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6/14D/11
3/11/86

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/14D/11

This is to certify that an approval for use for trade has been granted in respect of the pattern and variants of the

Ramsey Model 10-14 Belt Conveyor Weigher

submitted by Ramsey Engineering Pty Ltd
20 Box Road
Taren Point NSW 2205.

CONDITIONS OF APPROVAL

General:

This approval is subject to continuing review.

Instruments purporting to comply with this approval shall be marked NSC No 6/14D/11.

This approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.

Special:

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

The load cells used shall be subject to regular certification by the Commission.

The submittor shall notify the Commission of each instrument to be submitted to Weights and Measures Authorities for verification. *

Means shall be provided to ensure that the conveyor cannot move in the reverse direction.

Additional Special Conditions for Provisional Variants:

The variants are provisional subject to the successful testing of instruments incorporating the variants.

The Commission must be advised of the design parameters of each installation prior to verification, to enable an assessment of the particular site conditions.

The Commission must be provided with the results of all verification testing.

Signed

J Birch

Executive Director

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* Inspectors should not verify any instrument purporting to comply with this approval until advised in writing by the Commission.

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Descriptive Advice

Pattern: approved 30/10/84

. Ramsey model 10-14 class I belt conveyor weigher using an Analogic 5322 load cell digitiser, Ramsey 40-17R integrator/totaliser and HBM Z3H2 200 kg load cells.

The instrument is approved for use with coal over a flow rate range of 40% to 100% of maximum flow rate (1000 tonnes per hour) and with the weigh frame inclined up to 5°.

Variant: approved 30/10/84

1. Using other tension load cells Commission-approved for use with no less than 2000 scale intervals.

Variants: provisionally approved 30/10/84

2. With the weigh frame inclined up to 20°.

3. With a flow rate range of 20% to 100% of maximum flow rate.

4. With various maximum flow rates, using weigh frames and load cells of various capacities.

5. For use with materials other than coal.

6. Using other tension load cells Commission-approved for use with no less than 1000 scale intervals.

Variant: approved 25/3/85

7. With a Ramsey 10-201 digitiser/integrator replacing the Analogic 5322 digitiser and the Ramsey 40-17R integrator/totaliser.

Technical Schedule No 6/14D/11 describes the pattern, variants 1 and 7, and provisional variants 2 to 6.

Variant: provisionally approved 2/7/86

8. With a model 10-17 basework with the weigh frame inclined up to 15°.

Technical Schedule No 6/14D/11 Variation No 1 describes provisional variant 8.

Filing Advice

Certificate of Approval No 6/14D/11 dated 26/4/85 is superseded by this Certificate and may be destroyed.

Note: The Technical Schedule attached herein includes an amendment to the Technical Schedule dated 26/4/85.

The documentation for this approval now comprises:

Certificate of Approval No 6/14D/11 dated 3/11/86
Technical Schedule No 6/14D/11 dated 26/4/85
Technical Schedule No 6/14D/11 Variation No 1 dated 3/11/86
Test Procedure No 6/14D/11 dated 26/4/85
Figures 1 and 2 dated 26/4/85
Figure 3 dated 3/11/86

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/14D/11

Pattern: Ramsey Model 10-14 Belt Conveyor Weigher

Submittor: Ramsey Engineering Pty Ltd
20 Box Road
Taren Point NSW 2229

1. Description of Pattern

The pattern is a class I belt conveyor weigher of 1000 t/h maximum flow rate. The instrument is approved for use with coal over a flow rate range of 40% to 100% of maximum flow rate.

The instrument is approved with a maximum weigh length of 4.6 m and a maximum belt speed of 3.6 $m.s^{-1}$.

The instrument may be fitted with output sockets for the connection of auxiliary and/or peripheral equipment.

1.1 Basework (Figure 1)

Four idler rollers are mounted on a frame which is suspended from two beams which span the conveyor stringers. Four HBM Z3H2 200 kg load cells in tension, connect the support beams to the floating weigh frame, which is stabilised by four tie rods.

The conveyor may be inclined up to 5° from the horizontal.

1.2 Belt Speed Sensor

A Ramsey model 60-12 digital speed sensor (Figure 2) is used.

