
International Standard



7987

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Woodworking machines — Turning lathes — Nomenclature and acceptance conditions

Machines à bois — Tours parallèles — Nomenclature et conditions de réception

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Ref. No. ISO 7987-1985 (E)

Descriptors : machine tools, woodworking machinery, lathes, nomenclature, tests, measurement, accuracy.

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.

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 7987 was prepared by Technical Committee ISO/TC 39, *Machine tools*.

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Woodworking machines — Turning lathes — Nomenclature and acceptance conditions

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1 Scope and field of application

This International Standard specifies the nomenclature appropriate to each part of the machine and, with reference to ISO/R 230, the geometrical tests for turning lathes, and gives the corresponding permissible deviations which apply to machines for general purpose use and normal accuracy.

NOTE — In addition to terms used in two of the three official ISO languages (English and French), this International Standard gives in the annex the equivalent terms in German, Spanish, Italian and Swedish; these have been included at the request of ISO Technical Committee TC 39 and are published under the responsibility of the member bodies for Germany, F.R. (DIN), Spain (IRANOR), Italy (UNI) and Sweden (SIS). However, only the terms and definitions given in the official languages can be considered as ISO terms and definitions.

This International Standard deals only with the verification of 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 testing accuracy.

This International Standard does not impose any practical test. For turning lathe machines, practical tests should be exceptions and have to be stated in a previous agreement between the producer and the user.

2 Reference

ISO/R 230, *Test code for machine tools*.

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/R 230, especially for installation of the machine before testing, the warming up of the main spindle and other moving parts, and description of measuring methods. The measuring instruments shall not permit 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 or gauging easier, tests may be applied in any order.

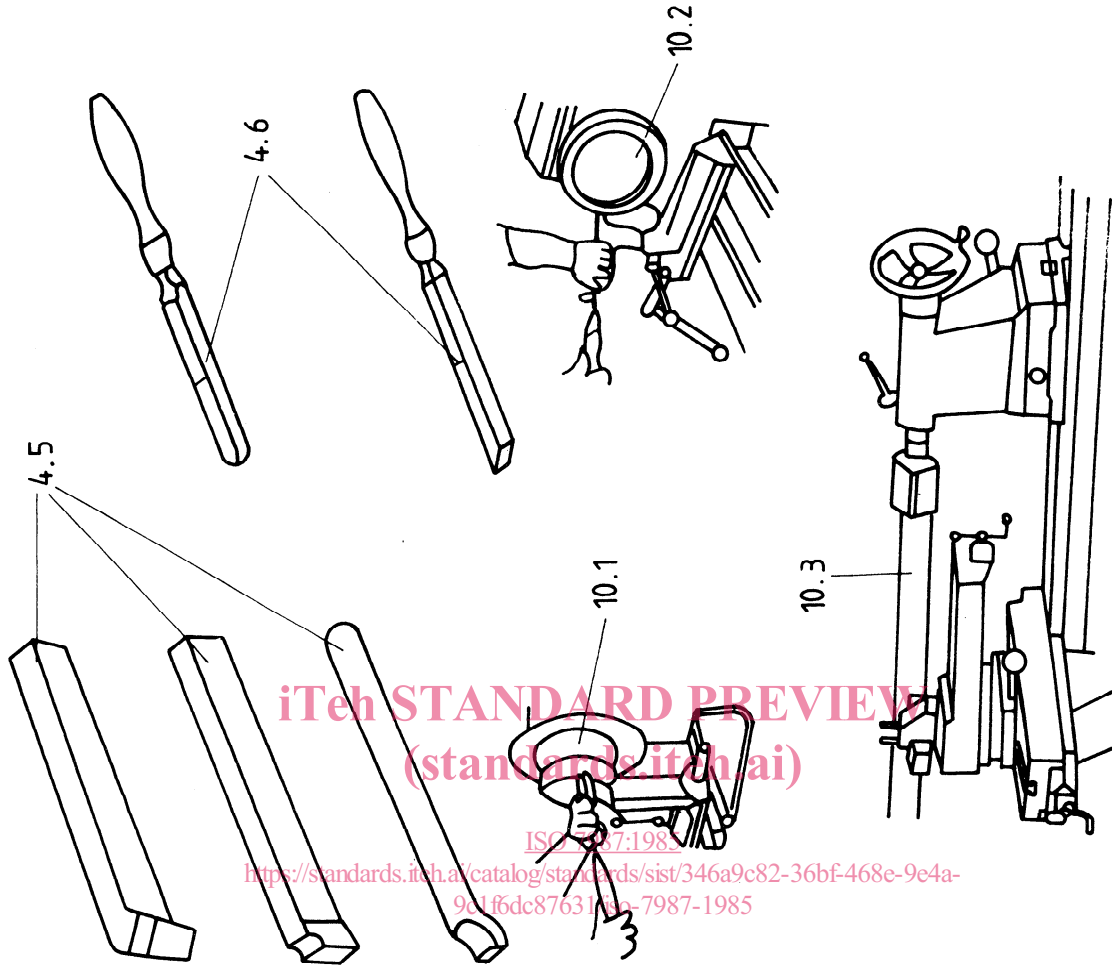
3.4 When inspecting a machine, it is not always possible or necessary to carry out all the tests given in this International Standard.

