

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SHAPING

B23 MACHINE TOOLS; METAL-WORKING NOT OTHERWISE PROVIDED FOR

(NOTES omitted)

B23C MILLING (broaching [B23D](#); broach-milling in making gears [B23F](#); arrangement for copying or controlling [B23Q](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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| 1/00 | Milling machines not designed for particular work or special operations | 3/053 | {having means for guiding the tool carrying spindle} |
| 1/002 | . {Gantry-type milling machines} | 3/055 | {for engines} |
| 1/005 | . {with a tool moving in a closed path around the workpiece} | 3/056 | {for taps or valves} |
| 1/007 | . {movable milling machines, e.g. on rails} | 3/058 | . . . {Reconditioning of valves} |
| 1/02 | . with one horizontal working-spindle | 3/06 | . Milling crankshafts |
| 1/025 | . . with working-spindle movable in a fixed position | 3/08 | . Milling cams, camshafts, or the like |
| 1/027 | . . with working-spindle movable in a vertical direction | 3/10 | . Relieving by milling |
| 1/04 | . with a plurality of horizontal working-spindles | 3/12 | . Trimming or finishing edges, e.g. deburring welded corners |
| 1/045 | . . {Opposed - spindle machines} | 3/122 | . . {of pipes or cylinders} |
| 1/06 | . with one vertical working-spindle | 3/124 | . . . {internally} |
| 1/08 | . with a plurality of vertical working-spindles | 3/126 | . . {Portable devices or machines for chamfering edges} |
| 1/10 | . with both horizontal and vertical working-spindles | 3/128 | . . {Trimming or finishing edges of doors and windows} |
| 1/12 | . with spindle adjustable to different angles, e.g. either horizontal or vertical | 3/13 | . Surface milling of plates, sheets or strips |
| 1/14 | . with rotary work-carrying table (work tables for machine tools in general B23Q 1/00) | 3/14 | . Scrubbing or peeling ingots or similar workpieces |
| 1/16 | . specially designed for control by copying devices { (not used; see B23Q 35/00) } | 3/16 | . Working surfaces curved in two directions |
| 1/18 | . . for milling while revolving the work | 3/18 | . . for shaping screw-propellers, turbine blades, or impellers |
| 1/20 | . Portable devices or machines (details or components, e.g. casings, bodies, of portable power-driven tools not particularly related to the operation performed B25F 5/00); Hand-driven devices or machines | 3/20 | . . for shaping dies |
| 3/00 | Milling particular work; Special milling operations; Machines therefor (milling gear-teeth B23F, heat assisted machining B23P 25/00) | 3/22 | . Forming overlapped joints, e.g. of the ends of piston-rings |
| 3/002 | . {Milling elongated workpieces} | 3/24 | . Making square or polygonal ends on workpieces, e.g. key studs on tools |
| 3/005 | . . {Rails} | 3/26 | . Making square or polygonal holes in workpieces, e.g. key holes in tools |
| 3/007 | . {Milling end surfaces of nuts or tubes} | 3/28 | . Grooving workpieces (tread-cutting by milling B23G 1/32) |
| 3/02 | . Milling surfaces of revolution (B23C 3/06 , B23C 3/08 take precedence) | 3/30 | . . Milling straight grooves, e.g. keyways |
| 3/023 | . . {Milling spherical surfaces} | 3/305 | . . . {in which more than one milling tool is used simultaneously, e.g. for sheet material} |
| 3/026 | . . . {Milling balls} | 3/32 | . . Milling helical grooves, e.g. in making twist-drills |
| 3/04 | . . while revolving the work | 3/34 | . . Milling grooves of other forms, e.g. circumferential |
| 3/05 | . . Finishing valves or valve seats {(machines for grinding seat surfaces, e.g. in valve housings, B24B 15/00)} | 3/35 | . . Milling grooves in keys |
| 3/051 | . . . {Reconditioning of valve seats} | 3/355 | . . . {Holders for the template keys} |
