



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
No 6/10B/83

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

Koch Model KSD/W Weighing Instrument

submitted by Newcastle Weighing Services Pty Ltd
 104-114 Hannell Street
 WICKHAM NSW 2293.

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 December 2012, and then
every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with
approval number 'NMI 6/10B/83' 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.

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.

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

DESCRIPTIVE ADVICE

Pattern: approved 23 November 2007

- A Koch model KSD/W self-indicating weighing instrument of 6000 kg maximum capacity (the weighing instrument is part of a wire coil winding machine).

Technical Schedule No 6/10B/83 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 6/10B/83 dated 21 January 2008
Technical Schedule No 6/10B/83 dated 21 January 2008 (incl. Test Procedure)
Figures 1 and 2 dated 21 January 2008

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

A handwritten signature in black ink, appearing to be 'J. G. T.', located in the bottom right corner of the page.

TECHNICAL SCHEDULE No 6/10B/83

Pattern: Koch Model KSD/W Weighing Instrument

Submittor: Newcastle Weighing Services Pty Ltd
104-114 Hannell Street
WICKHAM NSW 2293

1. Description of Pattern

A Koch model KSD/W 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 (e) 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.

1.2 Indicator

The load cells are connected to a Systec model IT8000 indicator, as described in the documentation of approval NSC S439.

1.3 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).

1.4 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.

1.5 Markings

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Ernst Koch GmbH
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/10B/83
Pattern approval mark for the indicator	S439
Maximum capacity	Max kg *
Minimum capacity	Min kg *
Verification scale interval	e = kg *
Serial number of the instrument

* These markings shall also be shown near the display of the result if they are not already located there.

1.6 Verification/Certification Provision

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

TEST PROCEDURE

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:

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

Instruments should be tested in accordance with any relevant tests specified in the Uniform 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:

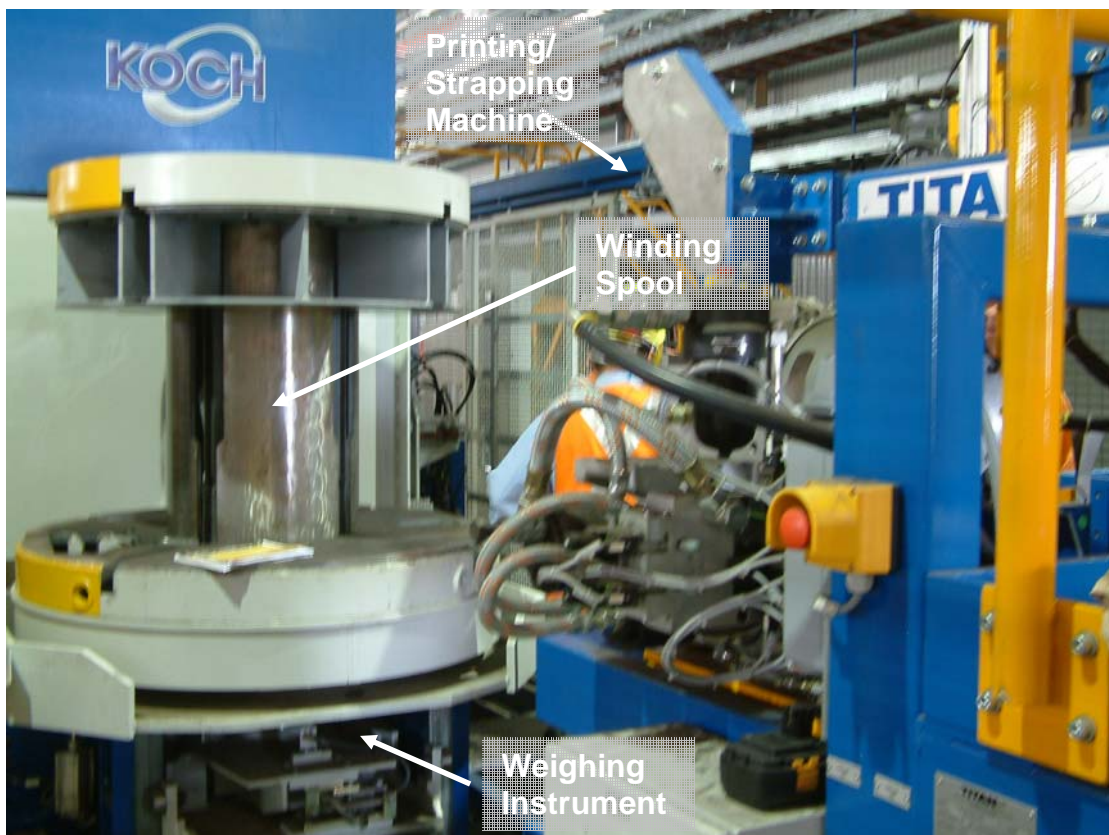
- 1 t mass on top of the spool;
- 2 t mass on top of the spool;
- 4 t mass on lower inside surface of the spool;
- 4 t mass on lower inside surface and 1 t mass on top of spool;
- 4 t mass on lower inside surface and 2 t mass on top of spool.

