Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 6/9C/220B

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

A & D Model ELP 3000 Weighing Instrument

submitted by A & D Australasia Pty Ltd
(formerly A & D Mercury Pty Ltd)
32 Dew Street
Thebarton SA 5031.

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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 May **2015**, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NSC 6/9C/220B' and only by persons authorised by the submittor.

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 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.

…./2

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

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

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.

DESCRIPTIVE ADVICE

Pattern: approved 14 April 2000

- An A & D model ELP 3000 self-indicating weighing instrument of 3000 kg maximum capacity.

Variants: approved 14 April 2000

1. Model ELP 3000DC with a low-profile load receptor.
2. In capacities from 100 kg up to 1499 kg.
3. In capacities from 1500 kg up to 14 999 kg.

Technical Schedule No 6/9C/220B describes the pattern and variants 1 to 3.

Variants: approved 14 July 2005

4. Model ELP 3000-SW suspended weighing instrument.
5. Model ELP 3000-HS or model ELP 3000-BB with the load receptor in the form of either a hopper or a bag, respectively.
6. Model A&D3000.

Technical Schedule No 6/9C/220B Variation No 1 describes variants 4 to 6.

Variant: approved 16 March 2006

7. With pairs of load cells mounted in channels.

Technical Schedule No 6/9C/220B Variation No 2 describes variant 7.

Variant: approved 23 November 2010

8. Model ELP 1200 or A&D1200 weighing instrument.

Technical Schedule No 6/9C/220B Variation No 3 describes variant 8.

FILING ADVICE

Certificate of Approval No 6/9C/220B dated 22 March 2006 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/9C/220B dated 24 November 2010
Technical Schedule No 6/9C/220B dated 21 April 2000 (incl. Test Procedure)
Technical Schedule No 6/9C/220B Variation No 1 dated 15 July 2005 (incl. Notification of Change)
Technical Schedule No 6/9C/220B Variation No 2 dated 22 March 2006
Technical Schedule No 6/9C/220B Variation No 3 dated 24 November 2010 (incl. Notification of Change and Note)
Figures 1 to 3 dated 21 April 2000
Figures 4 to 6 dated 15 July 2005
Figures 7 and 8 dated 22 March 2006
Figure 9 dated 24 November 2010

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

TECHNICAL SCHEDULE No 6/9C/220B

Pattern: A & D Model ELP 3000 Weighing Instrument.

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Pattern

An A & D model ELP 3000 self-indicating platform weighing instrument (Figure 1) of 3000 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

1.1 Basework

The model ELP 3000 basework (Figure 1) has the platform directly supported by four load cells (Figure 2).

The basework has a nominal size of 1200 x 1200 mm.

1.2 Load Cells

Four Kelba model KA-1000-C3 load cells of 1000 kg capacity are used.

The load cells are also described in the approval documentation of NSC approval No S155B.

1.3 Indicator

An A & D model AD-4401 digital indicator is used.

The indicator is also described in the approval documentation of NSC approval No S362.

1.4 Levelling

The basework may be permanently fixed above ground, with or without loading ramps, or let into a pit with the platform level with the ground; in such cases no level indicator is required.

If the basework is not permanently fixed then it is fitted with levelling feet and a level indicator. Adjacent to the level indicator is a notice stating ‘instrument must be level when in use’, or similar wording.

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

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1.5 Verification/Certification Provision

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

1.6 Sealing Provision

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

1.7 Markings

Instruments are marked with the following:

Manufacturer's mark, or name written in full	A & D, Japan
Indication of accuracy class	(III)
Maximum capacity	*Max* ..... kg *
Minimum capacity	*Min* ..... kg *
Verification scale interval	*e =* ..... kg *
Maximum subtractive tare (if applicable)	T = - ……. kg #
Serial number of the instrument	.....
Pattern approval mark for the instrument	NSC No 6/9C/220B
Pattern approval mark for the indicator	NSC No S....
Pattern approval mark for the load cells	NSC No S....

* These markings shall also be repeated adjacent to each reading face, if they are not already located there.

\# If different to the maximum capacity of the instrument.

2. Description of Variants

2.1 Variant 1

Model ELP 3000DC with an alternative low-proflie load receptor (Figure 3).

2.2 Variant 2

In capacities from 100 kg up to 1499 kg.

2.3 Variant 3

In capacities from 1500 kg up to 14 999 kg.

TEST PROCEDURE

Instruments should be tested in conjunction with any tests specified in the approval documentation for the indicator used, 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:

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

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15 July 2005

TECHNICAL SCHEDULE No 6/9C/220B

VARIATION No 1

Pattern: A & D Model ELP 3000 Weighing Instrument

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Variants

1.1 Variant 4

The model ELP 3000-SW which is similar to the pattern (model ELP 3000) but now has the load receptor suspended from the weighing frame by fixed links.