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 are to 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 2.311 in ISO/R 230), it should be taken into consideration that the minimum value of the tolerance is 0,01 mm.

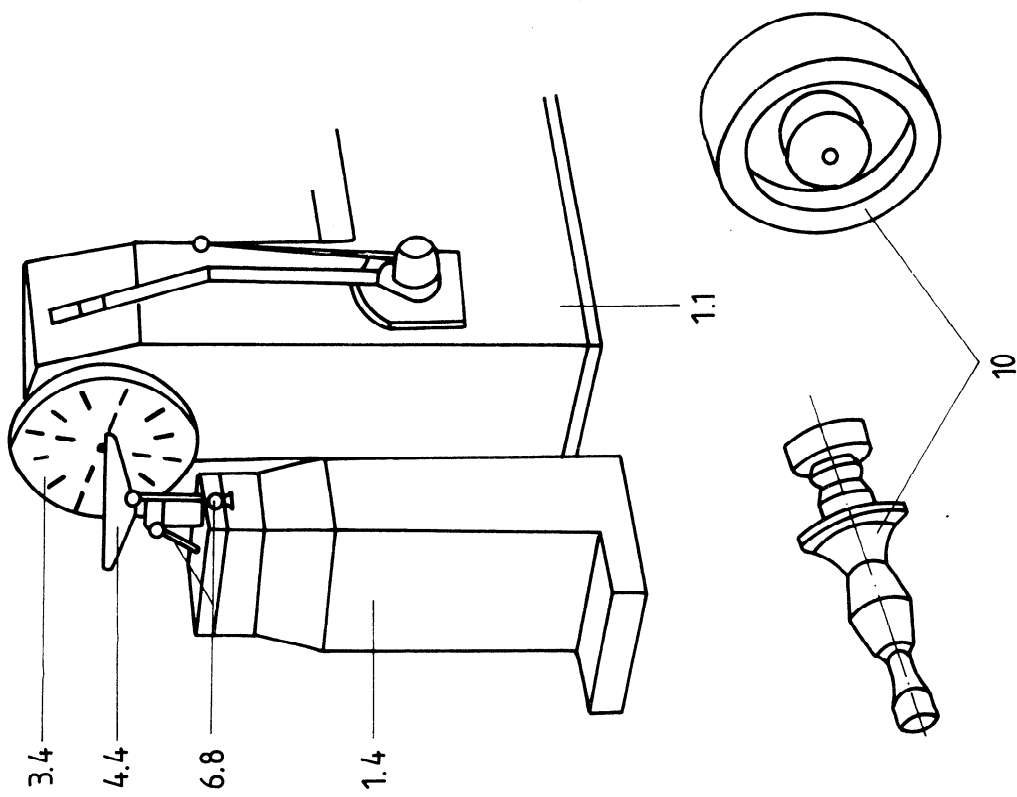