1.3 Computing and Totalising Unit

The load cell output is digitised by the Analogic 5322 digitiser. The mass information is then integrated with respect to belt speed and totalised, by the Ramsey model 40-17R integrator/totaliser (Figure 2).

1.4 Marking

Instruments shall be clearly and permanently marked on one or more permanently attached nameplates with the following information:

Manufacturer's name or mark	
Model number	
Serial number	
Accuracy class	
NSC approval number	NSC No 6/14D/11
Maximum flow rate	Q max .....
Minimum totalised load	Min .....
Maximum capacity of the weighing unit	Max .....
Scale interval of totaliser	d = ...
Belt speed	V = ...
Weigh length	L = ...

NOTE: The minimum totalised load may be determined at verification (see Test Procedure) except for the instruments located at Cooranbong, NSW (serial number 0127-C1) and Myuna, NSW (serial number 0127-M3) for which the minimum totalised load is 1000 tonnes.

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2. Description of Variants

2.1 Variant 1

Using other tension load cells Commission-approved for use with no less than 2000 scale intervals.

2.2 Provisional Variant 2

With the weigh frame inclined up to 20°.

2.3 Provisional Variant 3

With a flow rate range of 20% to 100% of maximum flow rate.

2.4 Provisional Variant 4

With various maximum flow rates, using weigh frames and load cells of various capacities.

2.5 Provisional Variant 5

For use with materials other than coal.

2.6 Provisional Variant 6

Using other tension load cells Commission-approved for use with no less than 1000 scale intervals.

2.7 Variant 7

Using a Ramsey model 10-201 digitiser/integrator replacing the Analogic 5322 digitiser and Ramsey 40-17R integrator/totaliser of the pattern.

TEST PROCEDURE No 6/14D/11

Instruments should be tested in accordance with the Commission's Pattern Approval Manual (Design Manual) No 9 for belt conveyors, as detailed below.

Document 119 - Part 4, Material Tests

Regarding the Zero Error test, where the zero deviation in one belt revolution is greater than 1d, (i.e. where the totaliser indication increases or decreases by more than 2 scale intervals*) the minimum totalised load shall be no less than:

For Class 1 instruments: 2000 x the zero deviation in one belt revolution.

For the purpose of testing the above the zero variation shall be recorded over at least two belt revolutions, to obtain assurance that the variations observed are repeatable. For subsequent tests (i.e. between load tests) the zero variation need only be observed over one belt revolution.

* The test should commence from the moment when the indicator changes (the changeover point).