Figure 4 shows two typical ELP 3000-SW instruments.

Instruments may be in any capacity from 100 kg to 14 999 kg.

1.2 Variant 5

With the load receptor in the form of a hopper or a bag suspended from the base frame (Figure 5); instruments are then known as either the model ELP 3000-HS or the model ELP 3000-BB, respectively.

Instruments may be in any capacity from 100 kg to 14 999 kg.

Suitable provision must be made for the application of suitable verified masses to the instrument as required for verification and certification purposes - a suitable method is shown in Figure 5. It may be necessary for such masses to be incorporated within the design of the instrument.

1.3 Variant 6

The model A&D3000 which is similar to the pattern (model ELP 3000) but now uses narrow cross-section crossmembers, as shown in Figure 6.

Instruments may be in any capacity from 100 kg to 14 999 kg.

NOTIFICATION OF CHANGE

In Certificate of Approval No 6/9C/220B dated 21 April 2000, the Condition of Approval referring to the review of the approval should be amended to read:

> "This approval becomes subject to review on 1 May 2010, and then every 5 years thereafter."

6/9C/220B
22 March 2006

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VARIATION No 2

Pattern: A & D Model ELP 3000 Weighing Instrument

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Variant 7

An alternative construction of the model ELP-3000 or A&D3000 instruments, with pairs of load cells mounted in 'channels' (Figures 7 and 8) which are mounted under each end of a load receptor.

Notes:

1. As this arrangement does not have provision for levelling, instruments shall be installed in a fixed location.
2. The channels shall not be verified/certified individually.
3. The channels shall not be verified/certified without a load receptor, i.e. instruments shall only be verified/certified as complete instruments.

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VARIATION No 3

Pattern: A & D Model ELP 3000 Weighing Instrument

Submittor: A & D Australasia Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Variant 8

An alternative construction of the instrument (pattern and variants 1 to 6), known as the model ELP1200 (or also known as model A&D1200), with the load cell mounted as shown in Figure 9.

NOTIFICATION OF CHANGE

A. In Technical Schedule No 6/9C/220B dated 21 April 2000, and in its Variation No 1 dated 15 July 2005, and in its Variation No 2 dated 22 March 2006, the references to the name of the submittor should be amended to now read:

"A & D **Australasia** Pty Ltd"

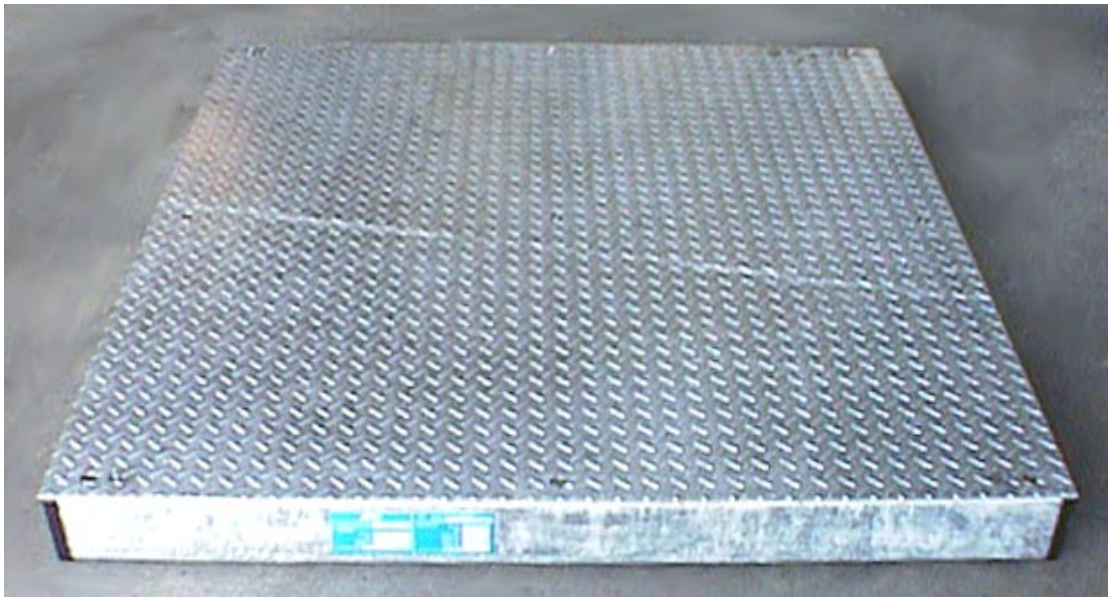
B. In Technical Schedule No 6/9C/220B dated 21 April 2000, the 1st paragraph of the TEST PROCEDURE should be amended to read, in part:

"…any relevant tests specified in the **Uniform Test Procedures**."

