

**CPC****COOPERATIVE PATENT CLASSIFICATION****B24D**

**TOOLS FOR GRINDING, BUFFING, OR SHARPENING** (tools for grinding or polishing optical surfaces on lenses or surfaces of similar shape [B24B 13/01](#); grinding heads [B24B 41/00](#); manufacture of abrasive or friction articles or shaped materials containing macromolecular substances [C08J5/14](#); polishing compositions [C09G 1/00](#); abrasives [C09K 3/14](#))

**NOTES**

1. This subclass covers grinding tools for working on any material
2. Tools for grinding, buffing or sharpening, specially designed for a particular purpose, which purpose is provided for in a single other place, are classified in that place, e.g. [B23F 21/02](#)

**B24D 3/00**

**Physical features of abrasive bodies, or sheets, e.g. abrasive surfaces of special nature; Abrasive bodies or sheets characterised by their constituents** (composition of friction linings [F16D 69/02](#))

[B24D 3/001](#)

- {the constituent being used as supporting member}

[B24D 3/002](#)

- • {Flexible supporting members, e.g. paper, woven, plastic materials}

[B24D 3/004](#)

- • • {with special coatings}

[B24D 3/005](#)

- {the constituent being used during pre- or after-treatment ([B24D 3/348](#) takes precedence)}

[B24D 3/007](#)

- {the constituent being used as bonding agent between different parts of an abrasive tool}

[B24D 3/008](#)

- {Abrasive bodies without external bonding agent}

[B24D 3/02](#)

- the constituent being used as bonding agent

[B24D 3/04](#)

- • and being essentially inorganic

[B24D 3/06](#)

- • • metallic {or mixture of metals with ceramic materials, e.g. hard metals, "cermets", cements}

[B24D 3/08](#)

- • • • for close-grained structure, e.g. using metal with low melting point

[B24D 3/10](#)

- • • • for porous or cellular structure, e.g. for use with diamonds as abrasives

[B24D 3/12](#)

- • • water-setting, e.g. concrete

[B24D 3/14](#)

- • • ceramic, i.e. vitrified bondings {(mixture with metals [B24D 3/06](#))}

[B24D 3/16](#)

- • • • for close-grained structure, i.e. of high density

[B24D 3/18](#)

- • • • for porous or cellular structure

[B24D 3/20](#)

- • and being essentially organic

[B24D 3/22](#)

- • • Rubbers {synthetic or natural}

[B24D 3/24](#)

- • • • for close-grained structure {([B24D 3/002](#) takes precedence)}

[B24D 3/26](#)

- • • • for porous or cellular structure

[B24D 3/28](#)

- • • Resins {or natural or synthetic macromolecular compounds ([B24D 3/22](#) takes precedence)}

[B24D 3/285](#)

- • • • {Reaction products obtained from aldehydes or ketones}

- B24D 3/30 . . . . for close-grained structure
- B24D 3/32 . . . . for porous or cellular structure
- B24D 3/34 . characterised by additives enhancing special physical properties, e.g. wear resistance, electric conductivity, self-cleaning properties
- B24D 3/342 . . {incorporated in the bonding agent}
- B24D 3/344 . . . {the bonding agent being organic}
- B24D 3/346 . . {utilised during polishing, or grinding operation}
- B24D 3/348 . . {utilised as impregnating agent for porous abrasive bodies (after-treatments in general [B24D 3/005](#))}

### **Bonded abrasive wheels**

#### **B24D 5/00      Bonded abrasive wheels, or wheels with inserted abrasive blocks, designed for acting only by their periphery; Bushings or mountings therefor**

- B24D 5/02 . Wheels in one piece
- B24D 5/04 . . with reinforcing means
- B24D 5/06 . with inserted abrasive blocks, e.g. segmental ([zonally graded B24D 5/14](#))
- B24D 5/063 . . {with segments embedded in a matrix which is rubbed away during the grinding process}
- B24D 5/066 . . {with segments mounted axially one against the other}
- B24D 5/08 . . with reinforcing means
- B24D 5/10 . with cooling provisions, e.g. with radial slots
- B24D 5/12 . Cut-off wheels
- B24D 5/123 . . {having different cutting segments}
- B24D 5/126 . . {having an internal cutting edge}
- B24D 5/14 . Zonally-graded wheels; Composite wheels comprising different abrasives
- B24D 5/16 . Bushings; Mountings
- B24D 5/165 . . {Balancing means}

#### **B24D 7/00      Bonded abrasive wheels, or wheels with inserted abrasive blocks, designed for acting otherwise than only by their periphery, e.g. by the front face; Bushings or mountings therefor**

- B24D 7/005 . {for cutting spherical surfaces}
- B24D 7/02 . Wheels in one piece
- B24D 7/04 . . with reinforcing means
- B24D 7/06 . with inserted abrasive blocks, e.g. segmental ([zonally-graded B24D 7/14](#))
- B24D 7/063 . . {with segments embedded in a matrix which is rubbed away during the grinding process}
- B24D 7/066 . . {Grinding blocks; their mountings or supports}
- B24D 7/08 . . with reinforcing means
- B24D 7/10 . with cooling provisions
- B24D 7/12 . with apertures for inspecting the surface to be abraded
- B24D 7/14 . Zonally-graded wheels; Composite wheels comprising different abrasives

- B24D 7/16
  - Bushings; Mountings
- B24D 7/18
  - Wheels of special form (if specially designed for a particular purpose provided for in a single other class, that class takes precedence; {saw cylinders having their cutting rim equipped with abrasive particles for working stone or glass [B28D 1/041](#)})
- B24D 9/00**

