

# DIN EN ISO 19085-9:2020-08 (E)

## Woodworking machines - Safety - Part 9: Circular saw benches (with and without sliding table) (ISO 19085-9:2019)

---

<b>Contents</b>		<b>Page</b>
<b>European foreword</b> .....		<b>4</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered</b> .....		<b>5</b>
<b>Foreword</b> .....		<b>8</b>
<b>Introduction</b> .....		<b>9</b>
<b>1</b>	<b>Scope</b> .....	<b>10</b>
<b>2</b>	<b>Normative references</b> .....	<b>11</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>11</b>
<b>4</b>	<b>List of significant hazards</b> .....	<b>12</b>
<b>5</b>	<b>Safety requirements and measures for controls</b> .....	<b>14</b>
5.1	Safety and reliability of control systems.....	14
5.2	Control devices.....	14
5.3	Start.....	15
5.4	Safe stops.....	16
5.4.1	General.....	16
5.4.2	Normal stop.....	16
5.4.3	Operational stop.....	16
5.4.4	Emergency stop.....	16
5.5	Braking function of tool spindles.....	16
5.6	Mode selection.....	16
5.7	Spindle speed changing.....	16
5.7.1	Spindle speed changing by changing belts on the pulleys.....	16
5.7.2	Spindle speed changing by incremental speed change motor.....	16
5.7.3	Infinitely variable speed by frequency inverter.....	16
5.8	Failure of any power supply.....	16
5.9	Manual reset control.....	16
5.10	Enabling control.....	17
5.11	Machine moving parts speed monitoring.....	17
5.12	Time delay.....	17
5.13	Power-operated adjustment of the saw blades and/or fences.....	17
<b>6</b>	<b>Safety requirements and measures for protection against mechanical hazards</b> .....	<b>18</b>
6.1	Stability.....	18
6.1.1	Stationary machines.....	18
6.1.2	Displaceable machines.....	18
6.2	Risk of break-up during operation.....	18
6.3	Tool holder and tool design.....	18
6.3.1	General.....	18
6.3.2	Spindle locking.....	18
6.3.3	Circular saw blade fixing device.....	18
6.3.4	Flange dimension for circular saw blades.....	18
6.3.5	Fixing device for milling tools.....	18
6.4	Braking.....	19
6.4.1	Braking of tool spindles.....	19
6.4.2	Maximum run-down time.....	19
6.4.3	Brake release.....	19

6.5	Safeguards.....	10
6.5.1	Fixed guards.....	19
6.5.2	Interlocking movable guards.....	19
6.5.3	Hold-to-run control.....	19
6.5.4	Two-hand control.....	19
6.5.5	Electro-sensitive protective equipment (ESPE).....	19
6.5.6	Pressure-sensitive protective equipment (PSPE).....	20
6.6	Prevention of access to moving parts.....	20
6.6.1	General.....	20
6.6.2	Guarding of tools.....	20
6.6.3	Guarding of drives.....	27
6.6.4	Guarding of shearing and/or crushing zones.....	27
6.7	Impact hazard.....	28
6.8	Clamping devices.....	28
6.9	Measures against ejection.....	28
6.9.1	General.....	28
6.9.2	Guards materials and characteristics.....	28
6.9.3	Anti-kickback devices.....	28
6.10	Work-piece supports and guide.....	32
6.10.1	Rip fence.....	32
6.10.2	Cross-cut fence.....	35
6.10.3	Machine table.....	36
6.10.4	Extension table.....	36
6.11	Safety appliances.....	36
<b>7</b>	<b>Safety requirements and measures for protection against other hazards.....</b>	<b>38</b>
7.1	Fire.....	38
7.2	Noise.....	38
7.2.1	Noise reduction at the design stage.....	38
7.2.2	Noise emission measurement.....	38
7.3	Emission of chips and dust.....	38
7.4	Electricity.....	38
7.4.1	General.....	38
7.4.2	Displaceable machines.....	39
7.5	Ergonomics and handling.....	39
7.6	Lighting.....	39
7.7	Pneumatics.....	39
7.8	Hydraulics.....	39
7.9	Electromagnetic compatibility.....	39
7.10	Laser.....	39
7.11	Static electricity.....	39
7.12	Errors of fitting.....	39
7.13	Isolation.....	40
7.14	Maintenance.....	40
<b>8</b>	<b>Information for use.....</b>	<b>40</b>
8.1	Warning devices.....	40
8.2	Marking.....	40
8.2.1	General.....	40
8.2.2	Additional markings.....	40
8.3	Instruction handbook.....	40
8.3.1	General.....	40
8.3.2	Additional information.....	41

<b>Annex A</b> (informative) <b>Performance level required</b> .....	<b>43</b>
<b>Annex B</b> (normative) <b>Test for braking function</b> .....	<b>44</b>
<b>Annex C</b> (normative) <b>Stability test for displaceable machines</b> .....	<b>45</b>
<b>Annex D</b> (normative) <b>Impact test for guards</b> .....	<b>46</b>
<b>Annex E</b> (normative) <b>Noise emission measurement for machines not in ISO 7960:1995</b> .....	<b>47</b>
<b>Annex F</b> (normative) <b>Saw blade guard rigidity test</b> .....	<b>48</b>
<b>Annex G</b> (normative) <b>Minimum dimensions of machine table, extension table and table insert</b> .....	<b>52</b>
<b>Annex H</b> (normative) <b>Riving knife longitudinal and lateral stability test</b> .....	<b>54</b>
<b>Bibliography</b> .....	<b>56</b>