NOTE:

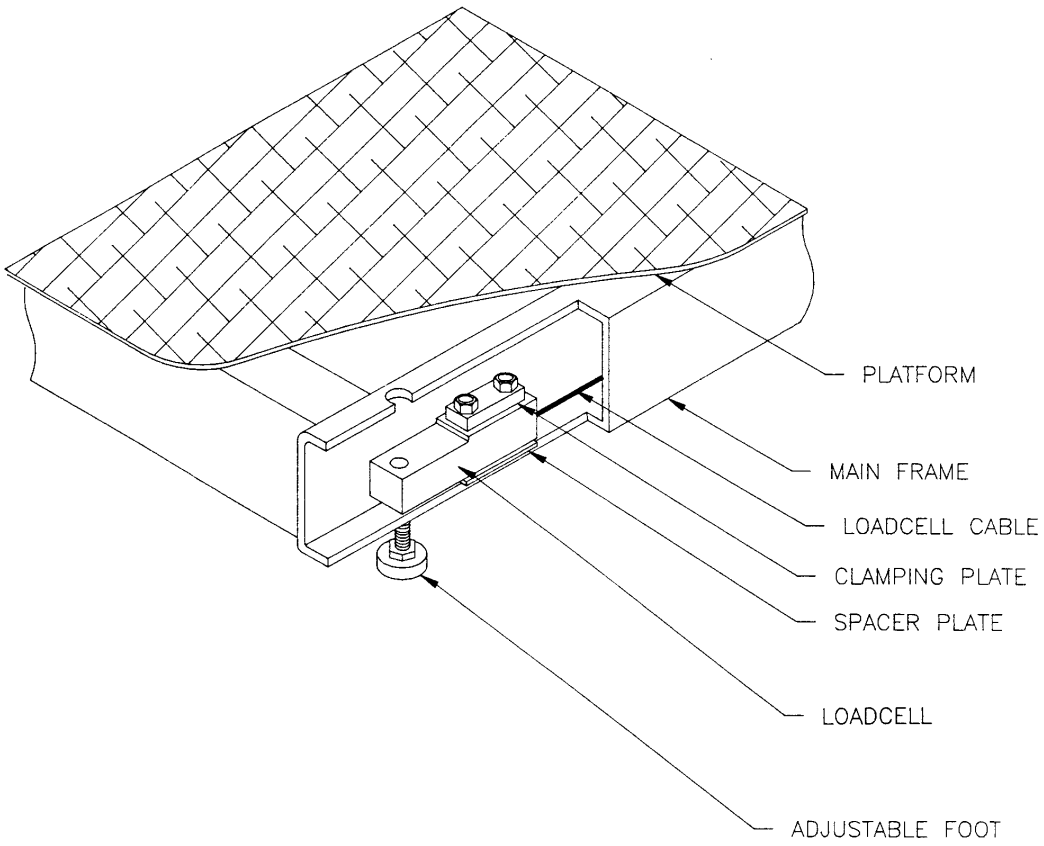
The date at which this approval becomes due for review has been amended following completion of a review.

