



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Certificate of Approval
NMI 6/10B/114**

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.

Koch Model KSD/W Weighing Instrument

submitted by Newcastle Weighing Services Pty Ltd
5C Murray Dwyer Circuit
MAYFIELD WEST NSW 2304

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 October 2015.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	17/12/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/10B/114' 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 Certificate of Approval No S1/0B.

This approval shall NOT be used in conjunction with General Certificate of Approval No 6B/0.

Note:

New instruments manufactured under this approval with analogue load cells connected parallel to each other in a junction box shall comply with 6-wire cable connection requirements between the junction box and the indicator as shown in Figures 4a and 4b.


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



Darryl Hines
Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No 6/10B/114

1. Description of Pattern **approved on 17/12/24**

A Koch model KSD/W class  self-indicating weighing instrument (Figure 1) which is part of a machine intended for the winding, weighing and strapping of wire coils. The instrument is approved for use with a maximum capacity of 6000 kg, a minimum capacity of 200 kg and a verification scale interval of 10 kg.

The instrument uses three load cells symmetrically located to support the load receptor.

The load cells are mounted on a carriage which can move vertically to engage a winding spool which is considered to be part of the load receptor (i.e. the instrument is at zero with the winding spool engaged). The winding spool is in two halves, with the upper section being able to be lifted off to remove the wire coil from the instrument.

The winding spool is able to be rotated about its centre (to facilitate strapping of the coil). In addition the machine incorporates two winding spools which can alternately form part of the load receptor (so that one coil can be weighed and strapped whilst the other is being wound).

An associated unit (Figure 1) is provided for the printing of weight value (and other information) and applying this to the coil.

The instrument is installed in a permanently fixed location.

The symmetrical nature of the coils and control of the location of the coils in the production line minimize the possibility of eccentric loading.

1.1 Load Cells

Three Revere Transducers model SSB 5000 load cells (Figure 2) each of 5 000 kg capacity are used in the instrument basework. The load cells are mounted using Revere Transducer supplied self-aligning mounts with stay rod assemblies.

NOTE: Only this make and model of load cells shall be used.

1.1.1 Load Cell Connection

The load cells are connected parallel together in a junction box; and 6-wire cable connection is used between the junction box and the indicator as shown in Figure 4a.

1.2 Indicator

The load cells are connected to a SysTec model IT8000E indicator.

1.3 Zero

A zero-tracking device may be fitted.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

1.4 Tare

A semi-automatic subtractive tare device and non-automatic keyboard-entered pre-set subtractive tare device, each of up to maximum capacity of the instrument, may be fitted.

1.5 Operation

The instrument operates according to a sequence of operations which is controlled by a programmable logic controller (PLC). This sequence includes checking of the zero condition of the instrument (and providing an error signal should the instrument not be at zero).

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Descriptive Markings and Notices

Instruments are marked with the following data:

Manufacturer's mark, or name written in full	Ernst Koch GmbH
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/10B/114
Maximum capacity	<i>Max</i> kg #1
Minimum capacity	<i>Min</i> kg #1
Verification scale interval	<i>e</i> = kg #1
Serial number of the instrument

#1 These markings are shown near the display of the result.

1.8 Sealing Provision

Provision is made for the calibration adjustments to be sealed by the use of at least two destructible adhesive labels one at each side of the back cover plate of the instrument (Figure 3a).

The calibration parameters are stored within the ADM module for each platform. The ability to change these parameters is inhibited when the jumper 'W1' on each ADM module is in the protected location (connecting pins 1 and 2, as shown in Figure 3b).

1.9 Software

The software is identified by a checksum number 15487782 and designated version V4.x.y, where 'x.y' refers to the identification of non-legally relevant software.

The software checksum and version can be seen by pressing and holding weight display for minimum 2 seconds (the identification is displayed momentarily), and then pressing the right arrow button, the software checksum and version are displayed.

TEST PROCEDURE No 6/10B/114

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures, subject to the following notes:

Notes:

See clause **1. Description of Pattern** in regard to special features of this instrument.

Due to safety considerations, testing is carried out by loading test masses onto the winding spool whilst the weighing mechanism is not engaged (i.e. it is lowered). The weighing mechanism is then engaged (raised) and weight readings taken.

This is carried out with successive loads – a possible sequence being:

- 1 t on top of the spool;
- 2 t on top of the spool;
- 4 t on lower inside surface of the spool;
- 4 t on lower inside surface and 1 t on top of spool;
- 4 t on lower inside surface and 2 t on top of spool.

A repeatability test may be carried out by successively engaging and disengaging the weighing mechanism with 4 t applied to the winding spool.

