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Manually operated draughting machines – Part 2: Characteristics, performance, inspection and marking

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Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", annually issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Ritmateriel – Manuella ritapparater – Del 2: Karakteristik, egenskaper, kontroll och märkning

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INTERNATIONAL STANDARD

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Manually operated draughting machines –

Part 2:

Characteristics, performance, inspection and
marking

Appareils à dessiner à commandes manuelles –

Partie 2: Caractéristiques, performances, contrôle et marquage



Reference number
ISO 9962-2:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9962-2 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation*, Sub-Committee SC 9, *Media and equipment for drawing and related documentation*.

ISO 9962 consists of the following parts, under the general title *Manually operated draughting machines*:

- Part 1: *Definitions, classification and designation*
- Part 2: *Characteristics, performance, inspection and marking*
- Part 3: *Dimensions of scale rule chuck plates*

Annex A forms an integral part of this part of ISO 9962.

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Manually operated draughting machines —

Part 2:

Characteristics, performance, inspection and marking

1 Scope

This part of ISO 9962 specifies the appearance and construction, performance, inspection and marking of manually operated draughting machines.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9962. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9962 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9962-1:1992, *Manually operated draughting machines — Part 1. Definitions, classification and designation.*

ISO 9962-3:–¹), *Manually operated draughting machines — Part 3. Dimensions of scale rule chuck plates.*

3 Definitions

For the purposes of this part of ISO 9962, the definitions given in ISO 9962-1 apply.

1) To be published.

4 Requirements

4.1 Appearance and construction

The appearance and construction of manually operated draughting machines shall comply with the characteristics given in 4.1.1 to 4.1.15.

4.1.1 All parts shall be made of sufficiently strong and rigid materials and shall be manufactured and assembled with care.

4.1.2 Coating or surface treatment of the various parts shall be carried out with care in order to prevent changes in colour, peeling or rusting.

4.1.3 Graduation lines on the protractor and vernier shall be clear and of even width and shall be free of curves, defacing, inking errors, etc.

4.1.4 Numbers and other indications on the protractor and the vernier shall be clear and free of omissions, errors, defacing, inking errors, etc.

4.1.5 The fixing bracket shall allow the manually operated draughting machine to be attached firmly.

4.1.6 The contact adjusting screw, if provided, shall operate smoothly and with ease.

4.1.7 The dimensions of the grooves on the scale rule mounting plate shall allow assembly with scale rule chuck plates in accordance with ISO 9962-3.

4.1.8 It shall be possible to attach scale rules to the scale rule mounting plate and to fix them securely with ease.

4.1.9 The scale rule mounting plate shall rotate smoothly.

4.1.10 The reference line lever shall operate smoothly and locking shall be secure.

4.1.11 The indexing lever shall operate smoothly and the positioning by means of the indexing plate shall be secure.

4.1.12 The angle lever shall operate smoothly and locking shall be secure.

4.1.3 The mechanism shall operate smoothly, and without play and abnormal noise.

4.1.14 In vertical plane use, the head shall remain stationary at any position on the drawing board.

4.1.15 Horizontal and vertical brakes shall operate smoothly and locking shall be secure.

4.2 Performance

The performance of manually operated draughting machines shall satisfy the requirements given in table 1.

Table 1 — Performance requirements

No.	Performance	Items to be measured	Measuring method	Measuring instruments	Permissible value or deviation
4.2.1	Accuracy of protractor and vernier graduations	Coincidence of protractor and vernier graduations	<p>Make the zero point of the vernier coincide with an arbitrary graduation on the protractor, and measure the difference between the maximum graduation on the vernier (excluding any auxiliary graduation) and the maximum graduation on the protractor.</p> <p>Carry out this measurement within $\pm 90^\circ$ of the normal horizontal position, and take the maximum value among the measurements as the measured value.</p> <p>Where the reference line is adjustable and is equipped with a vernier, the same measurements shall be carried out.</p>	Magnifier with magnification of not less than $\times 5$	Minimum reading of the vernier: 10' or 5'