FIGURE 6/9C/220B - 1



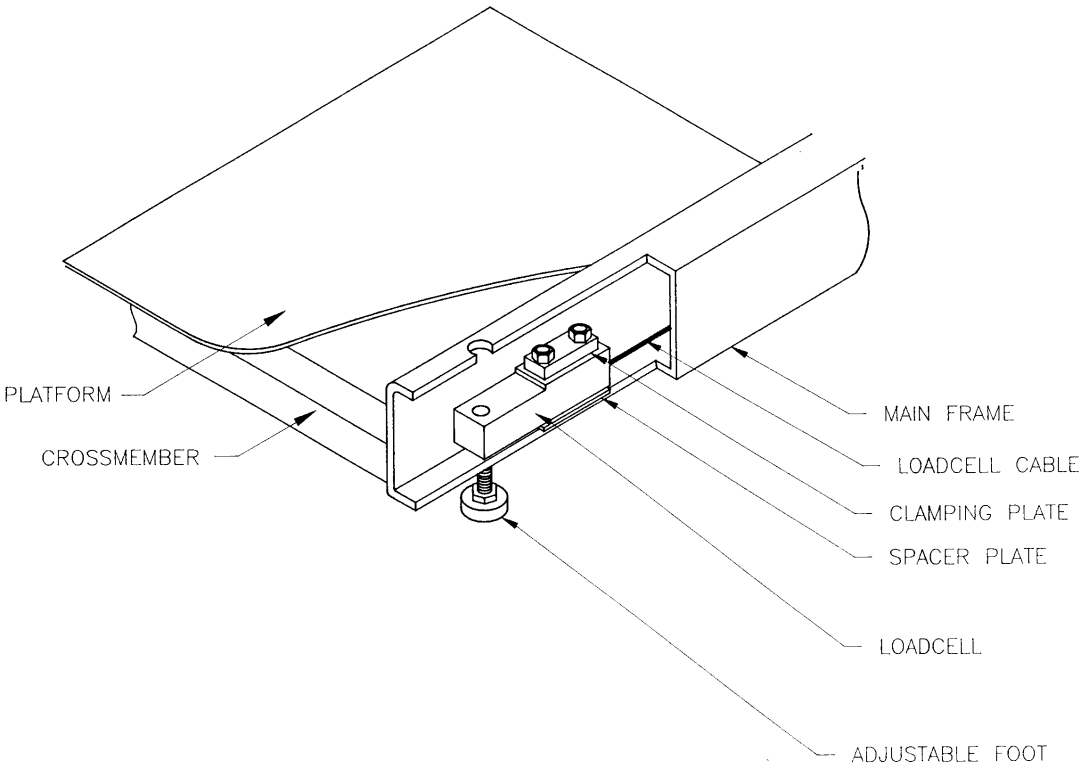
A & D Mercury Model ELP 3000 Basework

FIGURE 6/9C/220B - 2



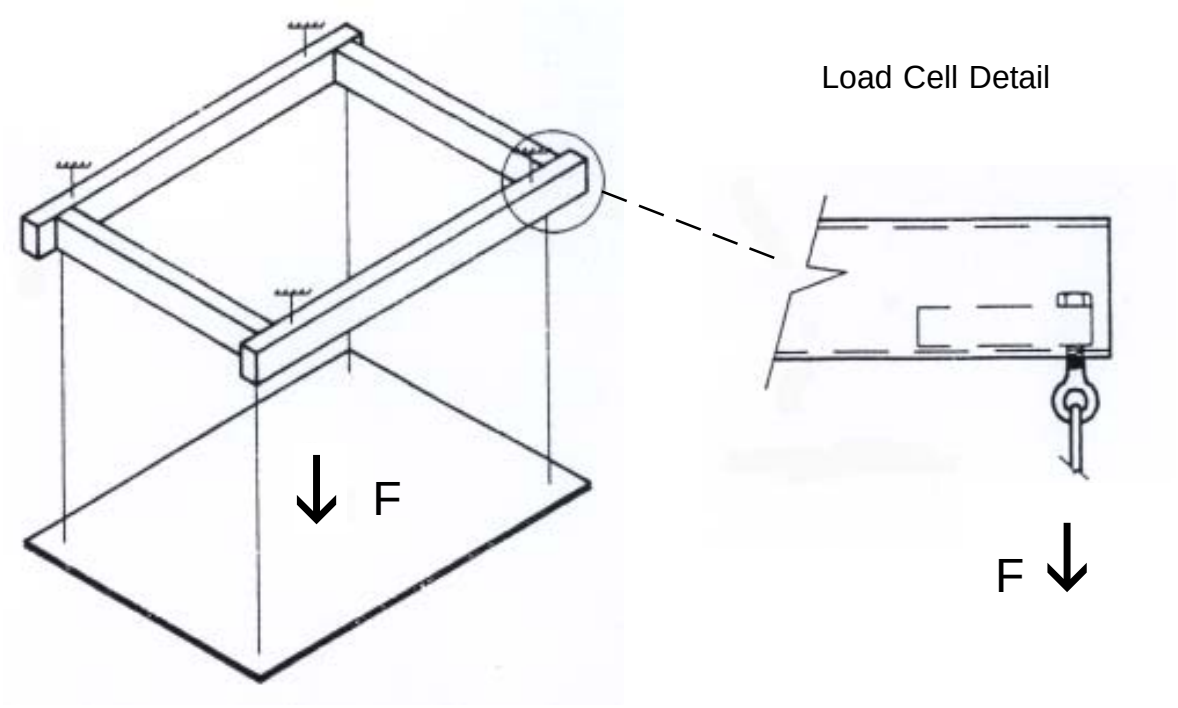
Model ELP 3000 Load Cell Mounting

FIGURE 6/9C/220B - 3