| | | 3/36 | . Milling milling-cutters (B23C 3/28 takes precedence) |
| | | 5/00 | Milling-cutters (for cutting gear-teeth B23F 21/12) |
| | | 5/003 | . {with vibration suppressing means} |

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| 5/006 | . {Details of the milling cutter body} | 5/2243 | {for plate-like cutting inserts (B23C 5/2252 , B23C 5/2256 , B23C 5/226 take precedence)} |
| 5/02 | . characterised by the shape of the cutter | 5/2247 | {having a special shape} |
| 5/04 | . . Plain cutters, i.e. having essentially a cylindrical or tapered cutting surface of substantial length (B23C 5/10 takes precedence) | 5/2252 | {for plate-like cutting inserts fitted on an intermediate carrier} |
| 5/06 | . . Face-milling cutters, i.e. having only or primarily a substantially flat cutting surface | 5/2256 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} |
| 5/08 | . . Disc-type cutters | 5/226 | {for plate-like cutting inserts fitted on a ring or ring segment} |
| 5/10 | . . Shank-type cutters, i.e. with an integral shaft | 5/2265 | {by means of a wedge} |
| 5/1009 | . . . {Ball nose end mills} | 5/2269 | {for plate-like cutting inserts (B23C 5/2278 , B23C 5/2286 , B23C 5/2291 take precedence)} |
| 5/1018 | {with permanently fixed cutting inserts} | 5/2273 | {having a special shape} |
| 5/1027 | {with one or more removable cutting inserts} | 5/2278 | {for plate-like cutting inserts fitted on an intermediate carrier} |
| 5/1036 | {having a single cutting insert, the cutting edges of which subtend 180 degrees} | 5/2282 | {having a special shape} |
| 5/1045 | {having a cutting insert, the cutting edge of which subtends substantially 90 degrees} | 5/2286 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} |
| 5/1054 | . . . {T slot cutters} | 5/2291 | {for plate-like cutting inserts fitted on a ring or ring segment} |
| 5/1063 | {with permanently fixed cutting inserts} | 5/2295 | {the cutting elements being clamped simultaneously} |
| 5/1072 | {with removable cutting inserts} | 5/24 | adjustable |
| 5/1081 | . . . {with permanently fixed cutting inserts (B23C 5/1054 and B23C 5/1081 take precedence)} | 5/2403 | {with cutting inserts clamped against the walls of the recess in the shank by a clamping member acting upon the wall of a hole in the insert} |
| 5/109 | . . . {with removable cutting inserts} | 5/2406 | {for plate-like cutting inserts (B23C 5/241 , B23C 5/2413 , B23C 5/2417 take precedence)} |
| 5/12 | . . Cutters specially designed for producing particular profiles (B23C 5/10 takes precedence) | 5/241 | {for plate-like cutting inserts fitted on an intermediate carrier} |
| 5/14 | . . . essentially comprising curves (B23C 5/1009 takes precedence)} | 5/2413 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} |
| 5/16 | . characterised by physical features other than shape | 5/2417 | {for plate-like cutting inserts fitted on a ring or ring segment} |
| 5/165 | . . {with chipbreaking or chipdividing equipment (for turning machines B23B 25/02 ; turning tools B23B 27/00 ; drilling machines B23B 47/34)} | 5/242 | {with cutting inserts clamped by a clamping member acting almost perpendicularly on the cutting face} |
| 5/18 | . . with permanently-fixed cutter-bits or teeth | 5/2424 | {for plate-like cutting inserts (B23C 5/2427 , B23C 5/2431 , B23C 5/2434 take precedence)} |
| 5/20 | . . with removable cutter bits or teeth {or cutting inserts} | 5/2427 | {for plate-like cutting inserts fitted on an intermediate carrier} |
| 5/202 | . . . {Special by shaped plate-like cutting inserts, i.e. length greater than or equal to width, width greater than or equal to thickness (with removable plate-like turning cutting inserts of special form B23B 27/141)} | 5/2431 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} |
