DIN EN ISO 19085-16:2022-05 (E)

Woodworking machines - Safety - Part 16: Table band saws and band re-saws (ISO 190 85-16:2021)

Contents

Page

European foreword ... **4**

Annex ZA (informative) **Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered** ... **5**

Foreword ... **8**

Introduction ... **9**

1 Scope ... **11**

2 Normative references ... **11**

3 Terms and definitions ... **12**

4 Safety requirements and measures for controls ... **16**
4.1 Safety and reliability of control systems ... 16
4.2 Control devices ... 16
4.3 Start ... 16
4.3.1 Direct start ... 16
4.3.2 Start via control power-on ... 16
4.4 Safe stops ... 16
4.4.1 General ... 16
4.4.2 Normal stop ... 16
4.4.3 Operational stop ... 16
4.4.4 Emergency stop ... 16
4.5 Braking function of tools ... 16
4.6 Mode selection ... 16
4.7 Tool speed changing ... 17
4.7.1 Speed changing by shifting the belts on the pulleys ... 17
4.7.2 Speed changing by incremental speed change motor ... 17
4.7.3 Infinitely variable speed by frequency inverter ... 17
4.8 Failure of any power supply ... 17
4.9 Manual reset control ... 17
4.10 Standstill detection and monitoring ... 17
4.11 Machine moving parts speed monitoring ... 17
4.12 Time delay ... 17
4.13 Teleservice ... 17

5 Safety requirements and measures for protection against mechanical hazards ... **18**
5.1 Stability ... 18
5.2 Risk of break-up during operation ... 18
5.3 Tool and tool fixing design ... 18
5.3.1 General ... 18
5.3.2 Spindle locking ... 18
5.3.3 Circular saw blade fixing device ... 18
5.3.4 Flange dimensions for circular saw blades ... 18
5.3.5 Band saw blade straining and tracking ... 18
5.3.6 Band saw blade guides ... 19
5.4 Braking ... 21
5.4.1 Braking of tools ... 21
5.4.2 Maximum run-down time ... 21
5.4.3 Brake release ... 21

5.5 Safeguards ... 21
5.5.1 Fixed guards ... 21
5.5.2 Interlocking movable guards ... 21
5.5.3 Hold-to-run control ... 21
5.5.4 Two-hand control ... 21
5.5.5 Electro-sensitive protective equipment (ESPE) ... 21
5.5.6 Pressure-sensitive protective equipment (PSPE) ... 22
5.5.7 Enabling control ... 22
5.6 Prevention of access to hazardous moving parts ... 22
5.6.1 Guarding of the non-cutting area of the band saw blade ... 22
5.6.2 Guarding of the cutting area of the band saw blade ... 22
5.6.3 Guarding of drives ... 23
5.7 Impact hazard ... 23
5.8 Clamping devices ... 23
5.9 Measures against ejection ... 23
5.9.1 General ... 23
5.9.2 Guards material and characteristics ... 24
5.10 Workpiece supports and guides ... 24
5.10.1 Requirements for table band saws ... 24
5.10.2 Requirements for band resaws ... 26
5.11 Safety appliances ... 27

6 Safety requirements and measures for protection against other hazards ... 27
6.1 Fire ... 27
6.2 Noise ... 27
6.2.1 Noise reduction at the design stage ... 27
6.2.2 Noise emission measurement and declaration ... 28
6.3 Emission of chips and dust ... 28
6.4 Electricity ... 28
6.5 Ergonomics and handling ... 28
6.6 Lighting ... 29
6.7 Pneumatics ... 29
6.8 Hydraulics ... 29
6.9 Electromagnetic compatibility ... 29
6.10 Laser ... 29
6.11 Static electricity ... 29
6.12 Errors of fitting ... 29
6.13 Isolation ... 29
6.14 Maintenance ... 29
6.15 Relevant but not significant hazards ... 29

7 Information for use ... 29
7.1 Warning devices ... 29
7.2 Marking ... 29
7.2.1 General ... 29
7.2.2 Additional markings ... 30
7.3 Instruction handbook ... 30
7.3.1 General ... 30
7.3.2 Additional information ... 30

Annex A (informative) **List of significant hazards ... 32**

Annex B (informative) **Performance level required ... 34**

Annex C (normative) **Stability test ... 35**

Annex D (normative) **Test for braking function ... 36**

Annex E (normative) **Impact test for guards ... 37**

Annex F (normative) **Noise test code ... 38**

Annex G (normative) **Rigidity test of the adjustable guard above the cutting area of the band saw blade ... 42**