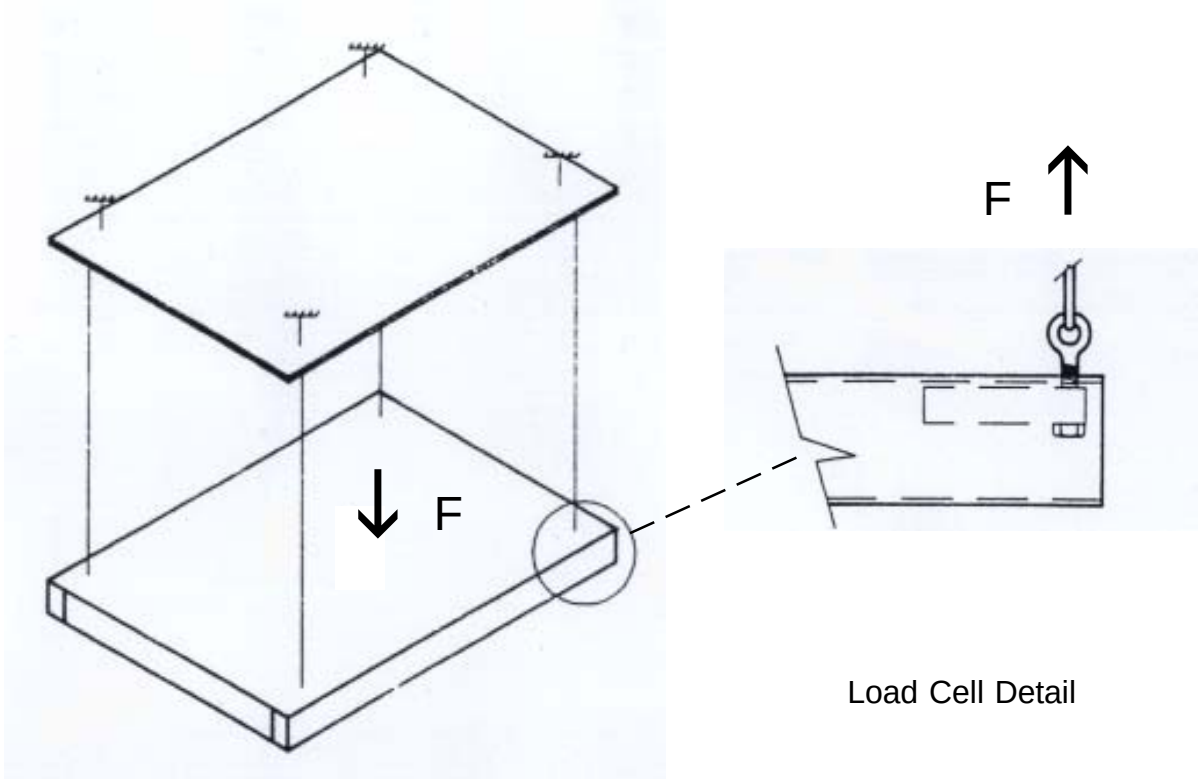


Model ELP 3000DC Load Cell Mounting

FIGURE 6/9C/220B – 4

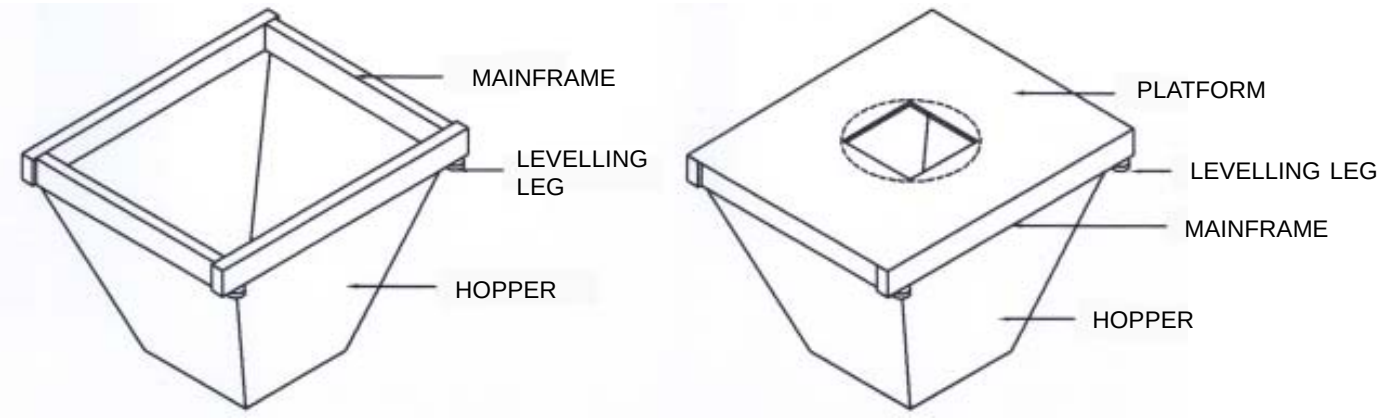


(a) An Alternative Model ELP 3000-SW Instruments (Variant 4)



