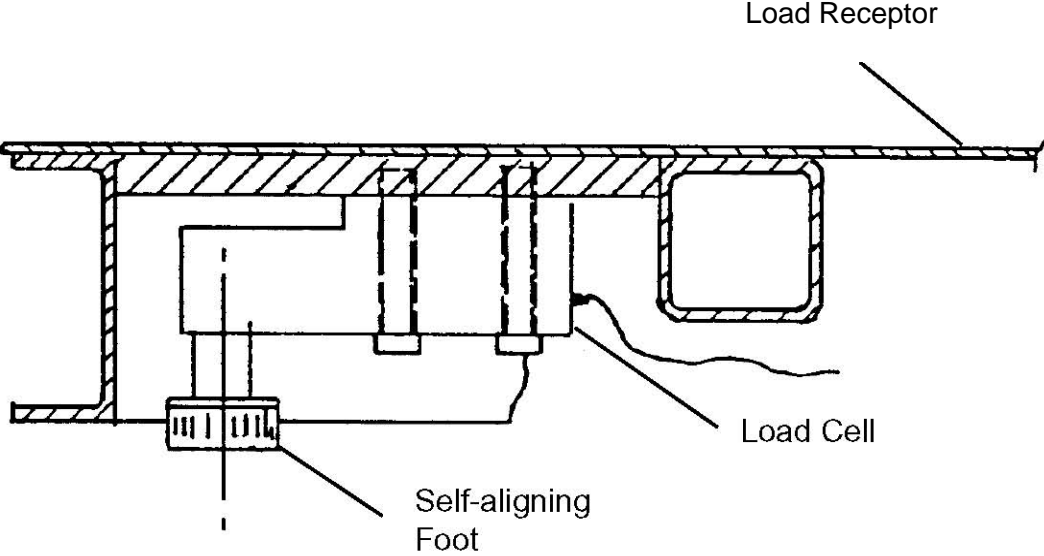
(b) Alternative Load Cell and Mounting for Variant 1

