

ISO 19085-4:2018-02 (E)

Woodworking machines - Safety - Part 4: Vertical panel circular sawing machines

Contents	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 List of significant hazards	5
5 Safety requirements and measures for controls	7
5.1 Safety and reliability of control systems	7
5.2 Control devices	7
5.3 Start	7
5.4 Safe stops	8
5.4.1 General	8
5.4.2 Normal stop	8
5.4.3 Operational stop	8
5.4.4 Emergency stop	9
5.5 Braking function of tool spindles	9
5.6 Mode selection	9
5.7 Spindle speed changing	9
5.7.1 Spindle speed changing by changing belts on the pulleys	9
5.7.2 Spindle speed changing by incremental speed change motor	9
5.7.3 Infinitely variable speed by frequency inverter	9
5.8 Failure of any power supply	9
5.9 Manual reset control	9
5.10 Enabling control	9
5.11 Machine moving parts speed monitoring	9
5.12 Time delay	10
6 Safety requirements and measures for protection against mechanical hazards	10
6.1 Stability	10
6.1.1 Stationary machines	10
6.1.2 Displaceable machines	10
6.2 Risk of break-up during operation	10
6.3 Tool holder and tool design	10
6.3.1 General	10
6.3.2 Spindle locking	10
6.3.3 Circular saw blade fixing device	10
6.3.4 Flange dimension for circular saw blades	10
6.4 Braking	11
6.4.1 Braking of tool spindles	11
6.4.2 Maximum run-down time	11
6.4.3 Brake release	11
6.5 Safeguards	11
6.5.1 Fixed guards	11
6.5.2 Interlocking movable guards	11
6.5.3 Hold-to-run control	11
6.5.4 Two-hand control	11

6.5.5	Electro-sensitive protective equipment (ESPE)	11
6.5.6	Pressure-sensitive protective equipment (PSPE)	12
6.6	Prevention of access to moving parts	12
6.6.1	General	12
6.6.2	Guarding of tools	12
6.6.3	Guarding of drives	14
6.6.4	Guarding of shearing and/or crushing zones	14
6.7	Impact hazard	15
6.8	Clamping devices	15
6.9	Measures against ejection	15
6.9.1	General	15
6.9.2	Guards materials and characteristics	15
6.9.3	Anti-kickback devices	15
6.10	Work-piece supports and guides	17
6.10.1	Work-piece support	17
6.10.2	Middle support device	18
6.10.3	Angle cutting device	18
7	Safety requirements and measures for protection against other hazards	18
7.1	Fire	18
7.2	Noise	18
7.2.1	Noise reduction at the design stage	18
7.2.2	Noise emission measurement	18
7.3	Emission of chips and dust	19
7.4	Electricity	19
7.4.1	General	19
7.4.2	Displaceable machines	19
7.5	Ergonomics and handling	19
7.6	Lighting	20
7.7	Pneumatics	20
7.8	Hydraulics	20
7.9	Electromagnetic compatibility	20
7.10	Laser	20
7.11	Static electricity	20
7.12	Errors of fitting	20
7.13	Isolation	20
7.14	Maintenance	21
8	Information for use	21
8.1	Warning devices	21
8.2	Marking	21
8.2.1	General	21
8.2.2	Additional markings	21
8.3	Instruction handbook	21
8.3.1	General	21
8.3.2	Additional information	22
Annex A (informative)	Performance level required	23
Annex B (normative)	Test for braking function	25
Annex C (normative)	Stability test for displaceable machines	26
Annex D (normative)	Impact test for guards	27
Annex E (normative)	Noise emission measurement for machines not in ISO 7960:1995	28
Annex F (normative)	Riving knife longitudinal and lateral stability tests	29