

# NATIONAL STANDARDS COMMISSION

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## CERTIFICATE OF APPROVAL No 2/1/4

This is to certify that the pattern of the

Turner 636A Leather-measuring Instrument

submitted by British United Shoe Machinery Co. of Aust. Pty Ltd,  
423 Smith Street,  
Fitzroy, Victoria, 3065,

has been approved under the Weights and Measures (Patterns of Instruments) Regulations as being suitable for use for trade.

Date of Approval: 25 June 1976

The pattern is described in Technical Schedule No 2/1/4, and in drawings and specifications lodged with the Commission.

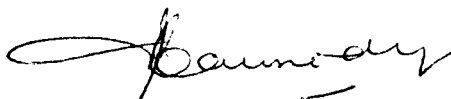
The approval is subject to review on or after 1 June 1981.

All instruments conforming to this approval shall be marked with the approval number "NSC No 2/1/4".

Approval is granted on condition that -

1. the acceptance tolerance is  $\pm (1 \text{ dm}^2 \text{ up to } 25 \text{ dm}^2, + 1 \text{ dm}^2 \text{ for each additional } 50 \text{ dm}^2 \text{ or part thereof})$  for each test area and, for the mean of 20 measurements of the same test area when repositioned between each measurement,  $\pm (0,25 \text{ dm}^2 \text{ up to } 25 \text{ dm}^2, + 0,5 \text{ dm}^2 \text{ for each additional } 50 \text{ dm}^2 \text{ or part thereof})$ ; and
2. the service tolerance is the same as the acceptance tolerance.

Signed



Executive Officer



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## TECHNICAL SCHEDULE No 2/1/4

Pattern: Turner 636A Leather-measuring Instrument

Submittor: British United Shoe Machinery Co. of Aust. Pty Ltd,  
423 Smith Street,  
Fitzroy, Victoria, 3065.

Date of Approval: 25 June 1976

### Conditions of Approval:

1. The acceptance tolerance is  $\pm (1 \text{ dm}^2 \text{ up to } 25 \text{ dm}^2, + 1 \text{ dm}^2 \text{ for each additional } 50 \text{ dm}^2 \text{ or part thereof})$  for each test area and, for the mean of 20 measurements of the same test area when repositioned between each measurement,  $\pm (0,25 \text{ dm}^2 \text{ up to } 25 \text{ dm}^2, + 0,5 \text{ dm}^2 \text{ for each additional } 50 \text{ dm}^2 \text{ or part thereof})$ .
2. The service tolerance is the same as the acceptance tolerance.
3. All instruments conforming to this approval shall be marked "NSC No 2/1/4".

### Description:

The pattern (see Figure 1) is an instrument for measuring the area of opaque sheets of leather. The area of the leather is determined by passing the leather between a light source contained within a rotating glass drum and 60 measuring wheels, the two end ones of which are inactive. Each measuring wheel has 16 holes equally spaced around its periphery and contains two fixed photo-cells, one adjacent to the glass drum and one adjacent to a fluorescent light above the measuring wheels. The upper photo-cells provide electrical pulses continuously and the lower photo-cells simultaneously provide pulses when leather is not being measured. The two simultaneous pulse trains are compared and cancel so that no pulses are provided to the counter. When the pulse train from the lower photo-cells is interrupted by placing the opaque leather between the photo-cells and the lower light source, the electrical pulses from the upper photo-cells are not cancelled and are counted, divided by a factor, and displayed on a ~~vacu~~vacuum-tube indicator in square decimetres ( $\text{dm}^2$ ) (see Figure 2). They may also be printed on a ticket (see Figure 3). Each pulse from the photo-cells represents an area of approximately  $645 \text{ mm}^2 (0,0645 \text{ dm}^2)$ .

The instrument calibration is adjusted by soldered links which allow the counter division factor to be varied.

In addition to the two measurement photo-cells contained within each measuring wheel, every fifth wheel contains an extra photo-cell which detects the leading and trailing edge of each piece of leather measured. A pulse denoting the leading edge resets the counter and indicator to zero before each measurement and provides a control signal when the end of the leather has passed.

Every tenth measuring wheel also contains a pull-back detector which immediately cancels any measurement when a piece of leather being measured is pulled back against the direction of travel of the measuring wheels.

The adjustable pulley driving the glass drum is fixed by welding the adjusting device; this prevents the speed of the glass drum from being changed after verification.

A four-position non-reversible switch which selects three test functions, and normal operation, is provided so that the operator can check the correct operation of the measuring system. This should be done regularly, not less than once each day. A notice adjacent to the switch is marked:

"check before using instrument

<u>Position</u>	<u>Indication</u>
Test 1	continuous counting
Test 2	0000 dm <sup>2</sup>
Test 3	xxxx ± 1 dm <sup>2</sup>
4	normal operation

Instrument not to be used if above checks indicate faulty operation"

xxxx being the area marked on the plate for the particular instrument

Output sockets are provided for peripheral devices for non-trade use, such as a batch counter.

