

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 [C08J 5/14](#); polishing compositions [C09G 1/00](#); abrasives [C09K 3/14](#))

NOTE

This subclass covers grinding tools for working on any material

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}

- B24D 99/00** **Subject matter not provided for in other groups of this subclass {([B28D 1/124](#) takes precedence)}**

- B24D 99/005 . { Segments of abrasive wheels}

- B24D 2201/00** **Bushings or mountings integral with the grinding wheel**

B24D 2203/00 **Tool surfaces formed with a pattern**

B24D 2205/00 **Grinding tools with incorporated marking device**