| 5/205 | {having chip-breakers} | 5/2434 | {for plate-like cutting inserts fitted on a ring or ring segment} |
| 5/207 | {having a special shape} | 5/2437 | {clamping by means of a wedge} |
| 5/22 | . . . Securing arrangements for bits or teeth {or cutting inserts} | 5/2441 | {for plate-like cutting inserts (B23C 5/2444 , B23C 5/2448 , B23C 5/2451 take precedence)} |
| 5/2204 | {with cutting inserts clamped against the walls of the recess in the shank by a clamping member acting upon the wall of a hole in the insert} | 5/2444 | {for plate-like cutting inserts fitted on an intermediate carrier} |
| 5/2208 | {for plate-like cutting inserts (B23C 5/2226 , B23C 5/223 , B23C 5/2234 take precedence)} | 5/2448 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} |
| 5/2213 | {Special by shaped cutting inserts} | 5/2451 | {for plate-like cutting inserts fitted on a ring or ring segment} |
| 5/2217 | {having chip-breakers} | 5/2455 | {The adjusting means being serrated teeth on the cutter and the cutting insert} |
| 5/2221 | {having a special shape} | 5/2458 | {the cutting elements being clamped or adjusted simultaneously} |
| 5/2226 | {for plate-like cutting inserts fitted on an intermediate carrier} | | |
| 5/223 | {for plate-like cutting inserts fitted on a shank, fixed in the cutter body} | | |
| 5/2234 | {for plate-like cutting inserts fitted on a ring or ring segment} | | |
| 5/2239 | {with cutting inserts clamped by a clamping member acting almost perpendicular on the cutting face} | | |

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| 5/2462 | {the adjusting means being oblique surfaces} | 2200/123 | . . curved |
| 5/2465 | {the adjusting means being notches} | 2200/125 | . . discontinuous |
| 5/2468 | {the adjusting means being serrations} | 2200/126 | . . . stepped |
| 5/2472 | {the adjusting means being screws} | 2200/128 | . . with one or more grooves |
| 5/2475 | {the adjusting means being distance elements, e.g. shims or washers} | 2200/16 | . Supporting or bottom surfaces |
| 5/2479 | {the adjusting means being eccentrics} | 2200/161 | . . with projections |
| 5/2482 | {the adjusting means being hydraulic cylinders} | 2200/162 | . . curved |
| 5/2486 | {where the adjustment is made by balancing the toolholders} | 2200/164 | . . discontinuous |
| 5/2489 | {where the adjustment is made by changing the inclination of the inserts} | 2200/165 | . . with one or more grooves |
| 5/2493 | {where the adjustment is made by deforming the seating surfaces} | 2200/167 | . . star form |
| 5/2496 | {where the adjusting means are gears and racks} | 2200/168 | . . with features related to indexing (with lines to permit indexing of round inserts B23C 2200/363) |
| 5/26 | . Securing milling cutters to the driving spindle | 2200/20 | . Top or side views of the cutting edge |
| 5/265 | . . {by fluid pressure means} | 2200/201 | . . Details of the nose radius and immediately surrounding areas |
| 5/28 | . Features relating to lubricating or cooling | 2200/203 | . . Curved cutting edges |
| 7/00 | Milling devices able to be attached to a machine tool, whether or not replacing an operative portion of the machine tool | 2200/205 | . . Discontinuous cutting edges |
| 7/02 | . to lathes | 2200/206 | . . Cutting edges having a wave-form |
| 7/04 | . to planing or slotting machines | 2200/208 | . . Wiper, i.e. an auxiliary cutting edge to improve surface finish |
| 9/00 | Details or accessories so far as specially adapted to milling machines or cutter (drives, control devices, or accessories, in general B23Q) | 2200/24 | . Cross section of the cutting edge |
