

**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](#)

**Guidance heading:****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 { <a href="#">(B24D 3/002 takes precedence)</a> }
B24D 3/26	....	for porous or cellular structure
B24D 3/28	...	Resins {or natural or synthetic macromolecular compounds <a href="#">(B24D 3/22 takes precedence)</a> }
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 <a href="#">(after-treatments in general B24D 3/005)</a> }

**Guidance heading: 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 <a href="#">(zonally graded B24D 5/14)</a>
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 }

**Guidance heading:**

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

**Guidance heading:**

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

**B24D 2205/00**

**Grinding tools with incorporated marking device**