NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S171

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

Bizerba Model MCA Digital Indicator

submitted by Bizerba Scales Aust. Pty Ltd
53-55 Ramsden Street
Clifton Hill, Victoria, 3068

are suitable for use for trade in any Commission-approved weighing instrument.

Conditions of Approval

This approval is subject to review on or after 1/7/89.

Instruments purporting to comply with this approval shall be marked NSC No S171 in addition to the approval number of the pattern to which they are connected.

This approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.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 any weighing instrument in which this indicator is used shall be no greater than the number of verification scale intervals approved for the basework, or the load cell(s) or the indicator (3000e) whichever is the smallest.

Signed

Executive Director

Descriptive Advice

Pattern: approved 25/6/84

. Bizerba model MCA digital indicator.

Variants: approved 25/6/84

1. With mass indication below zero.
2. In an alternative housing with a "touch" keyboard and displaying additional information, in which case it is known as a model MCI.
3. With provision to connect up to 4 load cells.
4. Without a zero indicator.

Technical Schedule No S171 describes the pattern and variants 1 to 4.

Filing Advice

The documentation for this approval comprises:

Certificate of Approval No S171 dated 23/11/84
Technical Schedule No S171 dated 23/11/84
Test Procedure No S171 dated 23/11/84
Figures 1 and 2 dated 23/11/84.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S171

Pattern: Bizerba Model MCA Digital Indicator

Submittor: Bizerba Scales Aust. Pty Ltd
53-55 Ramsden Street
Clifton Hill, Victoria, 3068

1. Description of Pattern

A digital mass indicator (Figure 1) approved for use with up to 3000 scale intervals and which may be provided with output sockets for the connection of auxiliary and/or peripheral devices.

1.1 Zero

a) The instrument may be zeroed to within 0.25e, indicated by the zero light illuminating, by operating the zero button.

b) An automatic zero tracking device may be fitted which resets zero to within 0.25e whenever the indicator returns to zero within 0.5e.

1.2 Tare

(a) A semi-automatic subtractive taring device allows a mass on the load receptor of up to maximum capacity to be tared to within 0.25e. Instruments are fitted with either a tare light or a tare mass indicator.

(b) The instrument may be fitted with a keyboard digital tare which may be used to enter any value of tare but is only effective up to the maximum capacity of the instrument. Several digital tare values may be stored and recalled.

(c) A button to clear tare may be fitted.

1.3 Display Check

A monitoring system continuously checks the display segments.

1.4 Marking

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Accuracy class	(III)
Serial number of instrument	
Maximum capacity in the form:	Max .....*
Minimum capacity in the form:	Min .....*
Verification scale interval in the form:	e = d = ...*
Maximum subtractive tare in the form:	T = - .....
NSC approval numbers - Indicator	NSC No S171
- Basework	
- Other components (as applicable)	
Load cell serial number(s)	

In addition, instruments shall be marked NOT FOR RETAIL COUNTER USE.

1.5 Verification Mark

Provision is made for a verification mark to be applied.

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* Repeated in the vicinity of each reading face.

1.6 Optional Buttons

The following buttons may be fitted:

- Fault simulation
- Check
- Print
- Gross/Net - in conjunction with Gross and Net indicators.

2. Description of Variants

2.1 Variant 1

With mass indication below zero.

2.2 Variant 2

In an alternative housing with a "touch" keyboard and known as a model MCI (Figure 2). Additional information may be displayed for managerial purposes.

2.3 Variant 3

The pattern or variants with provision to connect up to 4 load cells.

2.4 Variant 4

Without a zero light in which case a dual-circuit self-checking automatic zero-correction device is fitted.

TEST PROCEDURE No S171

The following tests should be carried out in conjunction with any test procedures in the Technical Schedule of the instrument to which this indicator is connected.

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). With zero balance indicated, apply a load of, say, 2.5% of maximum capacity to the instrument, and adjust the zero control; the instrument should not rezero.

2. Zero Test

(a) Check by means of Document 104, that when the zero light is lit, zero is set within 0.25e.

(b) As the automatic zero tracking device resets zero when the weighing mechanism is in equilibrium within 0.5 scale interval of zero, zero should be checked, with a load equal to, say, 10 scale intervals 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 or show non-numerical characters.

(b) Below zero the indication may blank or the mass will be indicated, prefixed by a minus sign.