| 9/005 | . {milling heads} | 2200/243 | . . bevelled or chamfered |
| 2200/00 | Details of milling cutting inserts | 2200/246 | . . rounded |
| 2200/04 | . Overall shape | 2200/28 | . Angles |
| 2200/0405 | . . Hexagonal | 2200/283 | . . Negative cutting angles |
| 2200/0411 | . . . irregular | 2200/286 | . . Positive cutting angles |
| 2200/0416 | . . Irregular | 2200/32 | . Chip breaking or chip evacuation |
| 2200/0422 | . . Octagonal | 2200/323 | . . by chip-breaking projections (with projection on top surface B23C 2200/081) |
| 2200/0427 | . . . rounded | 2200/326 | . . by chip breaking grooves (with grooves on top surface for chip-breaking B23C 2200/087) |
| 2200/0433 | . . Parallelogram | 2200/36 | . Other features of the milling insert not covered by B23C 2200/04 - B23C 2200/32 |
| 2200/0438 | . . . rounded | 2200/361 | . . Fixation holes |
| 2200/0444 | . . Pentagonal | 2200/362 | . . . Having two fixation holes |
| 2200/045 | . . Round | 2200/363 | . . Lines to permit indexing of round insert (bottom surface with features relating to indexing B23C 2200/168) |
| 2200/0455 | . . Square | 2200/365 | . . Lands, i.e. the outer peripheral section of rake faces |
| 2200/0461 | . . . rounded | 2200/366 | . . . Variable |
| 2200/0466 | . . Star form | 2200/367 | . . Mounted tangentially, i.e. where the rake face is not the face with largest area |
| 2200/0472 | . . Trapezium | 2200/368 | . . Roughened surfaces |
| 2200/0477 | . . Triangular | 2210/00 | Details of milling cutters |
| 2200/0483 | . . . rounded | 2210/02 | . Connections between the shanks and detachable cutting heads |
| 2200/0488 | . . Heptagonal | 2210/03 | . Cutting heads comprised of different material than the shank irrespective of whether the head is detachable from the shank |
| 2200/0494 | . . Rectangular | 2210/04 | . Angles |
| 2200/08 | . Rake or top surfaces | 2210/0407 | . . Cutting angles |
| 2200/081 | . . with projections (chip breaking projections in general B23C 2200/323) | 2210/0414 | . . . different |
| 2200/082 | . . with an elevated clamping surface | 2210/0421 | . . . negative |
| 2200/083 | . . curved | 2210/0428 | axial rake angle |
| 2200/085 | . . discontinuous | 2210/0435 | radial rake angle |
| 2200/086 | . . with one or more grooves | 2210/0442 | . . . positive |
| 2200/087 | . . . for chip-breaking (with chip-breaking grooves in general B23C 2200/326) | 2210/045 | axial rake angle |
| 2200/088 | . . spherical | 2210/0457 | radial rake angle |
| 2200/12 | . Side or flank surfaces | 2210/0464 | . . . neutral |
| 2200/121 | . . with projections | 2210/0471 | axial rake angle |
| | | 2210/0478 | radial rake angle |

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| 2210/0485 | . . Helix angles | 2210/40 | . Flutes, i.e. chip conveying grooves |
| 2210/0492 | . . . different | 2210/402 | . . of variable depth |
| 2210/08 | . Side or top views of the cutting edge | 2210/405 | . . . having decreasing depth in the direction of the shank from the tip of the tool |
| 2210/082 | . . Details of the corner region between axial and radial cutting edges | 2210/407 | . . . having increasing depth in the direction of the shank from the tip of the tool |
| 2210/084 | . . Curved cutting edges | 2210/44 | . Margins, i.e. the part of the peripheral surface immediately adjacent the cutting edge |
| 2210/086 | . . Discontinuous or interrupted cutting edges | 2210/445 | . . variable |
| 2210/088 | . . Cutting edges with a wave form | 2210/48 | . Chip breakers |
| 2210/12 | . Cross section of the cutting edge | 2210/483 | . . Chip breaking projections |
| 2210/123 | . . Bevelled cutting edges | 2210/486 | . . Chip breaking grooves or depressions |
| 2210/126 | . . Rounded cutting edges | 2210/50 | . Cutting inserts |
