



Australian Government
Department of Industry,
Innovation and Science

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Interim
Provisional
Certificate of Approval
NMI 13/1/17**

VALID FOR VERIFICATION PURPOSES UNTIL 1 November 2020

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.

Atrax Model RVSS 3 Dimensional Measuring Instrument

submitted by Atrax Group NZ Ltd
 390a Church Street
 Penrose, Auckland
 NEW ZEALAND

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 129, *Multi-dimensional Measuring Instruments*, dated July 2004.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	16/03/10
1	Variant 1 approved – certificate issued	21/10/10
2	Variant 2 provisionally approved – interim certificate issued	15/10/18

Document History (cont...)

Rev	Reason/Details	Date
3	Variant 2 amended (validity date) – interim certificate issued	25/10/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 13/1/17' 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 No S1/0B.

Special

Instruments are only approved for use for determination of the dimensions and volume of the smallest rectangular box that could contain an object, for the purposes of determining freight or postal charges.

The dimensions determined may also be used for the calculation (by peripheral equipment) of a volume and/or 'dimensional weight' (*) value of the object, also for the purposes of determining freight or postal charges.

(*) A 'dimensional weight' value is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume.

Special Conditions of Approval: (Provisional Approval Variant 2)

This approval is limited to five (5) instruments only, the locations of which may be obtained from the National Measurement Institute. The submitter shall advise NMI in writing of the proposed location or serial number of each instrument prior to it being initially verified.

Instruments purporting to comply with Variant 2 of this approval shall be marked with approval number 'NMI P13/1/17' and only by persons authorised by the submitter. (Note: The 'P' in the approval number may be a temporary marking.)

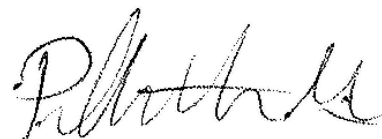
The approval will remain provisional pending completion of satisfactory testing and evaluation.

The submitter shall provide the NMI Pattern Approval Laboratory with copies of test results from the initial verification.

In the event of unsatisfactory performance the approval may be cancelled (or altered).

The submitter shall implement such modifications as required by NMI. In the event that such modifications (if any are required by NMI) are not made to the satisfaction of NMI, this approval may be withdrawn.

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



Phillip Mitchell
A/g Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 13/1/17

1. Description of Pattern approved on 5/03/14

An Atrax model RVSS 3 version Standard Type C dimensional measuring instrument which is approved for use for the determination of the linear dimensions of stationary objects. Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

1.1 Details

The pattern (Figure 1) is an Atrax model RVSS 3 (Rotating Volume Scanner System) version Standard Type C which includes a model RVSB (Rotating Volume Scanner Beam) unit, an Atrax model ISP 422-PRO MK3 (or MK4) data evaluation unit, and a System Integration PC (SIPC) touchscreen operator console and display unit. An Atrax model VSD 3 display unit may also be used.

The pattern is approved for use for the determination of the linear dimensions of objects having maximum dimensions (i.e. length \times width \times height) of 400 \times 300 \times 300 cm and minimum dimensions 20 \times 20 \times 20 cm, with a scale interval of measurement (d) of 20 mm. Note that when the length is greater than 300 cm then the width will be less than 300 cm, to fit within the defined measurement area.

The pattern converts the detected characteristics into the linear dimensions of the smallest rectangular box (parallelepiped – #) that would fully contain the object.

The pattern is approved for use in measuring the linear dimensions of opaque objects only; the dimensions determined may also be used for the calculation of volume and/or 'dimensional weight' value (*) of the item (refer to the Special Conditions of Approval).

Objects are measured statically by being positioned manually in the defined measurement area.

- (#) A rectangular box (parallelepiped) is a polyhedron having six faces that are parallel in pairs; each face is a parallelogram and adjacent edges are perpendicular.
- (*) A '**dimensional weight**' value is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume as calculated from the measured dimensions.

1.2 Dimensioning System

The RVSB (Rotating Volume Scanner Beam) unit (Figure 1) includes two SICK model LMS200-30106 laser scanners mounted on a rotating beam and attached to a frame above the defined measurement area. A Hohner model 1440-132R-1024 or an Altra model EL88P1024 encoder is used to measure the position of the beam as it rotates.

As the beam rotates the data from the laser scanners and the encoder are transmitted to the control unit and used to determine the dimensions of the object in the measurement area.

1.3 Data Evaluation Unit

An Atrax model ISP 422-PRO MK3 (or MK4) data evaluation unit controls the measurement operation, processes signals received from the RVSB unit and provides data output to the operator console/display unit. The ISP operates with version 4.xx software. The ISP unit must be sealed.

1.4 Control Unit

The RVSC (Rotating Volume Scanner Control) unit (Figure 2) is mounted on the frame of the RVSB beam unit or in a nearby suitable location.

The control unit includes the data evaluation unit, and indicator lamps to signal when the system is operating, a measurement is in progress or an error has been detected.