FIGURE 6/9C/217B – 3

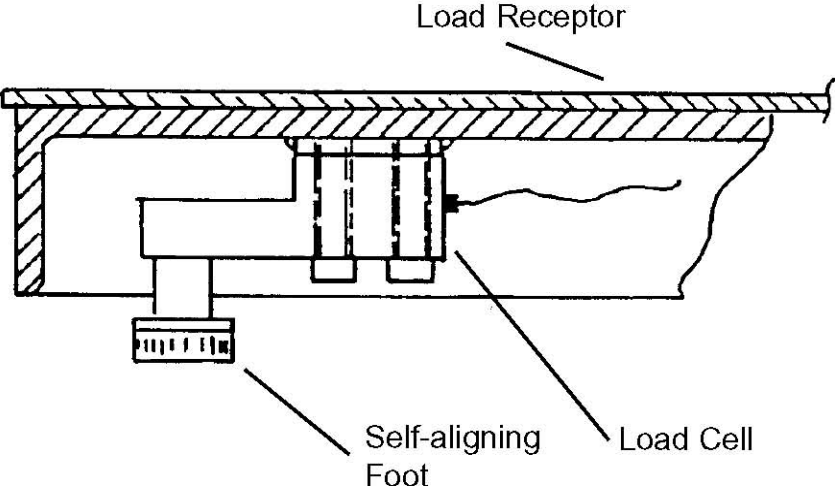


Load Cell Mounting for Variant 2

FIGURE 6/9C/217B – 4



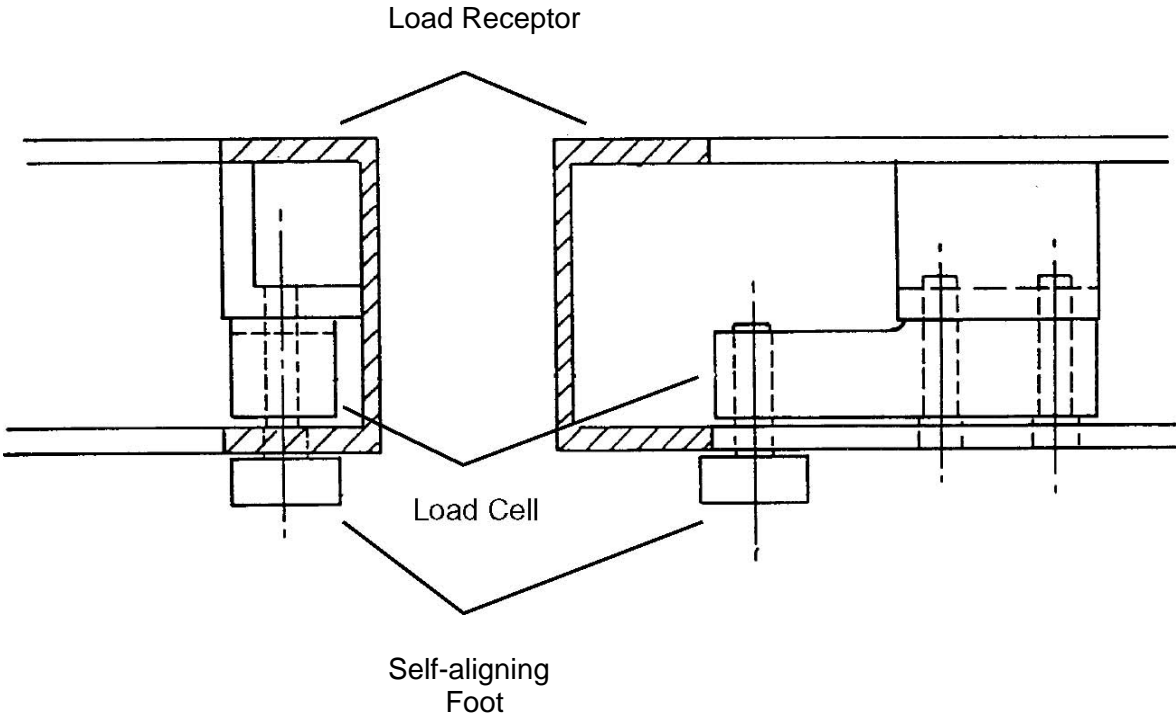
Model 7600/15



Model 7600

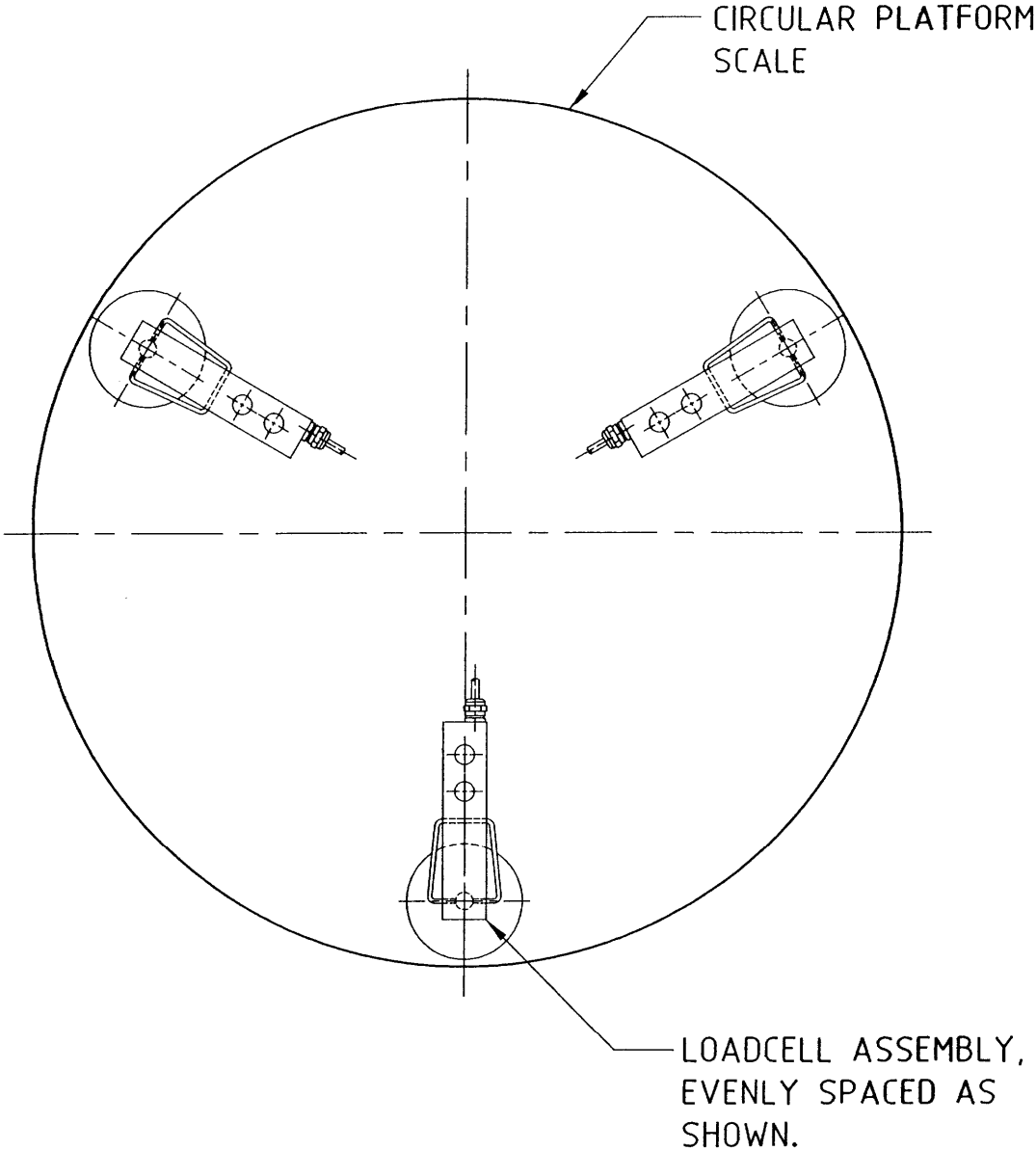
Load Cell Mounting for Variant 3

FIGURE 6/9C/217B – 5



Alternative Load Cell Mounting for Variant 3

FIGURE 6/9C/217B – 6



Typical Circular Platform Weighing Instrument – Variant 6