| 2210/16 | . Fixation of inserts or cutting bits in the tool (details of connections B23C 2240/00) | 2210/503 | . . mounted internally on the cutter |
| 2210/161 | . . Elastically deformable clamping members | 2210/506 | . . mounted so as to be able to rotate freely |
| 2210/163 | . . Indexing | 2210/52 | . Bushings |
| 2210/165 | . . Fixation bolts | 2210/54 | . Configuration of the cutting part |
| 2210/166 | . . Shims | 2210/56 | . Supporting or guiding sections located on the periphery of the tool |
| 2210/168 | . . Seats for cutting inserts, supports for replaceable cutting bits | 2210/58 | . Brushes |
| 2210/20 | . Number of cutting edges | 2210/60 | . Axis of the cutter inclined with respect to the axis of rotation |
| 2210/201 | . . one | 2210/62 | . Selectable cutting diameters |
| 2210/202 | . . three | 2210/64 | . End milling cutters having a groove in the end cutting face, the groove not being present so as to provide a cutting edge |
| 2210/203 | . . four | 2210/66 | . Markings, i.e. symbols or indicating marks |
| 2210/204 | . . five | 2210/68 | . Reground to nominal diameter by removal of material from both the front of the insert and the back of insert carrier |
| 2210/205 | . . six | 2210/70 | . Pilots |
| 2210/206 | . . seven | 2210/72 | . Rotatable in both directions |
| 2210/207 | . . eight | 2210/74 | . Slits |
| 2210/208 | . . ten | | |
| 2210/209 | . . twelve | | |
| 2210/24 | . Overall form of the milling cutter (angles B23C 2210/04 ; top or side views of cutting edges B23C 2210/08 ; cross sections of cutting edges B23C 2210/12) | 2215/00 | Details of workpieces |
| 2210/241 | . . Cross sections of the whole milling cutter | 2215/04 | . Aircraft components |
| 2210/242 | . . Form tools, i.e. cutting edges profiles to generate a particular form | 2215/045 | . . Propellers |
| 2210/243 | . . Cutting parts at both ends | 2215/08 | . Automotive parts (B23C 2215/16 , B23C 2215/20 and B23C 2215/24 take precedence) |
| 2210/244 | . . Milling cutters comprised of disc-shaped modules or multiple disc-like cutters | 2215/085 | . . Wheels |
| 2210/245 | . . Milling cutters comprising a disc having a wave form | 2215/12 | . Propellers for boats |
| 2210/246 | . . Milling cutters comprising a hole or hollow in the end face or between the cutting edges | 2215/16 | . Camshafts |
| 2210/247 | . . Stepped milling cutters | 2215/20 | . Crankshafts |
| 2210/248 | . . . with enlarged cutting heads | 2215/24 | . Components of internal combustion engines |
| 2210/28 | . Arrangement of teeth | 2215/242 | . . Combustion chambers |
| 2210/282 | . . Unequal angles between the cutting edges, i.e. cutting edges unequally spaced in the circumferential direction | 2215/245 | . . Connecting rods |
| 2210/285 | . . Cutting edges arranged at different diameters | 2215/247 | . . Components of diesel engines |
| 2210/287 | . . Cutting edges arranged at different axial positions or having different lengths in the axial direction | 2215/28 | . Nipples |
| 2210/32 | . Details of teeth | 2215/32 | . Railway tracks |
| 2210/321 | . . Lands, i.e. the area on the rake face in the immediate vicinity of the cutting edge | 2215/36 | . Railway wheels |
| 2210/323 | . . Separate teeth, i.e. discrete profiled teeth similar to those of a hob | 2215/40 | . Spectacles |
| 2210/325 | . . Different teeth, i.e. one tooth having a different configuration to a tooth on the opposite side of the flute | 2215/44 | . Turbine blades |
| 2210/326 | . . File like cutting teeth, e.g. the teeth of cutting burrs | 2215/48 | . Kaplan turbines |
| 2210/328 | . . Treated cutting edges | 2215/52 | . Axial turbine wheels |
| | | 2215/56 | . Radial turbine wheels |
| | | 2215/60 | . Valve guides in combination with the neighbouring valve seat |
