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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

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## **Woodworking machines — Single blade circular sawing machines with travelling table — Nomenclature and acceptance conditions**

*Machines à bois — Machines à scier circulaires, monolame, à table mobile pour coupe au  
format — Nomenclature et conditions de réception*

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Reference number  
ISO 7983 : 1988 (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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7983 was prepared by Technical Committee ISO/TC 39, *Machine tools*.

Annex A of this International Standard is for information only.

# Woodworking machines — Single blade circular sawing machines with travelling table — Nomenclature and acceptance conditions

## 1 Scope

This International Standard specifies the nomenclature appropriate to each part of the machine and, with reference to ISO 230-1, the geometrical tests for single blade circular sawing machines with travelling table, and gives the corresponding permissible deviations which apply to machines of general purpose use and normal accuracy.

NOTE — In addition to terms used in the three official ISO languages (English, French and Russian), this International Standard gives the equivalent terms in the German, Italian and Swedish languages; these are published under the responsibility of the member bodies for Germany, F.R. (DIN), Italy (UNI) and Sweden (SIS). However, only the terms given in the official languages can be considered as ISO terms.

This International Standard deals only with the verification of the accuracy of the machine. It does not apply to the testing of the running of the machine (vibrations, abnormal noises, stick-slip motion of the components, etc.), nor to its characteristics (speeds, feeds, etc.) which should generally be checked before the accuracy is tested.

This International Standard applies to those machines designated by the number 12.131.372 in ISO 7984<sup>1)</sup>.

This International Standard does not impose any practical test. For single blade circular sawing machines with travelling table, practical tests should be exceptions and shall be stated in a previous agreement between the producer and the user.

## 2 Normative reference

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

ISO 230-1 : 1986, *Acceptance code for machine tools — Part 1: Geometric accuracy of machines operating under no-load or finishing conditions.*

## 3 Preliminary remarks

**3.1** In this International Standard all dimensions and permissible deviations are expressed in millimetres.

**3.2** To apply this International Standard, reference should be made to ISO 230-1, especially for installation of the machine before testing, the warming up of the main spindle and other moving parts, and the description of the measuring methods. The measuring instruments shall not permit measurement errors over 1/3 of the checked tolerances.

**3.3** The sequence in which the geometrical tests are given is related to the sub-assemblies of the machine, and this in no way defines the practical order of testing. In order to make mounting of instruments and gauging easier, tests may be applied in any order.

**3.4** When inspecting a machine, it is not always possible or necessary to carry out all the tests given in this International Standard.

