



## National Standards Commission

12 Lyonpark Road, North Ryde NSW

### **Cancellation Certificate of Approval No 6/4C/34**

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

Hytech Model APO 25 Weighing Instrument

submitted by Hytech Scales Pty Ltd  
15 Bellevue Crescent  
Preston VIC 3072

has been cancelled in respect of new instruments as from 1 August 2001.

Instruments which were verified/certified before that date may, with the concurrence of the relevant verifying authority, be submitted for reverification.

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.



RS

6/4C/34  
1/11/85



# NATIONAL STANDARDS COMMISSION

## NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

### REGULATION 9

#### CERTIFICATE OF APPROVAL No 6/4C/34

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

Hytech Model APO 25 Weighing Instrument

submitted by Hytech Scales Pty Ltd  
3 Reserve Road  
Preston Vic 3072

are suitable for use for trade.

#### Conditions of Approval

This approval is subject to review on or after 1/7/87.

Instruments purporting to comply with this approval shall be marked NSC No 6/4C/34.

This approval may be withdrawn if instruments are constructed and used other than as described in drawings and specifications lodged with the Commission.

Signed

Acting Executive Director

#### Descriptive Advice

Pattern: approved 23/6/82

. Hytech model APO 25 weighing instrument.

Variant: approved 15/10/82

1. The pattern in an alternative housing.

Variants: provisionally approved 2/5/83 - approved 9/11/83

2. With the instrument serial number permanently stored in memory.

3. Variants 1 or 2 without the level indicator.

Technical Schedule No 6/4C/34 describes the pattern and variants 1 to 3.

Variant: approved 16/9/85

4. Using an alternative load cell and mounting.

Technical Schedule No 6/4C/34 Variation No 1 describes variant 4.

Filing Advice

Certificate of Approval No 6/4C/34 dated 29/11/83 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/4C/34 dated 1/11/85  
Technical Schedule No 6/4C/34 dated 19/5/83  
Technical Schedule No 6/4C/34 Variation No 1 dated 1/11/85  
Test Procedure No 6/4C/34 dated 19/5/83  
Figures 1 to 3 dated 19/5/83.



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4C/34

Pattern: Hy-tech Model APO 25 Weighing Instrument

Submittor: Hy-tech Scales Pty Ltd  
9 Lillian Street  
Pascoe Vale, Victoria, 3044.

## 1. Description of Pattern

The pattern (Figures 1 and 2) is a dual range self-indicating weighing instrument of 25 kg capacity with 1 g scale intervals up to 2 kg, and with 10 g scale intervals from 2 kg to 25 kg. The change in scale interval is automatic in both directions. Mass is digitally indicated on both sides of a remote display.

### 1.1 Display Check

When power is applied, the display will show all 8's for approximately 1½ seconds, then go blank for a further 1½ seconds; then, provided the machine is within manual zero range, the instrument will zero.

### 1.2 Load Receptor

The receptor is supported by a flexure system connected by a lever to a vibrating-wire load cell.

The output frequency of the load cell, which is proportional to the load applied, is compared to a master frequency and the resultant encoded to continuously display mass.

### 1.3 Zero

Zero to within 0.25e, indicated by the ZERO light illuminating, may be obtained either semi-automatically using the ZERO push-button, or automatically, whenever the instrument comes to rest within 0.5e of zero.

### 1.4 Levelling

The instrument is provided with a level indicator and four adjustable feet. Adjacent to the level indicator is a notice advising that the instrument must be level when in use.

### 1.5 Marking

The instrument is marked with the following data, together in one clearly visible location:

Manufacturer's name or mark	
Serial number of instrument	
NSC approval number	6/4C/34
Accuracy class	(III)
Maximum capacity of the scale	Max 25 kg*
Minimum capacity	Min 0.01 kg*
Maximum capacity high range	Max 25 kg*
Maximum capacity low range	Max 2 kg*
Verification scale interval high range	e=d= 0.01 kg*
Verification scale interval low range	e=d= 0.001 kg*

\* These markings are repeated in the vicinity of each reading face.

## 1.6 Sealing

A stamping plug is provided on the vendor's side of instrument, and sealing is by lead and wire for two cover plates in diagonally opposite corners, one being under the platter, the other under the base of the main case.