4. Taring

(a) Attempt to tare a mass greater than the marked tare capacity. This should not be possible.

(b) The tare function should reset the mass indicator to zero within 0.25e at any load within its tare capacity. This may be checked as described under 2(a) - Zero Test.

5. Test Loads

Test loads are to be applied to the complete 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.

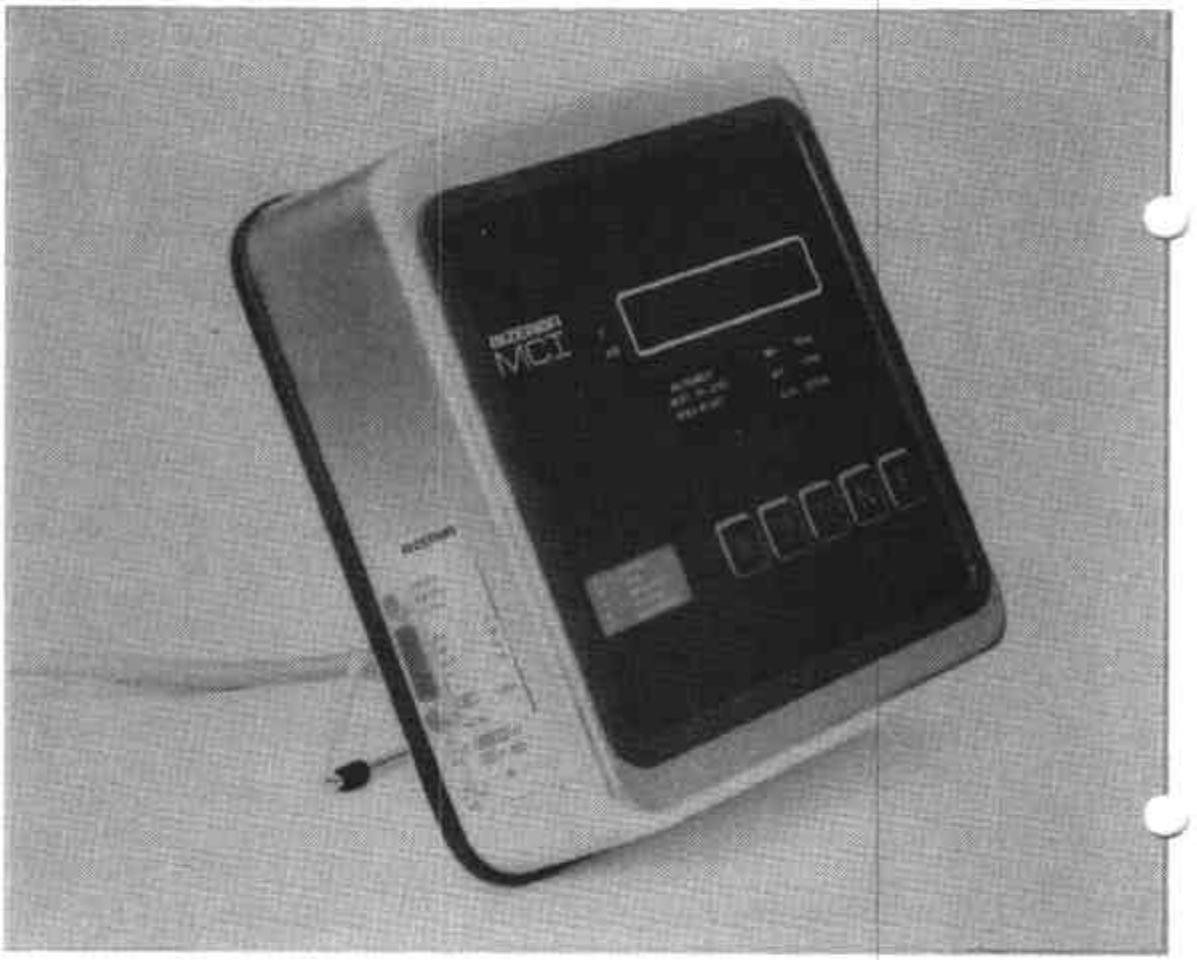
6. Multiple Indicators

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 on the device with the largest verification scale interval.

FIGURE S171 - 1

Bizerba Model MCA Indicator

FIGURE S171 - 2



Bizerba Model MCI Indicator