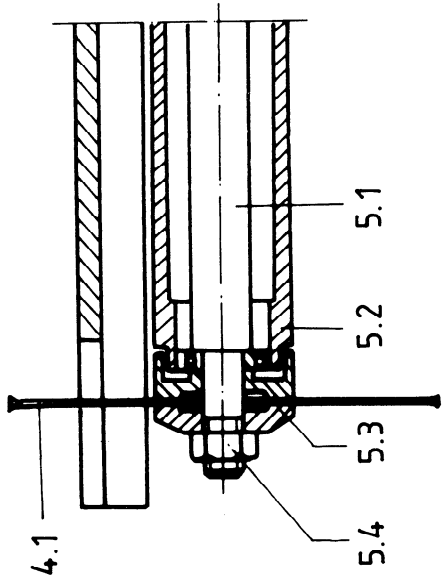
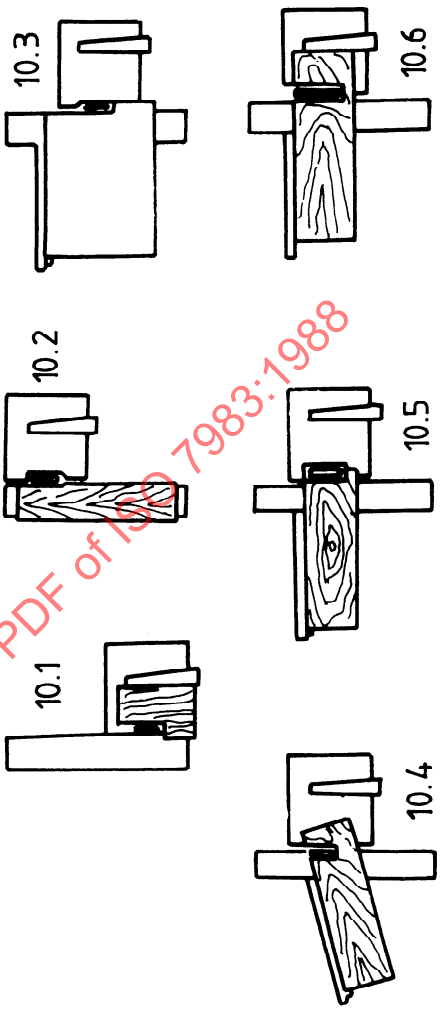
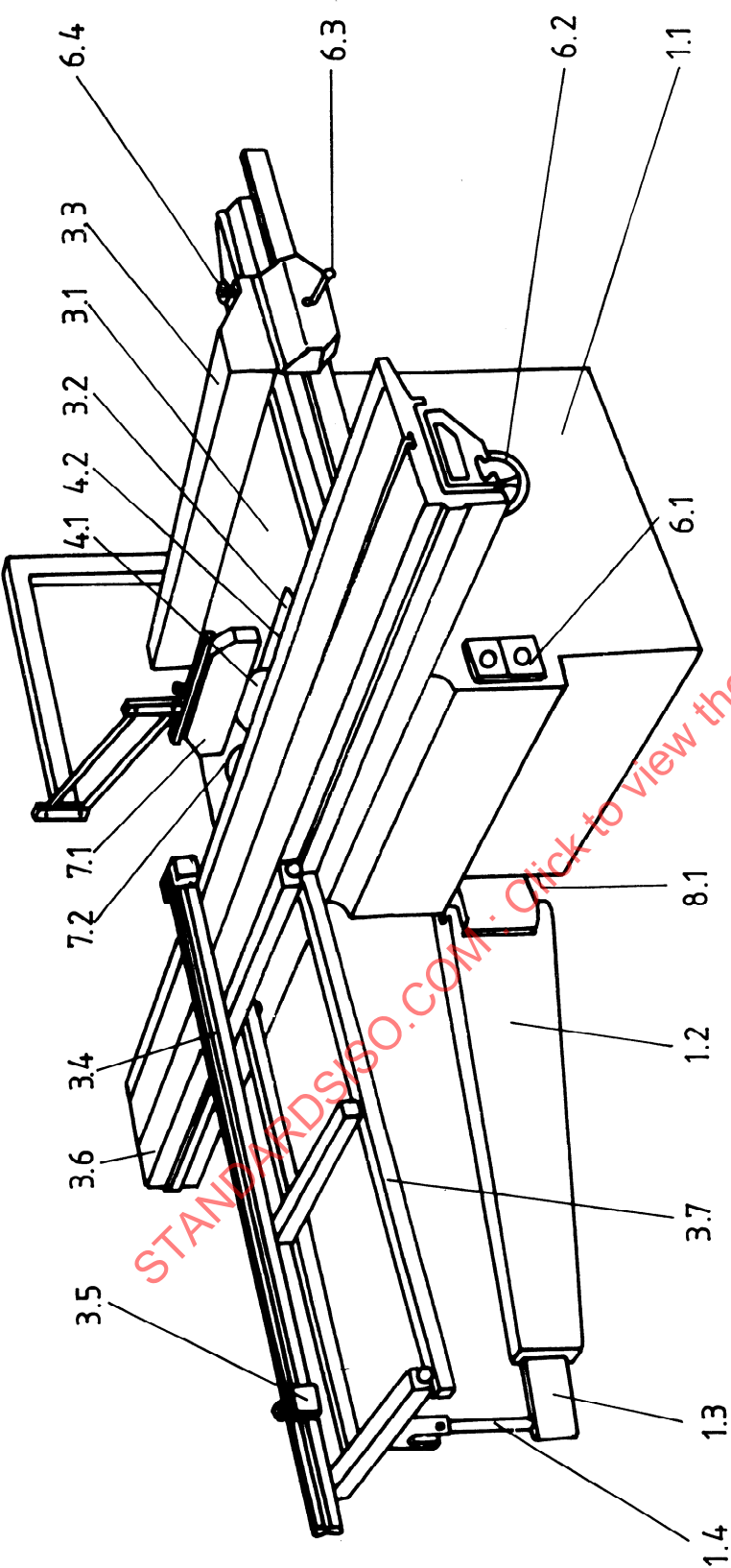
**3.5** It is up to the user to choose, in agreement with the manufacturer, those tests relating to the properties which are of interest to him, but these tests shall be clearly stated when ordering a machine.