## 2. Description of Variants

### 2.1 Variant 1

The pattern in an alternative housing as shown in Figure 3.

This instrument has provision for the application of a verification mark being either a destructible label or a stamping plug, but no sealing is required.

#### 2.1.1 Zero

This instrument is fitted with an automatic dual-circuit self-checking zero-correction device which resets zero to within 0.25e. A zero-indicating device is not required.

### 2.2 Provisional Variant 2

The pattern or variants with the serial number permanently stored in the instrument memory. The serial number is displayed when power is applied, as part of the display check sequence.

### 2.3 Provisional Variant 3

Variants 1 or 2 without the level indicator.

## TEST PROCEDURE No 6/4C/34

As the instrument is fitted with automatic zero correction, the application of cumulative loads should not exceed 5 minutes' duration. Periodic removal of the load will allow the instrument to rezero, and thus more closely simulate actual usage. The instrument is also fitted with a timing device which is initiated when the instrument is more than 0.5e away from zero; in this condition the instrument will revert to an error mode indicated by displaying all 8's, after approximately 8 minutes. It is required that the load be removed to allow either manual or automatic rezeroing.

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 maximum permissible errors are:

- ±0.5e for loads between 0 and 500e;
- ±1.0e for loads between 501e and 2000e; and
- ±1.5e for loads above 2000e.

### 1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity (± 2% approximately). Satisfactory setting may be checked by the following method:

- (a) With zero balance indicated, apply a load of, say, 0.10 kg to the instrument; it should not be possible to obtain zero by means of the ZERO adjustment.
- (b) Reduce the load to, say, 0.03 kg; it should then be possible to obtain zero.

### 2. Zero Test

As the automatic zero tracking resets zero when the weighing mechanism is in equilibrium within 0.5e of zero, zero should be checked as described in Document 104, with a load equal to, say, 10e on the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will then be 10e and 11e respectively.

### 3. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max) by more than 10 scale intervals; above this indicated mass the indicator should be blank.
- (b) Below zero the indicator should be blank.

### 4. Test Loads

Test loads are to be applied to the weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

### 5. Level Sensitivity (only for instruments fitted with a level indicator)

As the automatic zero device may prevent the zero from changing when the instrument is tilted at zero load, the effect of tilt should be initially checked with a small load on the instrument, say, 10e.

When the instrument is tilted so that the bubble in the level indicator moves 2 mm, the indication of 10e should not change by more than 2e, and when, in the tilted position, the 10e load is removed and zero is allowed to automatically reset, or it is manually reset, the instrument should satisfy the accuracy requirements given above.



# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4C/34

VARIATION No 1

Pattern: Hytech Model APO 25 Weighing Instrument

Submittor: Hytech Scales Pty Ltd  
3 Reserve Road  
Preston Vic 3072

1. Description of Variant 4

The pattern or variants using an alternative load cell and mounting. The platform is supported by a simple load bearing structure mounted directly to a load cell operating on the vibrating beam principle.

# National Standards Commission



## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/4C/34

CHANGE No 1

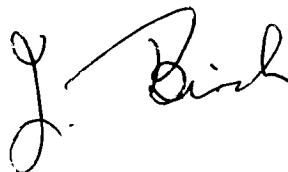
The following changes are made to the approval documentation for the

Hytech Model APO 25 Weighing Instrument

submitted by Hytech Scales Pty Ltd  
15 Bellevue Crescent  
Preston VIC 3072.

Test Procedure No 6/4C/34 dated 19/5/83 is replaced by the attached Test Procedure.

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





Note: The following Test Procedure replaces that dated 19/5/83.

### TEST PROCEDURE No 6/4C/34

Instruments should be tested in conjunction with any relevant tests specified in the Inspector's Handbook.

