

ISO 13041-3:2009-03 (E)

Test conditions for numerically controlled turning machines and turning centres - Part 3: Geometric tests for machines with inverted vertical workholding spindles

Contents		Page
Foreword		iv
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Preliminary remarks	2
4.1	Measuring units	2
4.2	Reference to ISO 230-1 and ISO 230-7	3
4.3	Machine levelling	3
4.4	Testing sequence	3
4.5	Tests to be performed	3
4.6	Measuring instruments	3
4.7	Diagrams	3
4.8	Software compensation	3
4.9	Minimum tolerance	3
4.10	Machine classifications, descriptions, terminology and designation of axes	3
4.11	Turrets	8
4.12	Machine size categories	8
5	Geometric tests	9
5.1	Workholding spindle(s)	9
5.2	Relation between workholding spindle(s) and linear axes of motion	11
5.3	Angular deviations of linear axis motion	14
5.4	Turret and power-driven tools	20
5.5	Swivelling workholding spindle head	28
6	Tests for checking accuracy of axes of rotation	29
6.1	Rotational accuracy of workholding spindle	29
6.2	Rotational accuracy of tool spindle	31
Annex A (informative) Three-point measuring method		33
Bibliography		35