**3.6** A movement is longitudinal when it takes place in the working direction of the piece.

**3.7** When establishing the tolerance for a measuring range different from that given in this International Standard (see subclause 2.311 in ISO 230-1), it should be taken into consideration that the minimum value of the tolerance is 0,01 mm.

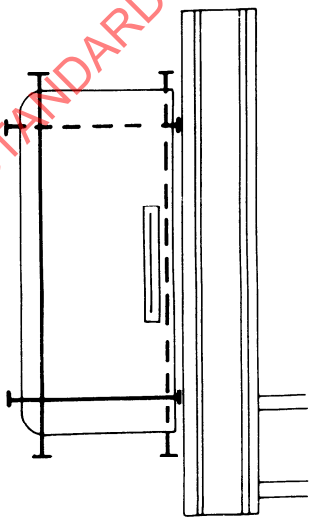
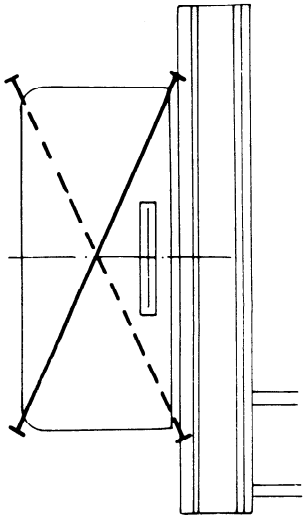
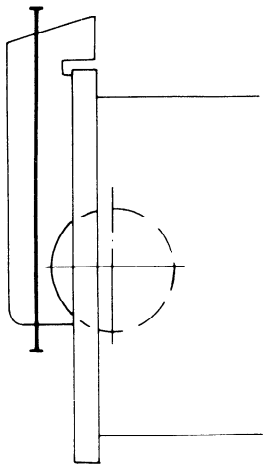
1) ISO 7984 : 1988, *Woodworking machines — Technical classification of woodworking machines and auxiliary machines for woodworking.*

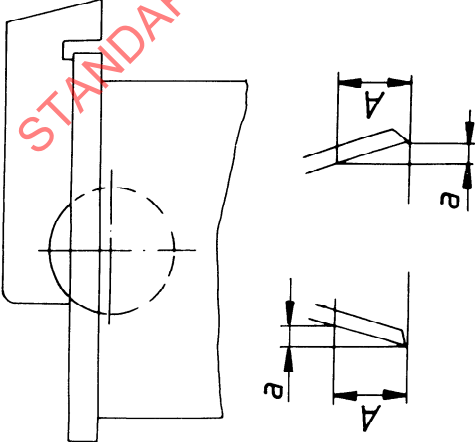
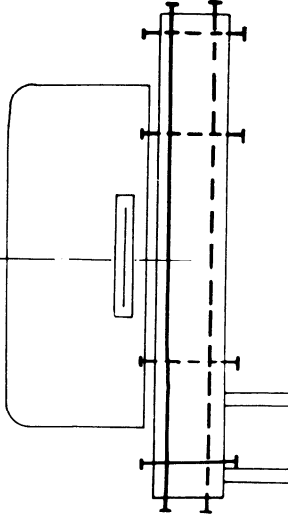
4 Nomenclature

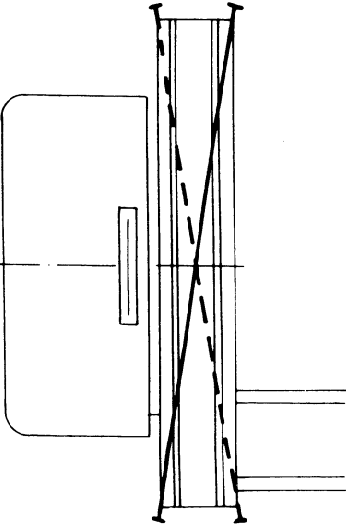
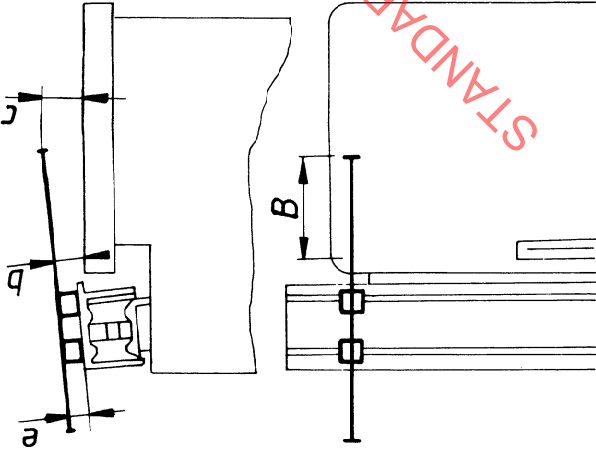