4 Nomenclature

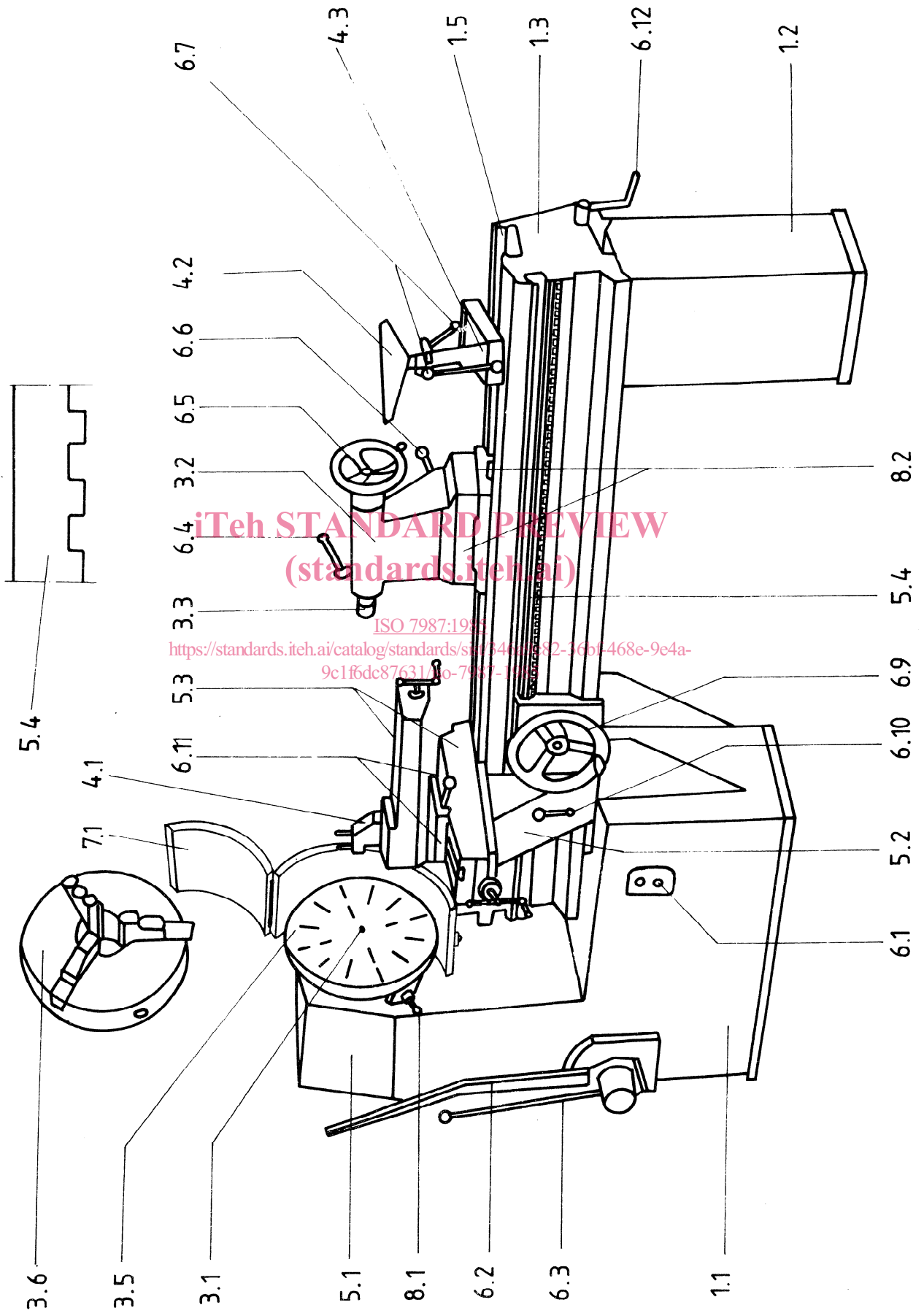


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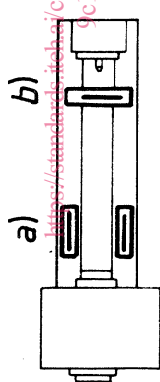
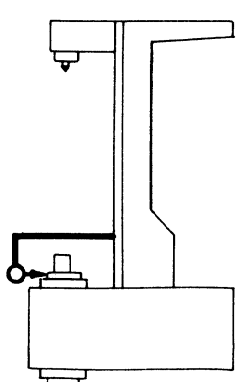
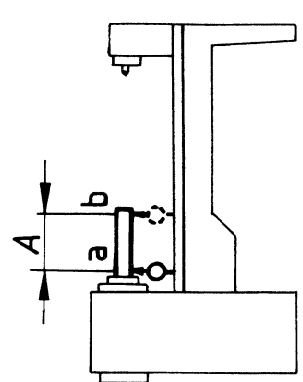
