

DIN EN 848-1:2010-04 (E)

Safety of woodworking machines - One side moulding machines with rotating tool - Part 1: Single spindle vertical moulding machines (includes Amendment A1:2009)

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	9
3.1	General	9
3.2	Definitions	9
3.3	Terminology	14
4	List of significant hazards	18
5	Safety requirements and/or measures	21
5.1	General	21
5.2	Controls	21
5.2.1	Safety and reliability of control systems	21
5.2.2	Position of controls	22
5.2.3	Starting	23
5.2.4	Normal stopping	24
5.2.5	Emergency stop	25
5.2.6	Mode selection	25
5.2.7	Speed changing	26
5.2.8	Adjustments control	27
5.2.9	Failure of the power supply	28
5.2.10	Failure of the control circuits	28
5.3	Protection against mechanical hazards	29
5.3.1	Stability	29
5.3.2	Hazard of break-up during operation	29
5.3.3	Tool holder and tool design	29
5.3.4	Braking	36
5.3.5	Devices to minimise the possibility or the effect of kickback	37
5.3.6	Work-piece supports and guides	40
5.3.7	Prevention of access to moving parts	46
5.3.8	Workpiece clamping device	51
5.3.9	Safety appliances	51
5.4	Protection against non-mechanical hazards	52
5.4.1	Fire	52
5.4.2	Noise	52
5.4.3	Emission of chips and dust	53
5.4.4	Electricity	54
5.4.5	Ergonomics and handling	55
5.4.6	Pneumatics	55
5.4.7	Hydraulics	55
5.4.8	Electromagnetic compatibility	55
5.4.9	Errors of fitting	56
5.4.10	Supply disconnecting devices	56
5.4.11	Maintenance	56

6	Information for use	57
6.1	Warning devices	57
6.2	Marking	57
6.3	Instruction handbook	59
Annex A (normative) Determination of maximum tool spindle speeds		63
Annex B (normative) Rigidity test for pressure pads, hand protectors and guiding steadies		68
B.1	Pressure pads	68
B.1.1	Fence pressure pads	68
B.1.2	Table pressure pads	69
B.1.3	Measuring equipment	71
B.1.4	Test and test requirements	71
B.1.5	Measuring conditions	71
B.2	Adjustable guard (Hand protector) and guiding steady	71
B.2.1	Adjustable guard	71
B.2.2	Guiding steady	72
B.2.3	Measuring equipment	73
B.2.4	Test	73
B.2.5	Measuring conditions	74
Annex C (normative) Stability test for displaceable machines		75
Annex D (informative) Use of well tried components		76
Annex E (normative) Brake tests		77
E.1	Conditions for all tests	77
E.2	Tests	77
E.2.1	Un-braked run-down time	77
E.2.2	Run-up time	77
E.2.3	Braked run-down time	77
Annex F (normative) Use of electronic components		79
F.1	General	79
F.2	SRECS	79
F.2.1	Components, hardware	79
F.2.2	Safety related software	80
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of UE Directive 98/37/EC		82
Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC		85
Bibliography		89