Document 102 - Part 2, Scope of Design Rules
Part 3, Performance Requirements

TECHNICAL SCHEDULE No 6/14D/11

VARIATION No 1

Pattern: Ramsey Model 10-14 Belt Conveyor Weigher

Submittor: Ramsey Engineering Pty Ltd
20 Box Road
Taren Point NSW 2229

1. Description of Variant 8

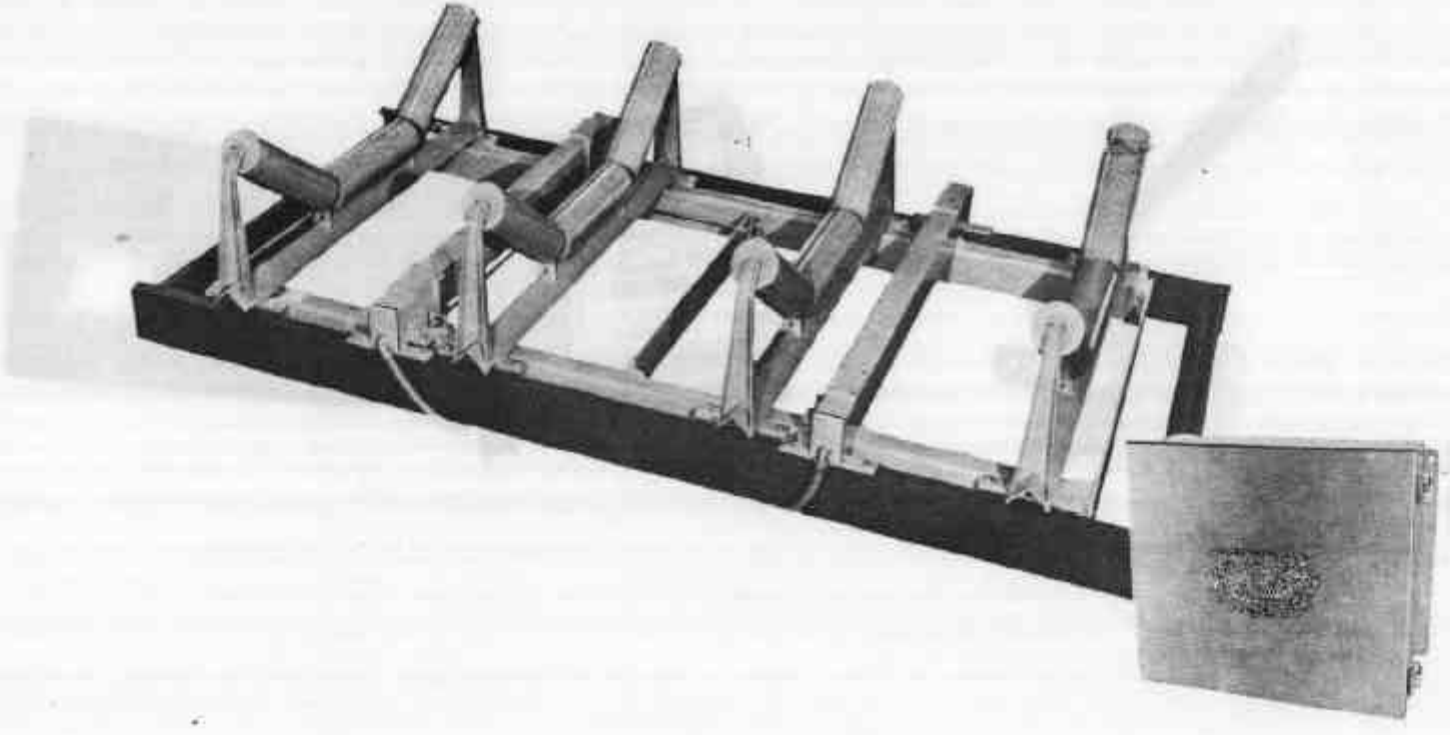
With a model 10-17 basework with a weigh length of up to 4 m (Figure 3). Two idler rollers are mounted on a frame which has a fulcrum at one end consisting of two rubber bushes and is supported between the idlers by two HBM Z3H2 100 kg load cells. The conveyor may be inclined at up to 15° from the horizontal (Note: Variant 2, allowing inclinations of up to 20°, shall not be applied to this instrument).

Notification of Change

In Technical Schedule No 6/14D/11 dated 26/4/85, amend clause 1.1 Basework by altering the first sentence to read, in part:

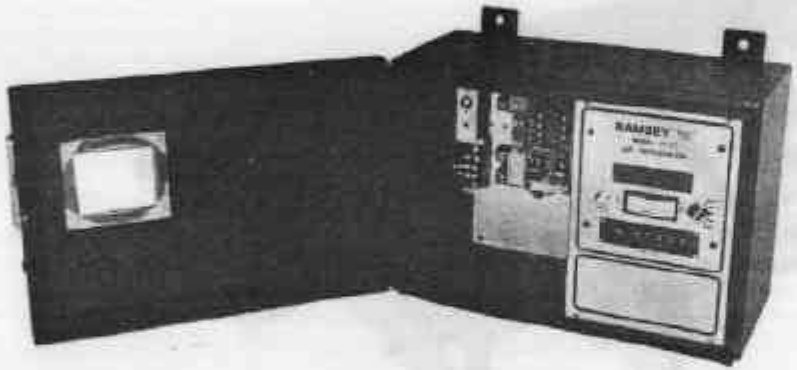
"A number of idler rollers (no less than three) are mounted on a frame ..."