#### Maximum Permissible Errors at Verification/Certification

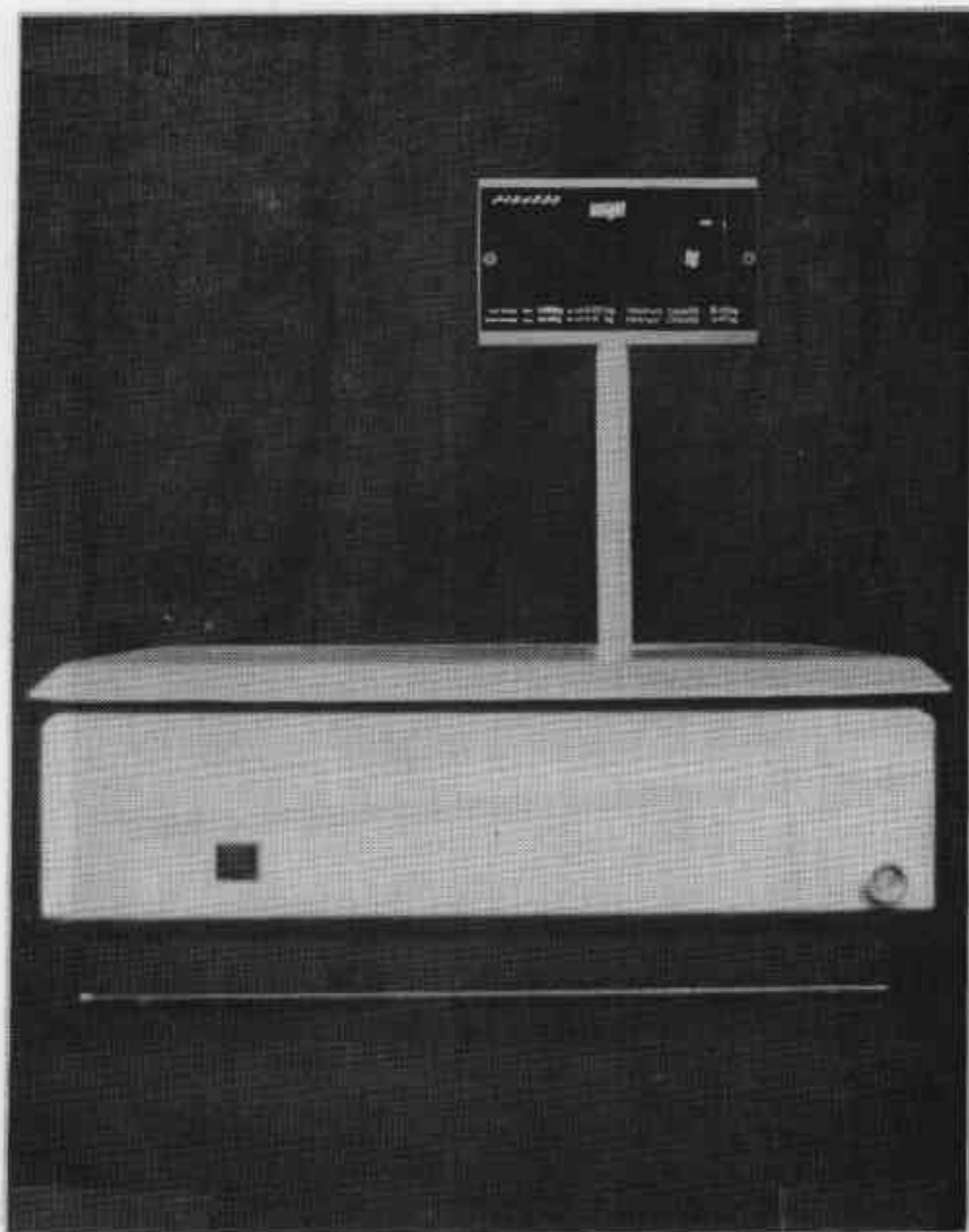
The maximum permissible errors for increasing and decreasing loads, expressed in terms of verification scale interval (e), with the instrument adjusted to zero within  $\pm 0.25e$  at no load, are:

- $\pm 0.5e$  for loads from 0 to 500e;
- $\pm 1.0e$  for loads over 500e up to 2 000e; and
- $\pm 1.5e$  for loads over 2 000e.

#### 1. Zero Range

With zero balance indicated apply a load of not less than 3%, and not more than 3.5%, of the maximum capacity and attempt to rezero the instrument; this should not be possible.