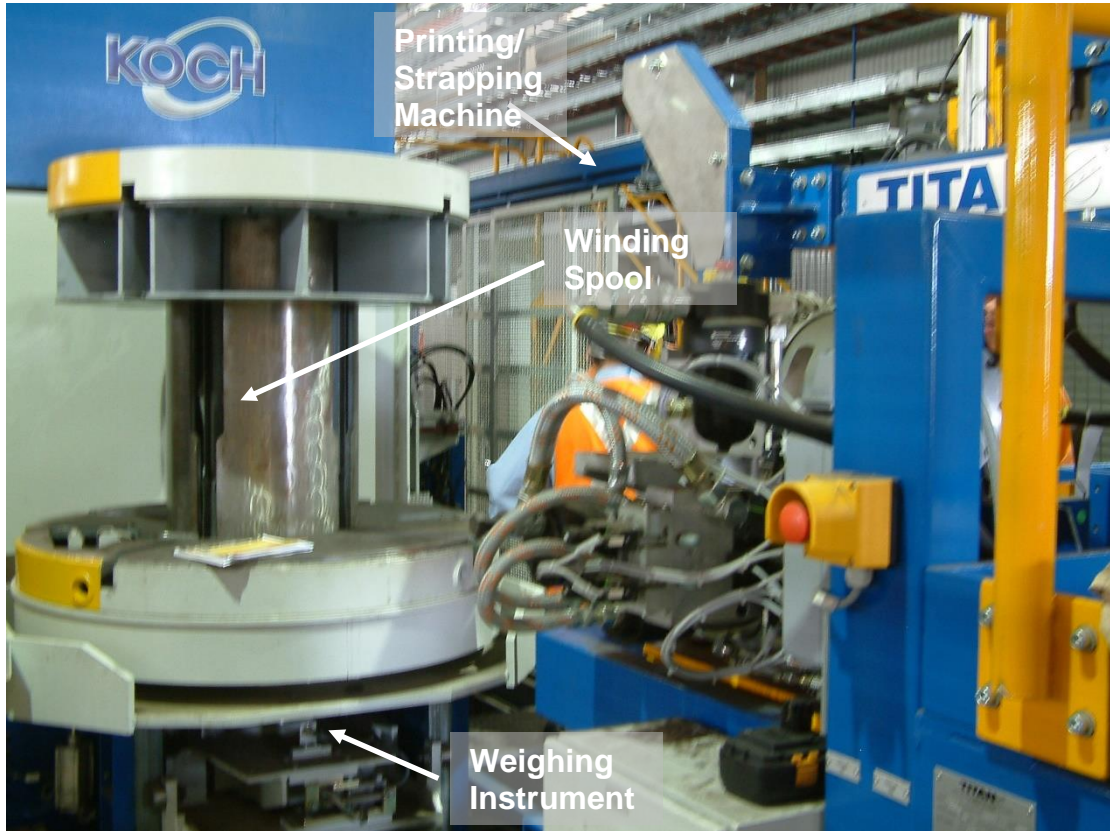
In view of the special nature of the instrument, as well as safety considerations, an eccentricity test may be carried out by locating a load of 500 kg eccentrically (on the top surface of the winding spool) above each of the load cells (approximately half-way between the centre of the spool and its outside edge).

A check shall be carried out to ensure that the instrument is at zero when either of the two winding spools is used.

Maximum Permissible Errors

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

FIGURE 6/10B/114 – 1



Koch model KSD/W Weighing Instrument

FIGURE 6/10B/114 – 2

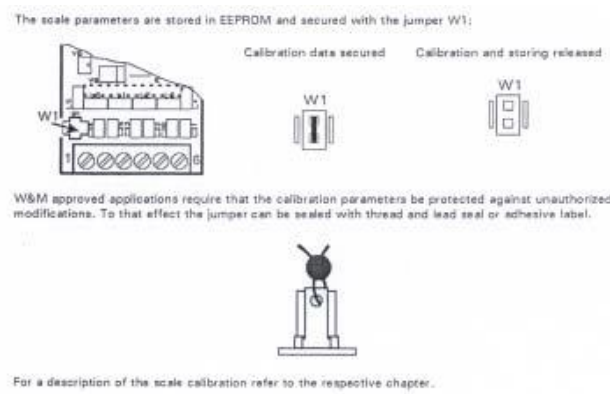


Revere Transducers Model SSB 5000 Load Cell
(shown on its own and in its mounting arrangement)

FIGURE 6/10B/114 – 3



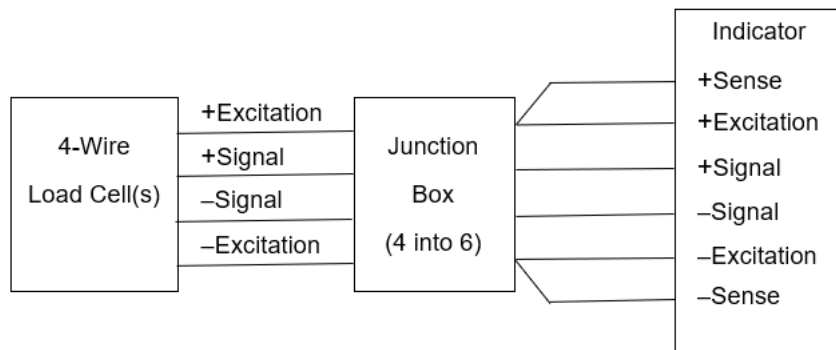
(a) Typical Sealing of SysTec Model IT8000E Digital Indicator



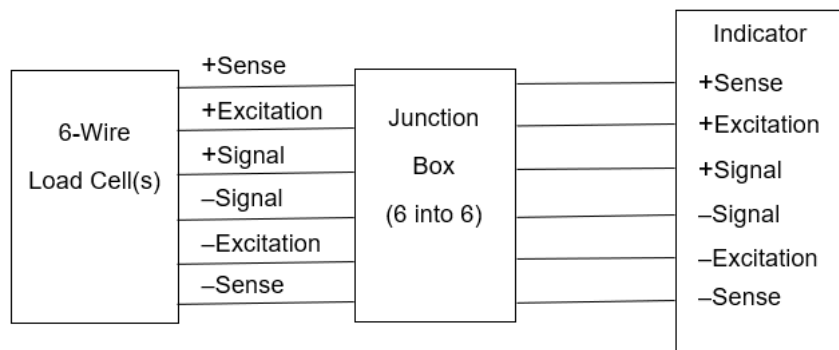
(b) Showing Jumper W1 Sealing – Model IT8000E

Typical Sealing Methods

FIGURE 6/10B/114 – 4



a) 4-Wire Analogue Load Cell Connection Using Junction Box



b) 6-Wire Analogue Load Cell Connection Using Junction Box

~ End of Document ~