FIGURE 6/140/11 - 1



Ramsey 10-14 Belt Conveyor Weigher

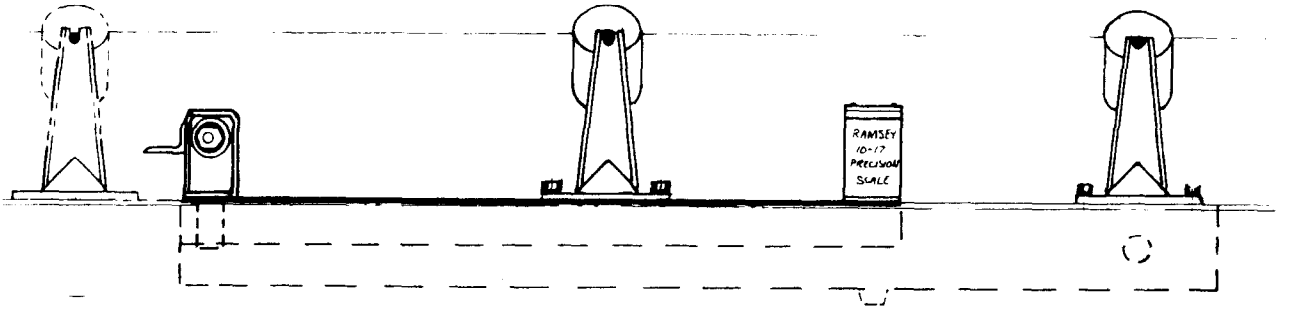
FIGURE 6/14D/11 - 2

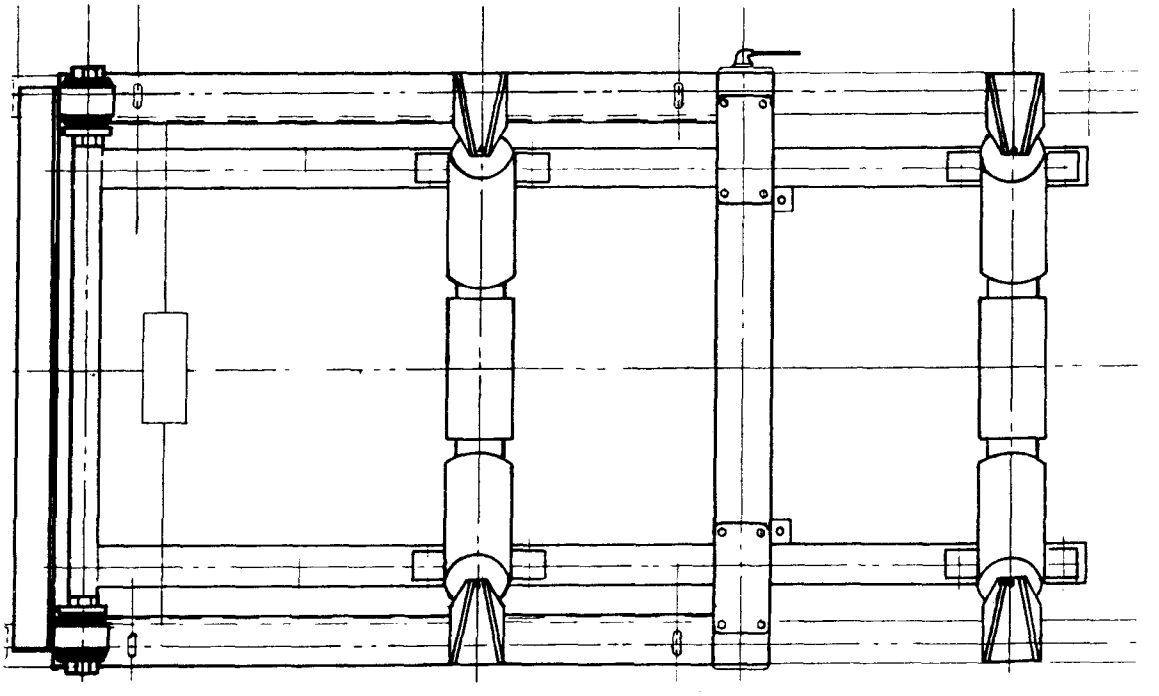


Integrator/Totaliser

Speed Sensor

FIGURE 6/14D/11 - 3





Model 10-17 - Schematic