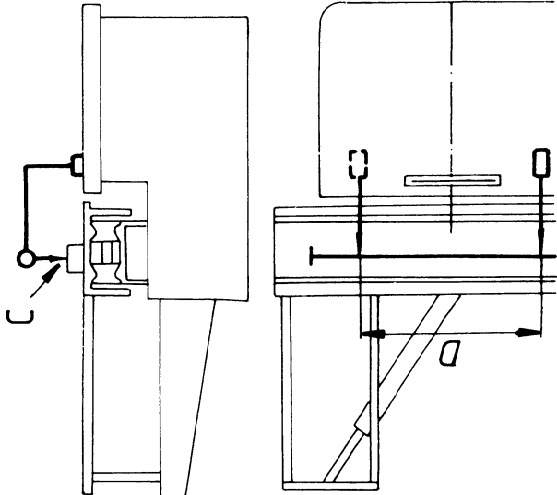
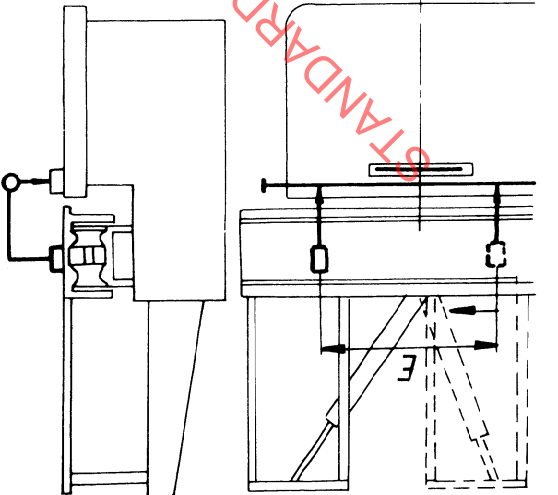
| Reference | English                                                    | French                                                                    | Russian                                        |
|-----------|------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------|
|           | Single blade circular sawing machine with travelling table | Machine à scier circulaire, monolame, à table mobile pour coupe au format | Станок круглопильный с подвижным столом        |
| 1         | <b>Framework</b>                                           | <b>Ossature</b>                                                           | <b>Каркас</b>                                  |
| 1.1       | Main frame                                                 | Bâti                                                                      | Станина                                        |
| 1.2       | Swinging arm                                               | Bras télescopique                                                         | Телескопическая стрела                         |
| 1.3       | Extension to swinging arm                                  | Allonge du bras télescopique                                              | Удлинение к телескопической стреле             |
| 1.4       | Support                                                    | Porte-bras                                                                | Опора                                          |
| 2         | <b>Feed of workpiece and/or tools</b>                      | <b>Déplacement des pièces et/ou outils</b>                                | <b>Подача деталей и/или инструмента</b>        |
| 3         | <b>Workpiece support, clamp and guide</b>                  | <b>Support, maintien et guidage des pièces</b>                            | <b>Опора, крепление и направление деталей</b>  |
| 3.1       | Table                                                      | Table                                                                     | Стол                                           |
| 3.2       | Table insert                                               | Plaque amovible                                                           | Съемная пластина                               |
| 3.3       | Parallel fence                                             | Guide longitudinal                                                        | Продольная направляющая                        |
| 3.4       | Travelling table fence                                     | Guide de table mobile                                                     | Направляющая подвижного стола                  |
| 3.5       | Adjustable fence                                           | Butée réglable                                                            | Регулируемый упор                              |
| 3.6       | Travelling table                                           | Table mobile                                                              | Подвижный стол                                 |
| 3.7       | Transverse table                                           | Chariot transversal                                                       | Поперечный стол                                |
| 4         | <b>Tool-holders and tools</b>                              | <b>Porte-outils et outils</b>                                             | <b>Державки инструмента и инструмент</b>       |
| 4.1       | Sawblade                                                   | Lame                                                                      | Пила                                           |
| 4.2       | Scoring sawblade (optional)                                | Inciseur (option)                                                         | Зачиститель (не обязательно)                   |
| 5         | <b>Workhead and tool drives</b>                            | <b>Unité de travail et son entraînement</b>                               | <b>Рабочая головка и ее приводы</b>            |
| 5.1       | Circular saw spindle                                       | Arbre                                                                     | Шпиндель                                       |
| 5.2       | Saw spindle mounting                                       | Support de l'arbre                                                        | Оправка шпинделя                               |
| 5.3       | Flange                                                     | Flasque de blocage de la lame                                             | Опорная шайба                                  |
| 5.4       | Clamping nut                                               | Écrou                                                                     | Зажимная гайка                                 |
| 6         | <b>Controls</b>                                            | <b>Commandes</b>                                                          | <b>Управление</b>                              |
| 6.1       | Switch                                                     | Commutateur                                                               | Переключатель                                  |
| 6.2       | Adjustment for cutting height                              | Commande de réglage de la lame en hauteur                                 | Регулировка пилы по вертикали                  |
| 6.3       | Clamping lock for parallel fence                           | Blocage du guide longitudinal                                             | Блокировка горизонтальной направляющей         |
| 6.4       | Fine adjustment for parallel fence                         | Commande de réglage fin du guide longitudinal                             | Тонкая регулировка горизонтальной направляющей |
| 7         | <b>Safety devices (examples)</b>                           | <b>Dispositifs de sécurité (exemples)</b>                                 | <b>Предохранительные устройства (примеры)</b>  |
| 7.1       | Top guard                                                  | Protecteur de la lame                                                     | Защитный кожух пилы                            |
| 7.2       | Riving knife                                               | Couteau diviseur                                                          | Делительный нож                                |
| 8         | <b>Miscellaneous</b>                                       | <b>Divers</b>                                                             | <b>Прочее</b>                                  |
| 8.1       | Extraction connections                                     | Buse d'aspiration                                                         | Отсасывающий патрубок                          |
| 9         | (clause free)                                              | (chapitre libre)                                                          | (свободно)                                     |
| 10        | <b>Examples of work</b>                                    | <b>Exemples de travail</b>                                                | <b>Примеры работ</b>                           |
| 10.1      | Cutting to width                                           | Coupe en largeur                                                          | Поперечная распиловка                          |
| 10.2      | Square edging                                              | Déclignage                                                                | Обрезка кромок                                 |
| 10.3      | Panel sizing                                               | Coupe au format                                                           | Раскрой плит                                   |
| 10.4      | Mitre-cutting                                              | Coupe d'onglet                                                            | Распиловка под углом                           |
| 10.5      | Angle cutting and cross-cutting                            | Coupe d'équerre et en travers                                             | Распиловка уголко и наискось                   |
| 10.6      | Panel dividing using the parallel fence                    | Coupe au guide longitudinal                                               | Распиловка по продольной направляющей          |