1.5 Display Unit

A System Integration PC (SIPC) touchscreen operator console and display unit (Figure 2a) is used to initiate measurements and to indicate results. This unit may be housed in the control unit (Figure 2a) or separately.

An Atrax model VSD 3 display unit (Figure 2c) may also be used.

1.6 Indications

Measurement data is displayed on the operator console/display unit or is made available from the control unit to other systems for indication and/or printing.

Printed and displayed information must be made available for verification and must comply with the requirements set out in NMI Document NMI R129, *Multidimensional Measuring Instruments*, dated July 2004, in particular as per the extract below.

7.9.1 Any printed ticket or displayed indication shall include sufficient information to identify the transaction, for example:

- (a) dimensions: length (L), width (W) and height (H);
- (b) volume (vol);
- (c) weight (Wt) if the instrument includes a weighing instrument;
- (d) dimensional weight (Dim Wt ... kg or DW ... kg);
- (e) dimensional tare (DT ... kg);
- (f) conversion factor (F);
- (g) quantity for charging, for example dimensions, vol or DW ... kg;
- (h) price rate and price; and
- (i) date, transaction number or other identification of the object.

Note 1: Icons may be used to identify indications.

Note 2: When the customer is not present during the measurement process the above information need not be displayed or printed out at the time but shall be available on request.

Note 3: The price interval and the price rate shall comply with the national regulations applicable for trade.

7.9.2 A printed ticket shall also contain the following printed or preprinted information:

- (a) that the dimensions and/or volume shown are those of the smallest rectangular box that fully encloses the object; and
- (b) that the dimensional weight is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume or dimensions.

1.7 Descriptive Markings

- (a) Instruments carry the following markings (in the vicinity of the indicating device):

Manufacturer's mark, or name written in full	Atrax Group
Model designation
Serial number of the instrument
Year of manufacture
Pattern approval mark	NMI 13/1/17
Maximum dimensions for each axis	<i>Max</i> mm (#)
Minimum dimensions for each axis	<i>Min</i> mm
Scale interval	<i>d</i> = mm

- (b) Instruments carry one or more notices stating REFLECTIVE OR TRANSPARENT ITEMS CANNOT BE MEASURED, or similar wording.
- (#) Instruments may be marked with the maximum dimension for **each** axis (e.g. 'Max length 400 cm', 'Max width 300 cm', etc.) or alternatively just marked with the maximum dimension for **any** axis (e.g. 'Max 400 cm'). refer also to clause 1.1 **Details**.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Sealing Provision

Provision is made for sealing calibration adjustments in the ISP data evaluation unit enclosure by means of a sealing label applied over one or more housing screws (Figure 2b) which must be removed before adjustments can be made.

2. Description of Variant 1

approved on 12/11/15

The Atrax model RVSS 3 version Standard Type A which is similar to the pattern (Type C) except that the System Integration PC (SIPC) touchscreen operator console is not fitted – the model VSD 3 display unit is mandatory for Type A instruments for the indication of measurement results.

Commands to initiate a measurement operation are provided by a separate console or system (e.g. a personal computer, barcode scanner) which is not part of this approval.

3. Description of Variant 2 **provisionally approved on 15/10/18**
amended on 25/10/19

An Atrax model Scanatrx RVSS 3D (Figure 3) which is similar to the pattern with the Sick model LMS200-30106 laser scanners described in **1.2 Dimensioning System** replaced with Sick model LMS500-20000 PRO laser scanners.

The Scanatrx Data Evaluation Unit ISP 422-PRO MK3 (or MK4) described in **1.3 Data Evaluation Unit** have been replaced with panel mount industrial computer and operates with VCU version 0.xx.xx software and System Integration PC (SIPC) described in **1.5 Display Unit** is replaced with panel mount industrial computer operates with TOD version 1.xx.xx.xx software.

TEST PROCEDURE No 13/1/17

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Note: Refer to clause **1.6 Indications** – Printed and displayed information must be made available for verification and must comply with the requirements set out in document NMI R 129, *Multi-dimensional Measuring Instruments*, dated July 2004.