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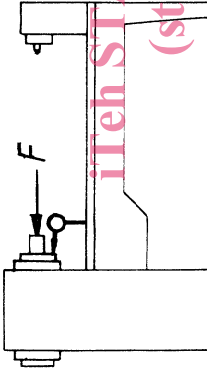
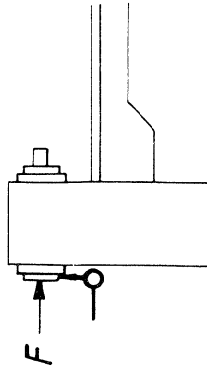
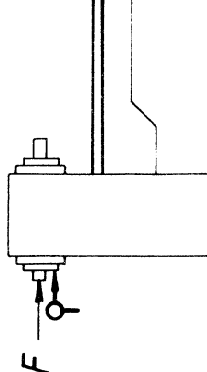


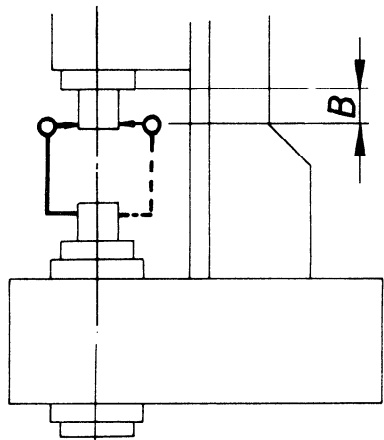
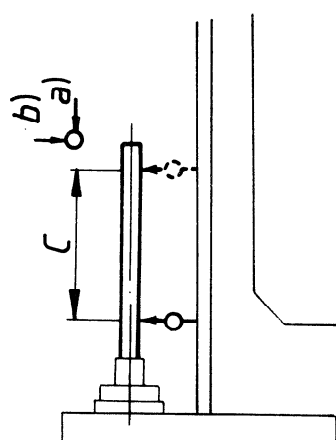
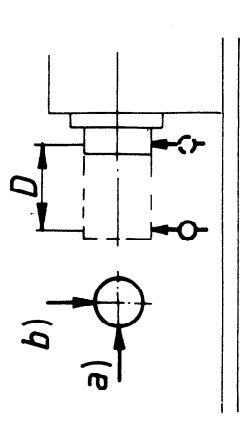