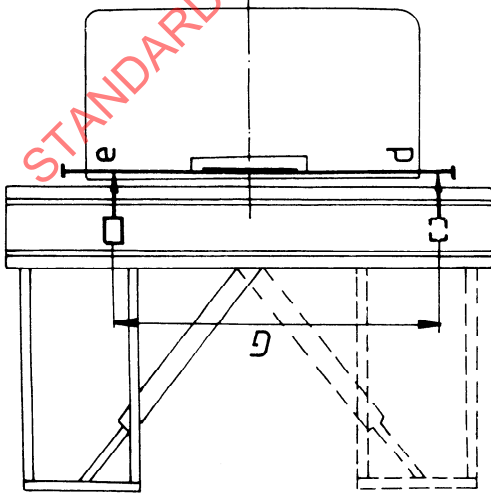
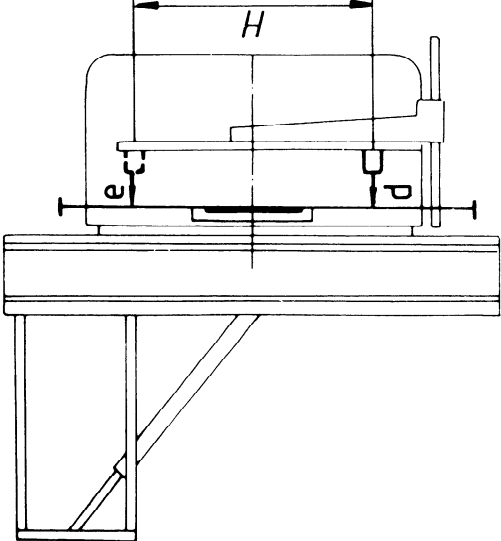
## 5 Acceptance conditions and permissible deviations — Geometrical tests