(b) Another Alternative Model ELP 3000-SW Instruments (Variant 4)

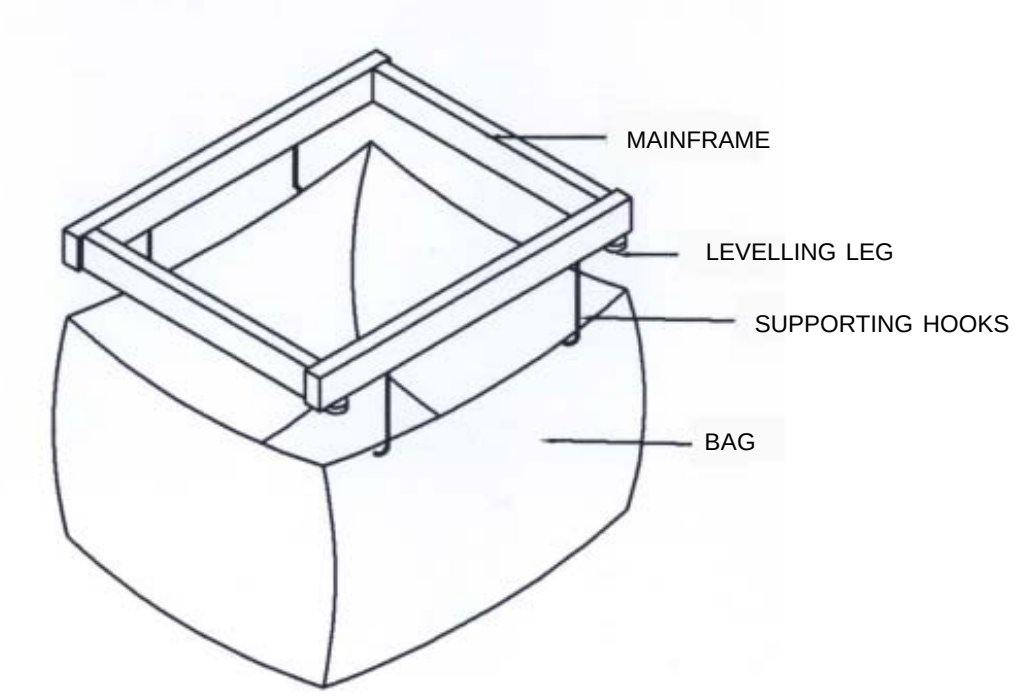
FIGURE 6/9C/220B – 5



ELP 3000-HS

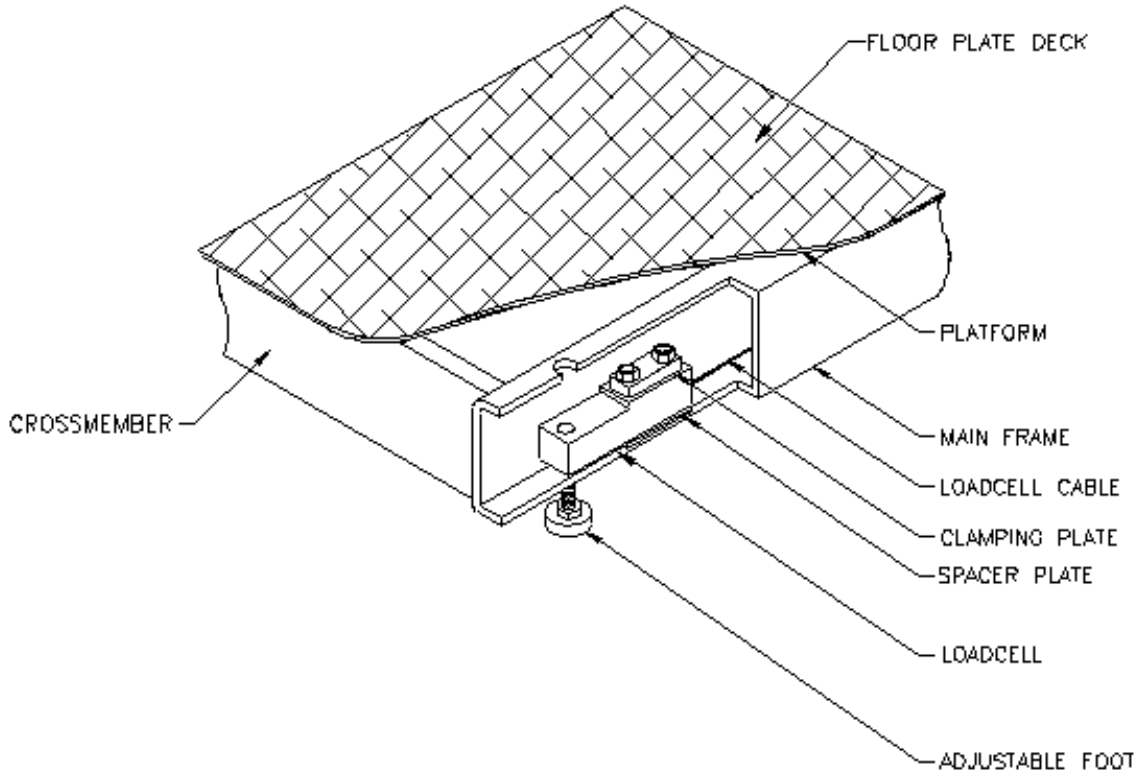
ELP 3000-HS with test platform