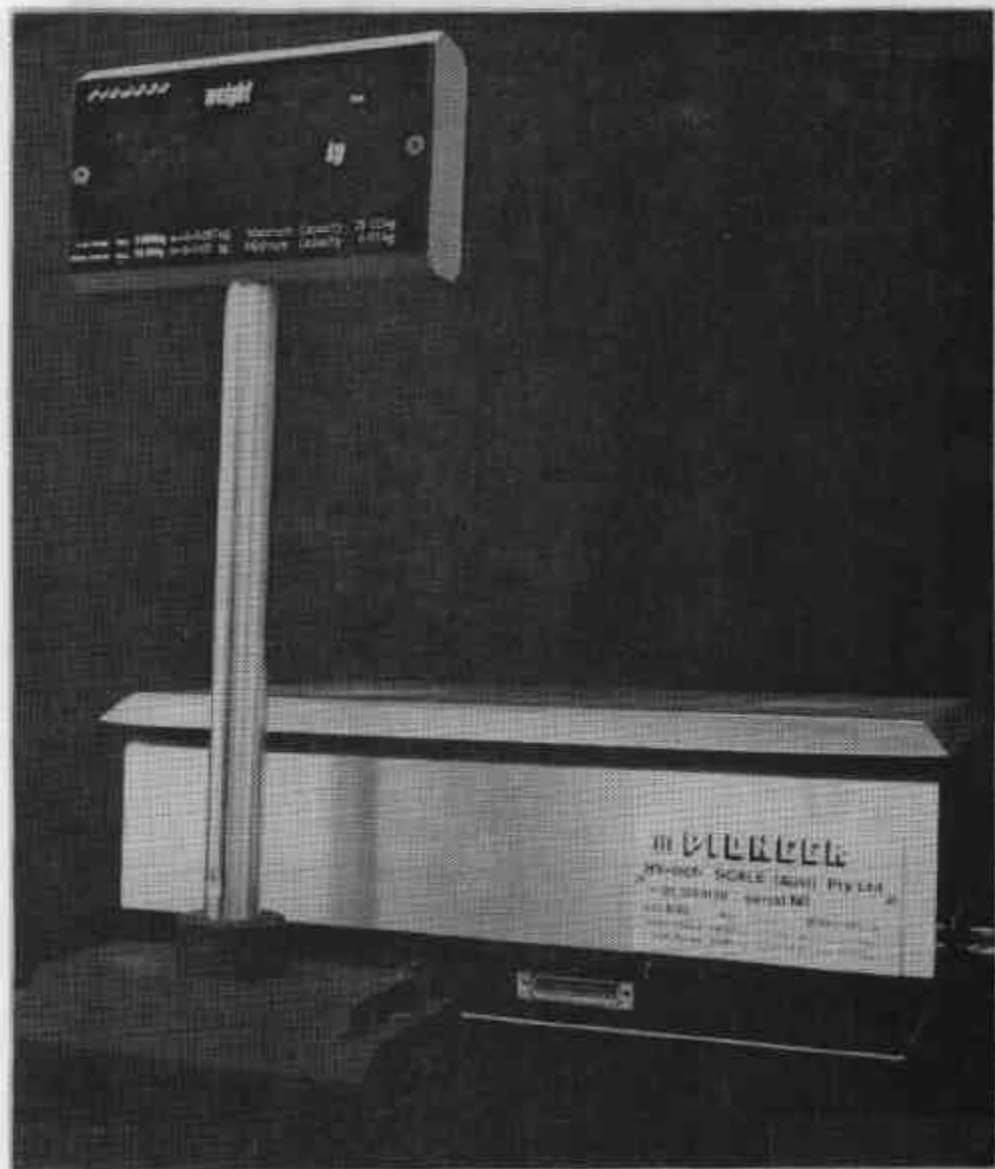
FIGURE 6/4C/34 - 1



Hy-Tech APO 25 - Vendor's View

19/5/83

FIGURE 6/4C/34 - 2



Model APO 25 - Purchasers' View

19/5/83

FIGURE 6/4C/34 - 3



Vendor's View



Purchasers' View

Model APO 25 In An Alternative Housing

19/5/83