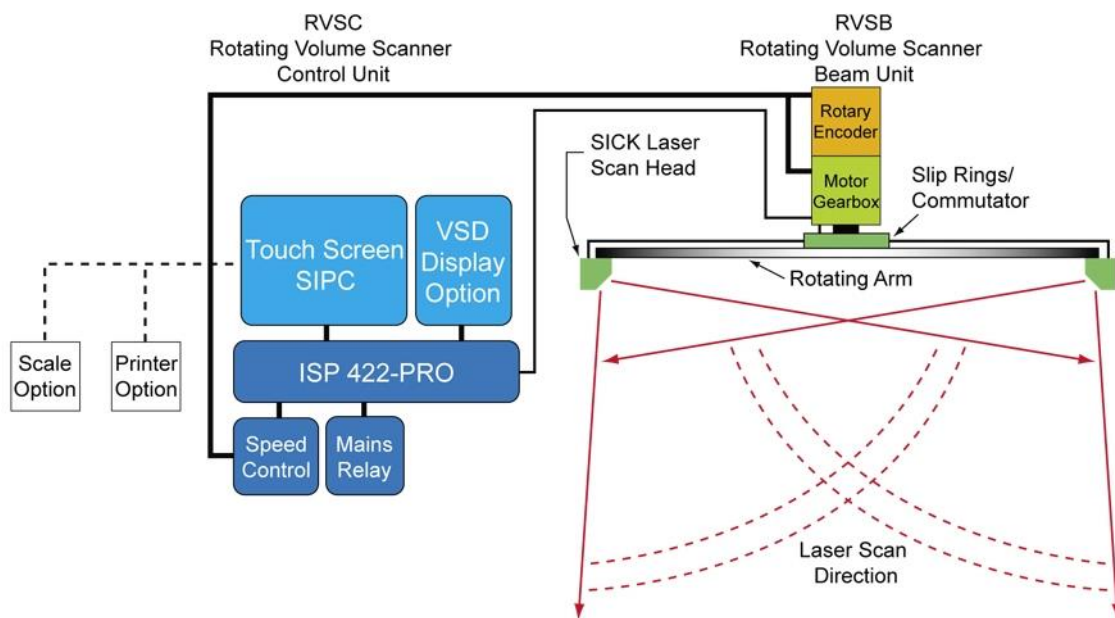
Maximum Permissible Errors

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

Instruments shall be tested as follows:

- (a) Test objects shall be used, in the shape of rectangular boxes with known linear dimensions such that each axis (i.e. length x width x height) is tested for at least five dimensions between and including the minimum and maximum dimensions (approximately) specified on the instrument nameplate. Each test object shall be non-sound absorbing, rigid and with flat faces and well-defined edges. All adjacent faces and edges shall be perpendicular to each other. The dimensions shall be equal to Nd and the lengths shall be known to an uncertainty equal to or better than $\pm 1/5$ of the maximum permissible error, which is equal to the scale interval (d). N is a whole number.
- (b) Carry out at least three test runs for each length, varying position and orientation across the receptor. Each measurement shall be within the maximum permissible error.
- (c) Check that instruments are marked in accordance with clause **1.8 Descriptive Markings**.

FIGURE 13/1/17 – 1



Atrax Model RVSS 3 Type C Dimensional Measuring Instrument

FIGURE 13/1/17 – 2



(a) RVSC Control Unit With an SIPC Touchscreen



Sealing Label

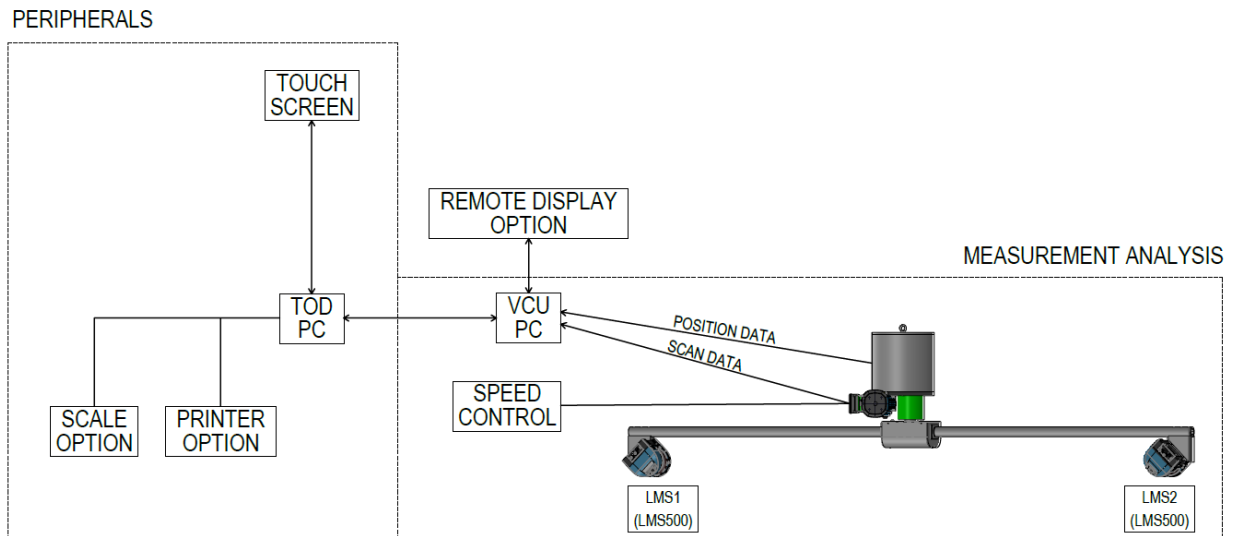
(b) ISP 422-PRO Data Evaluation Unit



(c) VSD 3 Display Unit

Atrax Model RVSS 3 Type C Dimensional Measuring Instrument

FIGURE 13/1/17 – 3



Atrax Model Scanatrx RVSS 3D (Variant 2) Dimensional Measuring Instrument

~ End of Document ~