(a) A Typical Model ELP 3000-HS Instrument (Variant 5)



(b) A Typical Model ELP 3000-BB Instrument (Variant 5)

FIGURE 6/9C/220B – 6

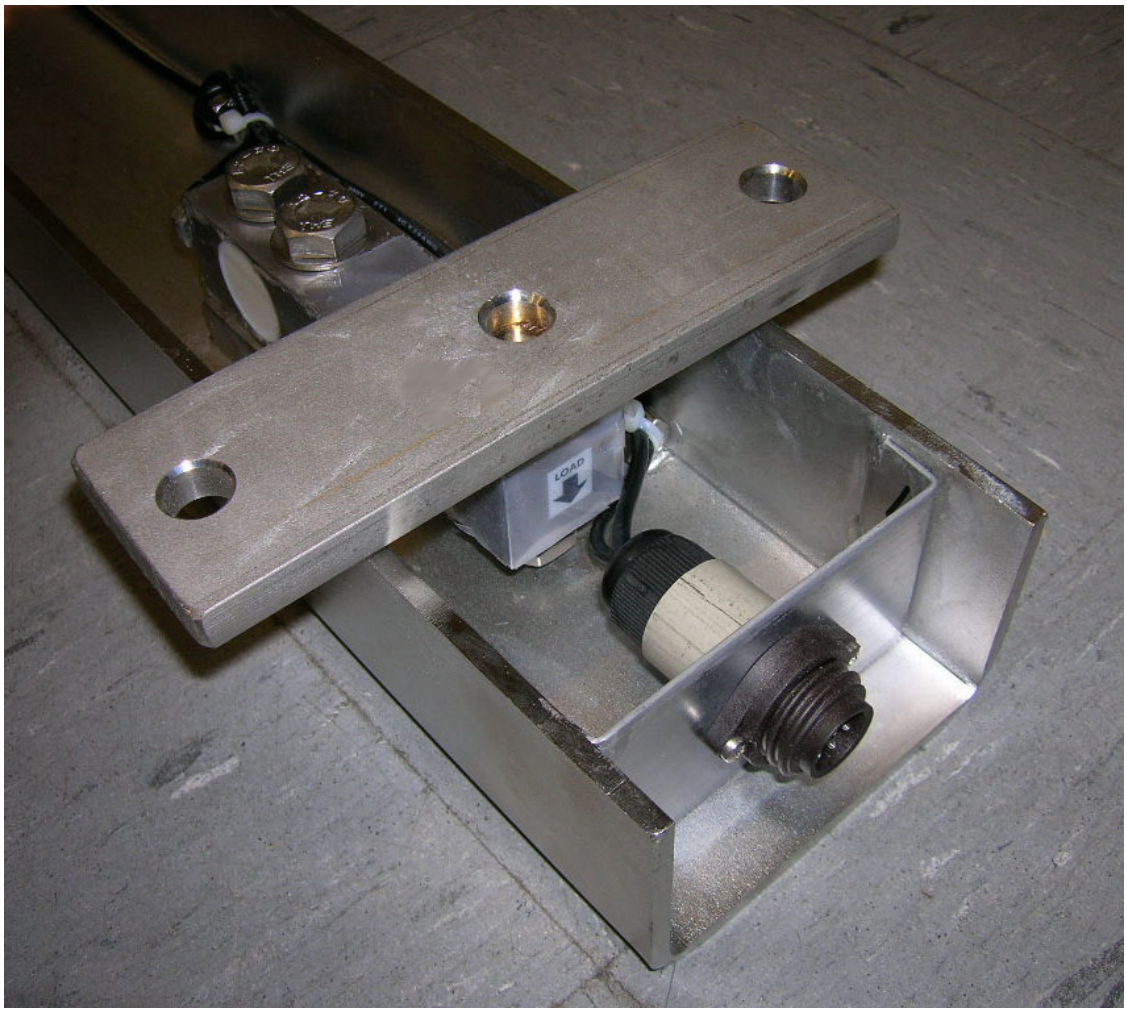


Typical Model A&D3000 Basework (Variant 6)