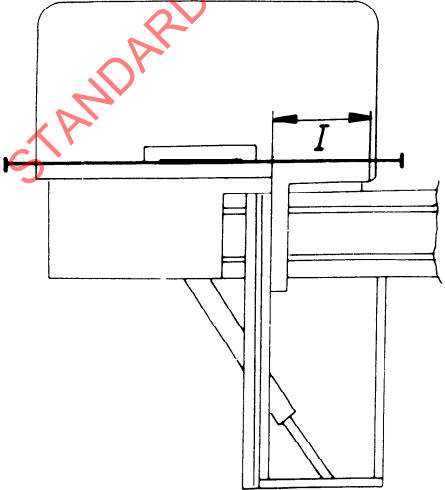
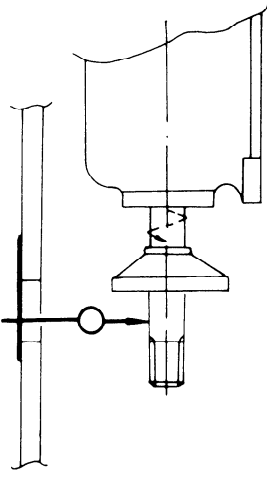
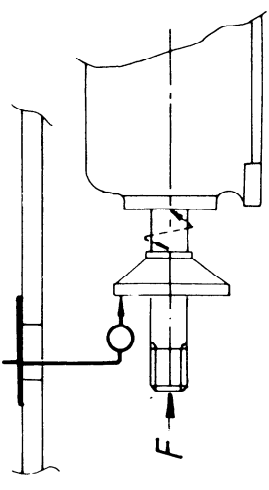
| No. | Diagram                                                                               | Object                                                                                                 | Permissible deviation                                                                                   | Measuring instruments          | Observations and references to the ISO 230-1 acceptance code    |
|-----|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------|
| G1  |    | Checking of flatness of the fixed table:<br>a) longitudinal straightness<br>b) transverse straightness | a) and b)<br>0,2<br>for $L^*) \leq 630$<br>0,25<br>for $630 < L \leq 1\,250$<br>0,3<br>for $L > 1\,250$ | Straightedge and feeler gauges | Subclause 5.212<br><br>*) $L$ is the length of the fixed table. |
| G2  |   | Checking of flatness of the fixed table:<br>c) diagonal straightness                                   | c)<br>0,3<br>for $L^*) \leq 630$<br>0,4<br>for $630 < L \leq 1\,250$<br>0,5<br>for $L > 1\,250$         | Straightedge and feeler gauges | Subclause 5.212<br><br>*) $L$ is the length of the fixed table. |
| G3  |  | Checking of straightness of the fixed table fence                                                      | 0,1<br>for $L^*) \leq 630$<br>0,2<br>for $L > 630$                                                      | Straightedge and feeler gauges | Subclause 5.212<br><br>*) $L$ is the length of the fence.       |