**Wheels or drums supporting in exchangeable arrangement a layer of flexible abrasive material, e.g. sandpaper (wheels or drums as machine elements [F16](#))**
- B24D 9/003
  - {Wheels having flaps of flexible abrasive material supported by a flexible material}
- B24D 9/006
  - {Tools consisting of a rolled strip of flexible material}
- B24D 9/02
  - Expansible drums for carrying flexible material in tubular form, e.g. expanded by centrifugal force
- B24D 9/04
  - Rigid drums for carrying flexible material
- B24D 9/06
  - . . able to be stripped-off from a built-in delivery spool
- B24D 9/08
  - Circular back-plates for carrying flexible material
- B24D 9/085
  - . . {Devices for mounting sheets on a backing plate}
- B24D 9/10
  - . . with suction means for securing the material
- B24D 11/00**

**Constructional features of flexible abrasive materials; Special features in the manufacture of such materials**
- B24D 11/001
  - {Manufacture of flexible abrasive materials}
- B24D 11/003
  - . . {without embedded abrasive particles ([B24D 11/005](#) takes precedence)}
- B24D 11/005
  - . . {Making abrasive webs}
- B24D 11/006
  - . . . {without embedded abrasive particles}
- B24D 11/008
  - {Finishing manufactured abrasive sheets, e.g. cutting, deforming}
- B24D 11/02
  - Backings, e.g. foils, webs, mesh fabrics
- B24D 11/04
  - Zonally-graded surfaces
- B24D 11/06
  - Connecting the ends of materials, e.g. for making abrasive belts
- B24D 11/065
  - . . {Treatment of the ends of flexible abrasive materials before connecting them}
- B24D 11/08
  - Equipment for after-treatment of the coated backings, e.g. for flexing the coating
- B24D 13/00**

**Wheels having flexibly-acting working parts, e.g. buffing wheels; Mountings therefor**
- B24D 13/02
  - acting by their periphery
- B24D 13/04
  - . . comprising a plurality of flaps or strips arranged around the axis
- B24D 13/045
  - . . . {comprising flaps not covering the entire periphery of the wheel}
- B24D 13/06
  - . . the flaps or strips being individually attached
- B24D 13/08
  - . . comprising annular or circular sheets packed side by side
- B24D 13/085
  - . . . {comprising flaps with a circular sheet on each side}
- B24D 13/10
  - . . comprising assemblies of brushes
- B24D 13/12
  - . . comprising assemblies of felted or spongy material, e.g. felt, steel wool, foamed latex

- B24D 13/14 . acting by the front face
- B24D 13/142 . . {Wheels of special form}
- B24D 13/145 . . {having a brush-like working surface}
- B24D 13/147 . . {comprising assemblies of felted or spongy material; comprising pads surrounded by a flexible material}
- B24D 13/16 . . comprising pleated flaps or strips
- B24D 13/18 . with cooling provisions
- B24D 13/20 . Mountings for the wheels

**B24D 15/00****Hand tools or other devices for non-rotary grinding, polishing, or stropping**

- B24D 15/02 . rigid; with rigidly-supported operative surface
- B24D 15/023 . . {using in exchangeable arrangement a layer of flexible material}
- B24D 15/026 . . . {able to be stripped-off from a built-in delivery spool}
- B24D 15/04 . resilient; with resiliently-mounted operative surface
- B24D 15/045 . . {Glove-shaped abrasive devices}
- B24D 15/06 . specially designed for sharpening cutting edges
- B24D 15/061 . . {for electric shaving blades}
- B24D 15/063 . . {for grinding shears, scissors}
- B24D 15/065 . . {for sharpening both knives and scissors}
- B24D 15/066 . . {for sharpening skate blades, i.e. blades having two sharp edges defined by three surfaces intersecting in pairs at an angle of substantially 90°}
- B24D 15/068 . . {for sharpening ski edges, i.e. sharp edges defined by two surfaces intersecting at an angle of substantially 90°}
- B24D 15/08 . . of knives; of razors
- B24D 15/081 . . . {with sharpening elements in interengaging or in mutual contact}
- B24D 15/082 . . . . {the elements being rotatable}
- B24D 15/084 . . . {the sharpening elements being fitted to knife sheaths, holders or handles}
- B24D 15/085 . . . {with reciprocating whetstones}
- B24D 15/087 . . . . {having a crank handle}
- B24D 15/088 . . . {with whetting leather}
- B24D 15/10 . . of safety-razor blades (devices with mechanically-operated parts [B24B 3/50](#))
- B24D 15/105 . . . {Holders therefor}

**B24D 18/00****Manufacture of grinding tools {or other grinding devices}, e.g. wheels, not otherwise provided for**

- B24D 18/0009 . {using moulds or presses}
- B24D 18/0018 . {by electrolytic deposition}
- B24D 18/0027 . {by impregnation}
- B24D 18/0036 . {by winding up abrasive bands}
- B24D 18/0045 . {by stacking sheets of abrasive material}
- B24D 18/0054 . {by impressing abrasive powder in a matrix}

B24D 18/0063	• {by extrusion}
B24D 18/0072	• {using adhesives for bonding abrasive particles or grinding elements to a support, e.g. by gluing}
B24D 18/0081	• {of wire-reinforced grinding tools}
B24D 18/009	• {Tools not otherwise provided for}
<b>B24D 99/00</b>	<b>Subject matter not provided for in other groups of this subclass {(B28D 1/124 takes precedence)}</b>
B24D 99/005	• {Segments of abrasive wheels}

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<b>B24D 2201/00</b>	<b>Bushings or mountings integral with the grinding wheel</b>
<b>B24D 2203/00</b>	<b>Tool surfaces formed with a pattern</b>
<b>B24D 2205/00</b>	<b>Grinding tools with incorporated marking device</b>