Reference	English	French
	Turning lathe	Tour parallèle
1	Framework	Ossature
1.1	Base (headstock end)	Socle bâti
1.2	Base (tailstock end)	Socle support
1.3	Bed	Banc
1.4	Outside toolrest support	Bâti du support extérieur d'outils
1.5	Slideways	Glissière
2	Feed of workpiece and/or tools	Déplacement des pièces et/ou outils
3	Workpiece support, clamp and guide	Support, maintien et guidage des pièces
3.1	Headstock spindle	Broche
3.2	Tailstock	Contre-poupée
3.3	Tailstock quill/centre/drill chuck	Contre-pointe
3.4	Outside faceplate	Plateau extérieur
3.5	Inside faceplate	Plateau intérieur
3.6	Chuck	Mandrin trois mors
4	Toolholder and tools	Porte-outils et outils
4.1	Toolholder	Porte-outils
4.2	Inside toolrest (hand turning)	Support à main d'outils
4.3	Inside toolrest support	Pied du support à main d'outils
4.4	Outside toolrest	Support extérieur d'outils
4.5	Turning tools	Outils de tournage
4.6	Hand turning tools	Gouges de tournage
5	Workheads and tool drives	Unité de travail et son entraînement
5.1	Headstock	Poupée
5.2	Carriage	Tablier du chariot
5.3	Compound cross slide	Tourelle porte-outils
5.4	Traversing rack	Crémaillère
6	Controls	Commandes
6.1	Stop/start switch	Commutateur
6.2	Spindle speed control	Levier de vitesse
6.3	Coupling lever	Levier d'embrayage
6.4	Tailstock quill clamp	Blocage de la contre-pointe
6.5	Tailstock quill handwheel	Volant de réglage de la contre-pointe
6.6	Tailstock clamp	Blocage de la contre-poupée
6.7	Inside toolrest support clamp	Levier de blocage du support à main d'outils
6.8	Outside toolrest support clamp	Levier de blocage du support extérieur d'outils
6.9	Carriage traversing handwheel	Volant de commande du chariot
6.10	Carriage traversing clamp	Levier de blocage du chariot
6.11	Compound cross slide index and clamp	Réglage de la tourelle porte-outils
6.12	Lathe bed displacement (longitudinal)	Levier de coulissement longitudinal du banc
7	Safety devices (examples)	Dispositifs de sécurité (exemples)
7.1	Chuck guard	Capot de protection
8	Miscellaneous	Divers
8.1	Indexing device for grooving	Diviseur
8.2	Tailstock cross travel screw with index device for tapering work	Dispositif d'orientation de la contre-poupée pour travaux coniques
9	Free	Libre
10	Examples of work	Exemples de travail
10.1	Turning on the outside faceplate, using hand turning tool	Tournage sur plateau extérieur, avec gouge
10.2	Turning on the inside faceplate, using hand turning tool	Tournage sur plateau intérieur, avec gouge
10.3	Turning between centres with tool	Tournage entre pointes, outil sur tourelle

5 Acceptance conditions and permissible deviations — Geometrical tests

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G1	 <p>Checking of straightness of the slideways: <i>a</i>) longitudinally <i>b</i>) transversely</p>	<p>Length of slideways L</p> <p><i>a</i>) 0,20 for $L \leq 1250$</p> <p>0,40 for $1250 < L \leq 2500$</p> <p>0,50 for $L > 2500$</p> <p><i>b</i>) 0,20 for a measured length of 1000</p>	<p>Precision levels, straightedge and feeler gauge</p>	<p>Clause 5.212 and 5.222</p>	
G2		<p>Measuring of run-out of spindle nose</p>	<p>0,03</p>	<p>Dial gauge</p>	<p>Clause 5.612.2</p>
G3		<p>Measuring of run-out of spindle internal taper</p>	<p>0,05 for $A = 200$ Measured at a and b</p>	<p>Dial gauge and test mandrel</p>	<p>Clause 5.612.3</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G4	 <p>Measuring of camming of the spindle shoulder https://standards.iteh.ai/catalog/standards/sist/346a9c82-36bf-468e-9e4a-9c1f6dc87631/iso-7987-1985 ISO 7987:1985</p>	<p>0,03</p>	<p>Dial gauge</p>	<p>Clause 5.632 Apply an axial pressure F, as recommended by the manufacturer.</p>	
G5		<p>Measuring of run-out of the outside turning spindle</p>	<p>0,03</p>	<p>Dial gauge</p>	<p>Clause 5.612.2</p>
G6		<p>Measuring of camming of the outside turning spindle shoulder</p>	<p>0,03</p>	<p>Dial gauge</p>	<p>Clause 5.632 Apply an axial pressure F, as recommended by the manufacturer.</p>

No.	Diagram	Object	Permissible deviation	Measuring instruments	Observations and references in test code ISO/R 230
G7		<p>Checking of alignment of tailstock to headstock</p>	<p>0,10 for $B = 100$</p>	<p>Dial gauge</p>	<p>Clause 5.442 Tailstock locked.</p>
G8		<p>Checking of parallelism of the headstock axis to the slideways: a) in a horizontal plane b) in a vertical plane</p>	<p>0,20 for $C = 250$</p>	<p>Dial gauge and test mandrel</p>	<p>Clause 5.412.4</p>
G9		<p>Checking of parallelism of the tailstock axis to the slideways: a) in a horizontal plane b) in a vertical plane</p>	<p>a) and b) 0,10 for $D = 100$</p>	<p>Dial gauge</p>	<p>Clause 5.412.4</p>

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