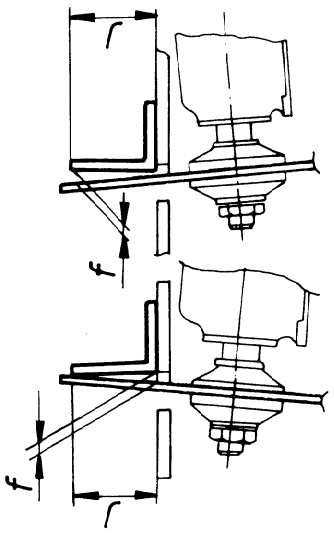
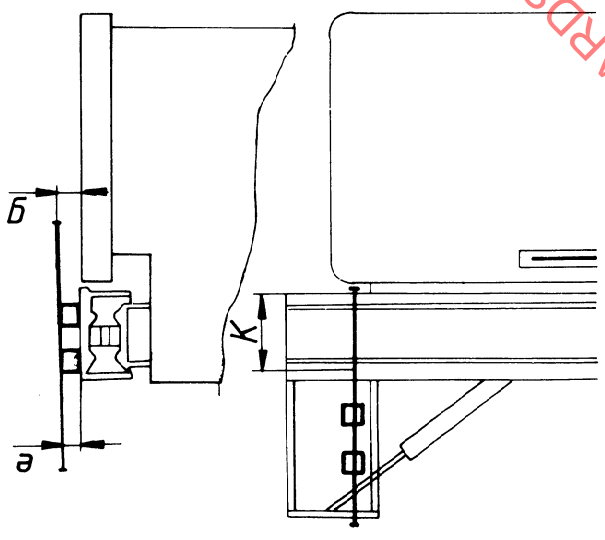
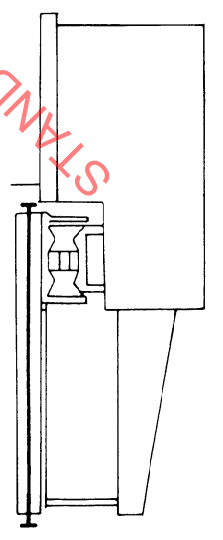
| No. | Diagram                                                                              | Object                                                                                                       | Permissible deviation                                                                                                                                 | Measuring instruments          | Observations and references to the ISO 230-1 acceptance code                          |
|-----|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------|
| G4  |   | Checking of squareness of the fence to the fixed table                                                       | 0,2/100 <sup>*)</sup>                                                                                                                                 | Square and feeler gauges       | Subclause 5.512.2<br><br>*) Distance $A$                                              |
| G5  |  | Checking of flatness of the travelling table :<br>a) transverse straightness<br>b) longitudinal straightness | a) 0,2<br>b) 0,3<br>for $L^{*)} \leq 2\,000$<br>0,4<br>for $2\,000 < L \leq 2\,650$<br>0,5<br>for $2\,650 < L \leq 3\,500$<br>0,6<br>for $L > 3\,500$ | Straightedge and feeler gauges | Subclause 5.212<br>No convexity.<br><br>*) $L$ is the length of the travelling table. |

| No. | Diagram                                                                              | Object                                                                                          | Permissible deviation                                                                                                                                                                                                        | Measuring instruments                 | Observations and references to the ISO 230-1 acceptance code                                                                                                                                                                                                                             |
|-----|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G6  |   | <p>Checking of flatness of the travelling table:</p> <p>c) diagonal straightness</p>            | <p>c)</p> <p>0,3<br/>for <math>L^*) \leq 2\,000</math></p> <p>0,4<br/>for <math>2\,000 &lt; L \leq 2\,650</math></p> <p>0,5<br/>for <math>2\,650 &lt; L \leq 3\,500</math></p> <p>0,6<br/>for <math>L &gt; 3\,500</math></p> | <p>Straightedge and feeler gauges</p> | <p>Subclause 5.212</p> <p>No convexity.</p> <p>*) <math>L</math> is the length of the travelling table.</p>                                                                                                                                                                              |
| G7  |  | <p>Checking of parallelism of the fixed and travelling table surfaces in a horizontal plane</p> | <p><math>B = 450</math></p> <p><math>b - e = 0,2</math></p> <p><math>b \leq c</math></p> <p><math>c - e = 0,2</math></p>                                                                                                     | <p>Straightedge and feeler gauges</p> | <p>Subclause 5.322</p> <p>Where the travelling table is supported by an edge arm, the tolerance is doubled at each end of the movement.</p> <p>Travelling table always higher than the fixed table.</p> <p>Measurements to be taken at several positions along the travelling table.</p> |

| No. | Diagram                                                                              | Object                                                                                                              | Permissible deviation                       | Measuring instruments              | Observations and references to the ISO 230-1 acceptance code                                                                     |
|-----|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| G8  |   | <p>Checking of parallelism of the travelling table surface to the fixed table surface (in the sawing direction)</p> | <p>0,25<br/>for <math>D = 1\ 000</math></p> | <p>Straightedge and dial gauge</p> | <p>Subclause 5.412.2</p> <p>At C this deviation can be doubled at each end for a travelling table stroke greater than 2 650.</p> |
| G9  |  | <p>Checking of parallelism of the travelling table motion to the fixed table in a vertical plane</p>                | <p>0,4<br/>for <math>E = 1\ 000</math></p>  | <p>Straightedge and dial gauge</p> | <p>Subclause 5.422.22</p>                                                                                                        |