FIGURE 6/9C/220B – 7

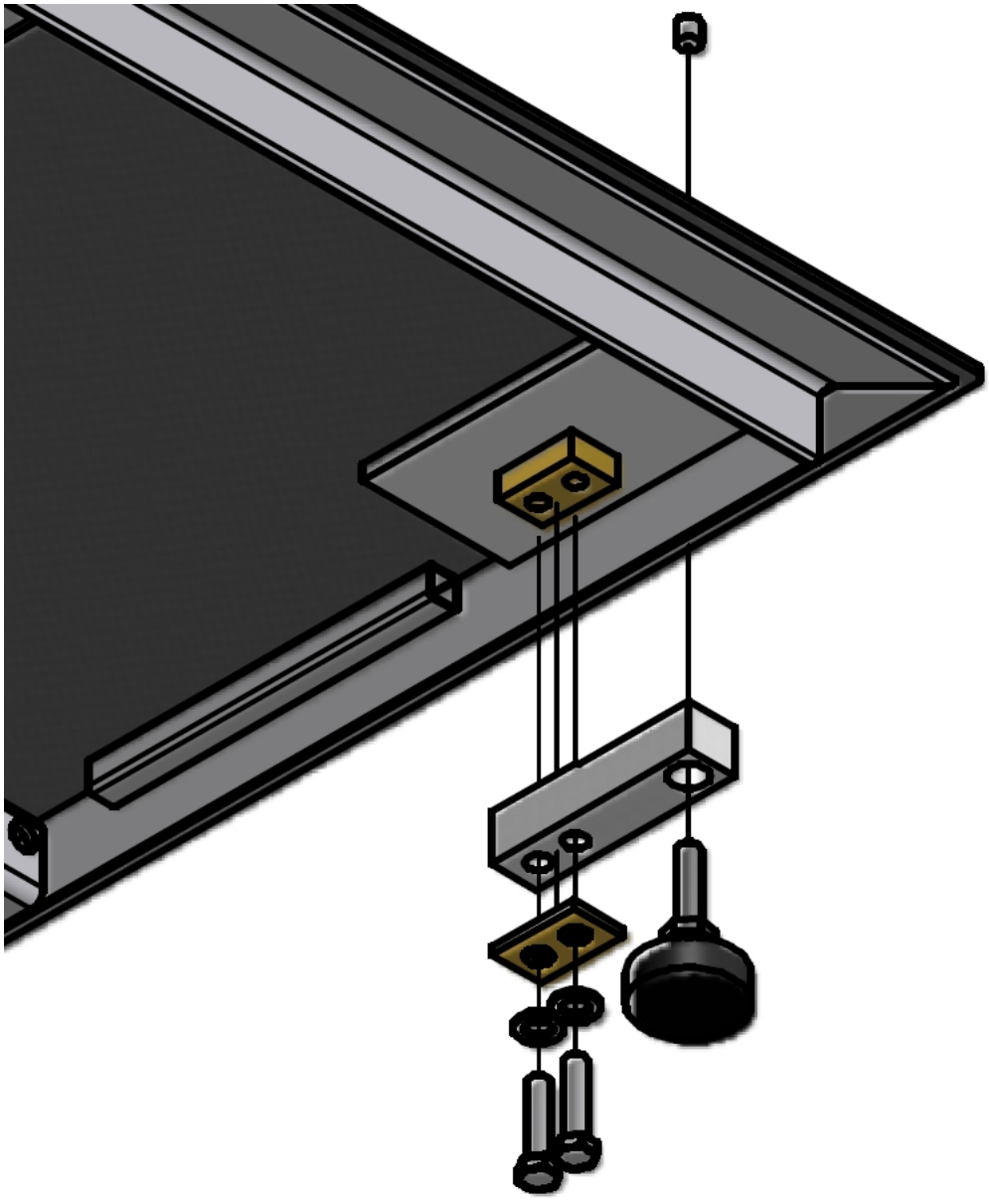
Typical Channels for a Variant 7 Weighing Instrument

FIGURE 6/9C/220B – 8



Load Cell Mounting For a Typical Variant 7 Instrument

FIGURE 6/9C/220B – 9



Load Cell Mounting for Model ELP1200 (aka A&D1200) Instruments