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).

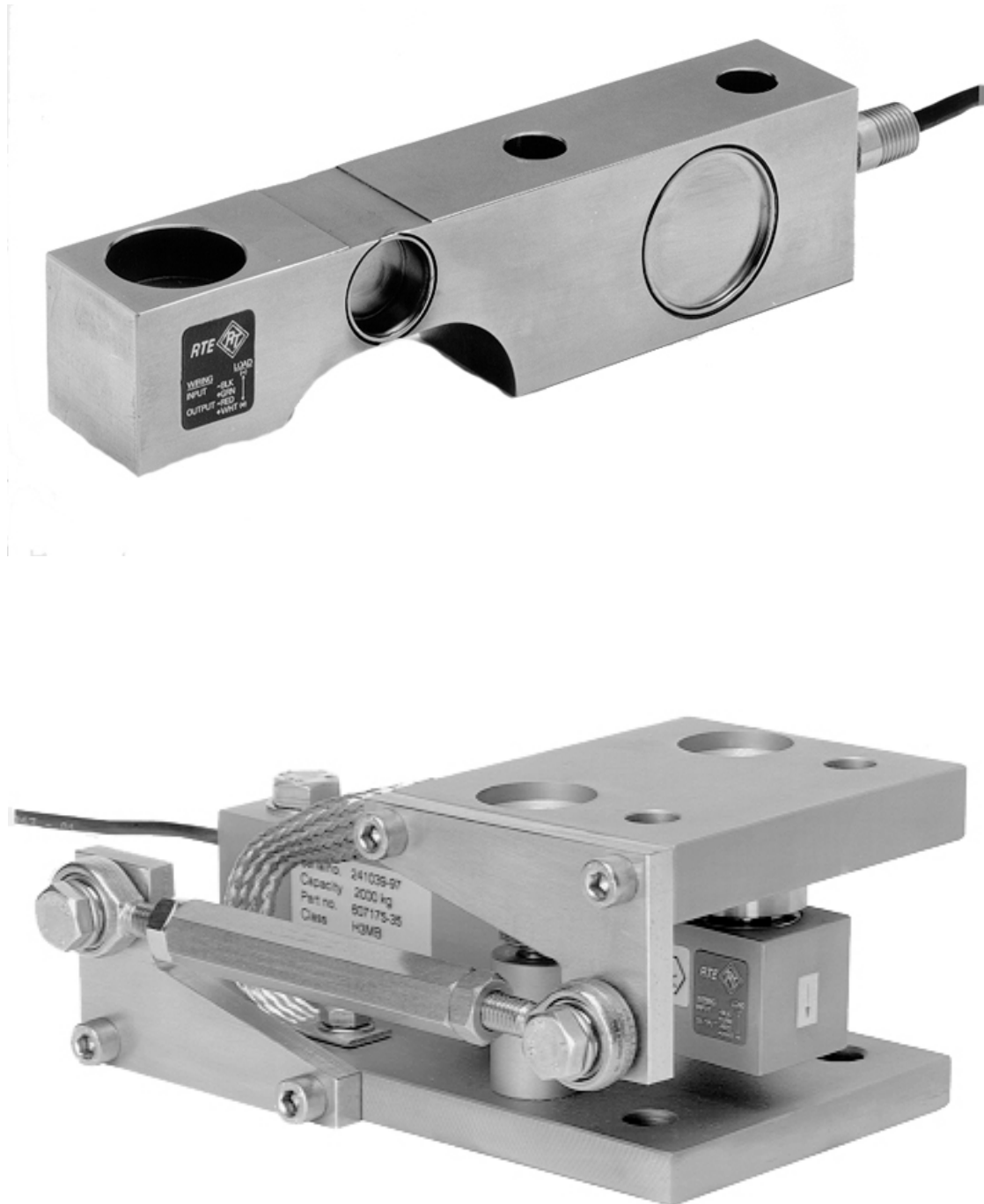
A check shall be carried out to ensure that the instrument is at zero when either of the two winding spools is used.

FIGURE 6/10B/83 – 1



Koch model KSD/W Weighing Instrument

FIGURE 6/10B/83 – 2



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