The instrument is marked with -

Manufacturer's name or mark  
 Serial number  
 NSC approval number: NSC No 2/1/4  
 Maximum area: 999 dm<sup>2</sup>  
 Minimum area: 20 dm<sup>2</sup>  
 Verification scale interval: 1 dm<sup>2</sup>

A notice on the front of the instrument above the measuring wheel is marked:

"place leather with any straight edge at an angle to the direction of movement"

Special Test:

Measurement of the templets in the combinations of areas listed in Table 1 within tolerance will establish that the instrument performance is in conformity with the approved pattern.

TABLE 1

Test area	Templets	Tolerance on each of 20 measurements	Tolerance on mean of 20 measurements
dm <sup>2</sup>	dm <sup>2</sup>	dm <sup>2</sup>	dm <sup>2</sup>
20	20	± 1	± 0,25
30	10 + 20	± 2	± 0,75
70	20 + 50	± 2	± 0,75
80	10 + 20 + 50	± 3	± 1,25
100	100	± 3	± 1,25
120	20 + 100	± 3	± 1,25

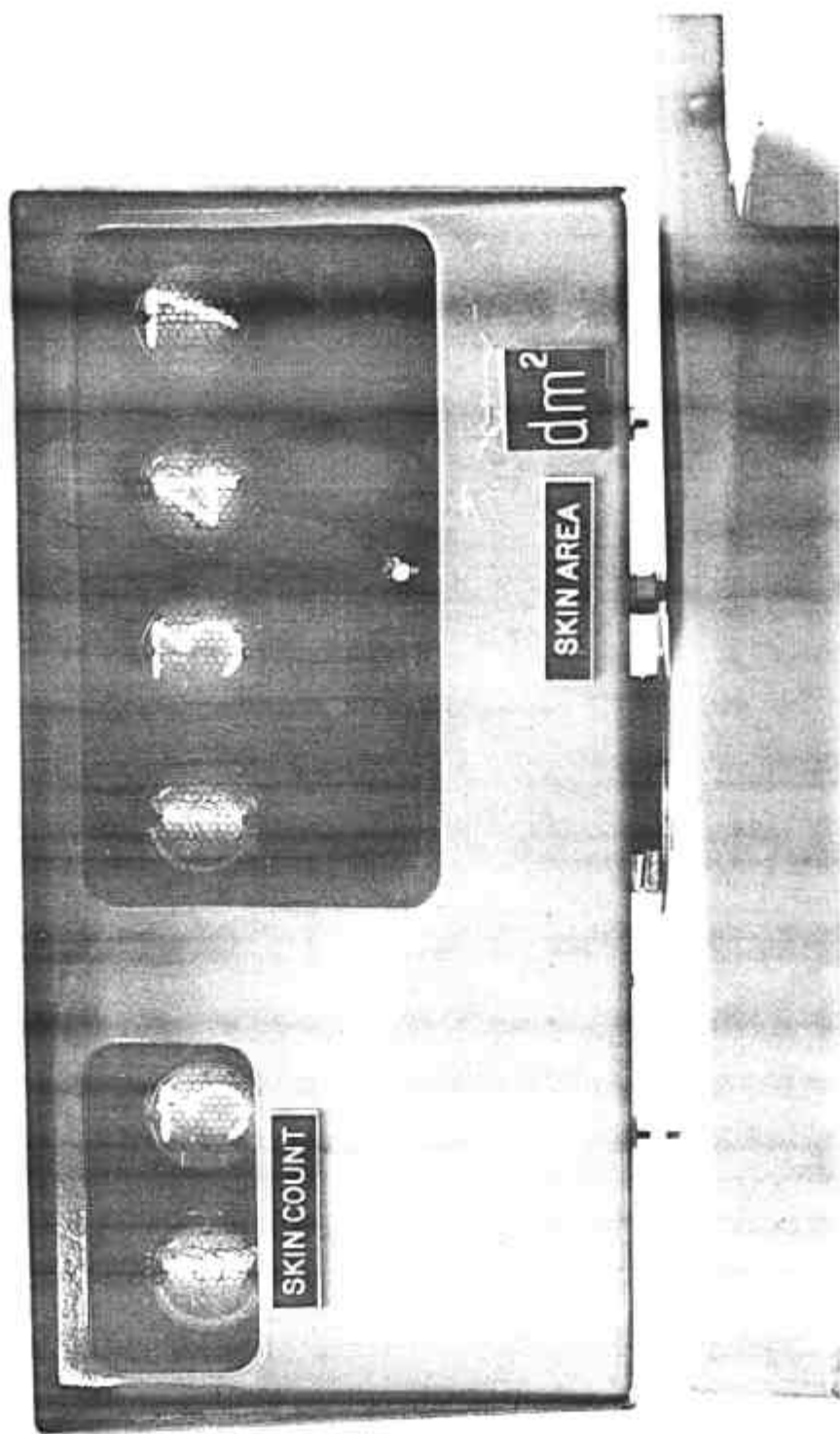
Test Procedure — Turner 636A

FIGURE 2/1/4 - 1



Turner 636A Leather-measuring Instrument

FIGURE 2/1/4 - 2



Nixie Tube Indicator