| No. | Diagram                                                                              | Object                                                                                                                          | Permissible deviation                                                                                                                         | Measuring instruments                            | Observations and references to the ISO 230-1 acceptance code                                                                                                                                                                                                               |
|-----|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G10 |   | <p>Checking of parallelism of the travelling table motion to the sawblade plane (control disc mounted in place of sawblade)</p> | <p>0,25<br/>for <math>G = 1\ 000</math></p>                                                                                                   | <p>Straightedge, dial gauge and control disc</p> | <p>Subclause 5.422.22</p> <p>Deviation at <math>e &gt;</math> deviation at <math>d</math> to ensure lead-off.</p> <p>Rotate the control disc by <math>180^\circ</math> and repeat the measurement. At each point, evaluate the arithmetic mean of the values obtained.</p> |
| G11 |  | <p>Checking of parallelism of the slide fence motion to the sawblade plane (control disc mounted in place of sawblade)</p>      | <p>0,2<br/>for <math>H = 800</math></p> <p>0,25<br/>for <math>800 &lt; H \leq 1\ 200</math></p> <p>0,3<br/>for <math>H &gt; 1\ 200</math></p> | <p>Straightedge, dial gauge and control disc</p> | <p>Clause 5.412.2</p> <p>Deviation at <math>e &gt;</math> deviation at <math>d</math> to ensure lead-off.</p> <p>Rotate the control disc by <math>180^\circ</math> and repeat the measurement. At each point, evaluate the arithmetic mean of the values obtained.</p>     |

| No. | Diagram                                                                               | Object                                                                                                                 | Permissible deviation                                                                              | Measuring instruments                                | Observations and references to the ISO 230-1 acceptance code                                                                                                                                  |
|-----|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G12 |    | Checking of squareness of the travelling table fence to the sawblade plane (control disc mounted in place of sawblade) | 0,15/500 <sup>*)</sup>                                                                             | Straightedge, square, feeler gauges and control disc | <p>Subclause 5.512.2</p> <p>Rotate the control disc by 180° and repeat the measurement. Evaluate the arithmetic mean of the values obtained.</p> <p><sup>*)</sup> Distance <math>I</math></p> |
| G13 |   | Measurement of run-out of the spindle                                                                                  | 0,03                                                                                               | Dial gauge                                           | Subclause 5.612.2                                                                                                                                                                             |
| G14 |  | Measurement of camming of the saw flange                                                                               | <p>0,03</p> <p>for <math>d^{*)} \leq 100</math></p> <p>0,04</p> <p>for <math>d &gt; 100</math></p> | Dial gauge                                           | <p>Subclause 5.632.2</p> <p>Apply an axial pressure <math>F</math> as recommended by the manufacturer.</p> <p><sup>*)</sup> <math>d</math> is the diameter of the saw flange.</p>             |

| No. | Diagram                                                                               | Object                                                                                                                     | Permissible deviation                                            | Measuring instruments                  | Observations and references to the ISO 230-1 acceptance code                                                                                                                                                                                                 |
|-----|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G15 |    | Checking of squareness of the sawblade plane to the surface of the fixed table (control disc mounted in place of sawblade) | $0,1^{(*)}/100^{(**)}$                                           | Square, feeler gauges and control disc | <p>Subclause 5.512.2</p> <p>Rotate the control disc by <math>180^\circ</math> and repeat the measurement. Evaluate the arithmetic mean of the values obtained.</p> <p><sup>*)</sup> Deviation <math>f</math><br/> <sup>**) Distance <math>J</math></sup></p> |
| G16 |   | Checking of parallelism of the surface of the additional travelling support to the surface of the travelling table         | $K = 300$<br>$g - e = 0,2$                                       | Straightedge and feeler gauges         | Subclause 5.322                                                                                                                                                                                                                                              |
| G17 |  | Checking of straightness of the fence of the travelling table                                                              | $0,25$<br>for $L^{(*)} \leq 1\,250$<br>$0,3$<br>for $L > 1\,250$ | Straightedge and feeler gauges         | <p>Subclause 5.212</p> <p><sup>*)</sup> <math>L</math> is the length of the fence.</p>                                                                                                                                                                       |