| | | 2215/64 | . Well pipe windows, i.e. windows in tubings or casings for wells |
| | | 2220/00 | Details of milling processes |
| | | 2220/04 | . Milling with the axis of the cutter inclined to the surface being machined |

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| 2220/08 | • Milling with the axis of the tool perpendicular to the workpiece axis | 2226/315 | • . polycrystalline [PCD] |
| 2220/12 | • Cutting off, i.e. producing multiple discrete components from a single piece of material | 2226/33 | • Elastomers, e.g. rubber |
| 2220/16 | • Chamferring | 2226/37 | • Fibreglass |
| 2220/20 | • Deburring | 2226/41 | • Gypsum |
| 2220/24 | • Production of elliptical holes | 2226/42 | • Gem, i.e. precious stone |
| 2220/28 | • Finishing (roughing and finishing B23C 2220/605) | 2226/45 | • Glass (milling glass B28D 1/18) |
| 2220/32 | • Five-axis | 2226/54 | • Paper |
| 2220/36 | • Production of grooves | 2226/61 | • Plastics not otherwise provided for, e.g. nylon |
| 2220/363 | • . Spiral grooves | 2226/62 | • Polystyrene foam |
| 2220/366 | • . Turbine blade grooves | 2226/72 | • Silicon carbide |
| 2220/40 | • Using guiding means | 2226/73 | • Silicon nitride |
| 2220/44 | • High speed milling | 2226/75 | • Stone, rock or concrete (milling stone or like materials B28D 1/18) |
| 2220/48 | • Methods of milling not otherwise provided for | | |
| 2220/52 | • Orbital drilling, i.e. use of a milling cutter moved in a spiral path to produce a hole | 2228/00 | Properties of materials of tools or workpieces, materials of tools or workpieces applied in a specific manner |
| 2220/56 | • Plunge milling | 2228/04 | • applied by chemical vapour deposition [CVD] |
| 2220/60 | • Roughing | 2228/08 | • applied by physical vapour deposition [PVD] |
| 2220/605 | • . Roughing and finishing | 2228/10 | • Coating |
| 2220/64 | • Using an endmill, i.e. a shaft milling cutter, to generate profile of a crankshaft or camshaft | 2228/12 | • Cast, i.e. in the form of a casting |
| 2220/68 | • Whirling | 2228/14 | • Flexible |
| | | 2228/24 | • Hard, i.e. after being hardened |
| | | 2228/25 | • Honeycomb |
| 2222/00 | Materials of tools or workpieces composed of metals, alloys or metal matrices | 2228/26 | • Hot |
| 2222/04 | • Aluminium | 2228/49 | • Sintered |
| 2222/06 | • Babbitt metal | 2228/50 | • Soft metal |
| 2222/12 | • Brass | | |
| 2222/14 | • Cast iron | 2230/00 | Details of chip evacuation (chip evacuation in cutting inserts B23C 2200/32) |
| 2222/16 | • Cermet | 2230/04 | • Transport of chips |
| 2222/28 | • Details of hard metal, i.e. cemented carbide | 2230/045 | • . to the middle of the cutter or in the middle of a hollow cutter |
| 2222/32 | • Details of high speed steel (steel B23C 2222/84) | 2230/08 | • Using suction |
| 2222/52 | • Magnesium | | |
| 2222/61 | • Metal matrices with metallic or non-metallic particles or fibres | 2235/00 | Details of milling keys |
| 2222/64 | • Nickel | 2235/04 | • Keys with blind holes |
| 2222/76 | • Silver | 2235/08 | • Brushes |
| 2222/78 | • Sodium | 2235/12 | • Using a database to store details of the key, the information in the database being used for the generation of the profile of the key |
| 2222/84 | • Steel (details of high speed steel B23C 2222/32) | | |
| 2222/88 | • Titanium | 2235/16 | • Dial indicators |
| 2222/98 | • Zinc | 2235/21 | • Calibration by electronic detection of position of probes and cutting wheels |
| | | 2235/24 | • Electronic sensors |
| 2224/00 | Materials of tools or workpieces composed of a compound including a metal | 2235/28 | • Key blanks |
| 2224/04 | • Aluminium oxide | 2235/32 | • Measurement systems |
| 2224/13 | • Chromium nitride | 2235/36 | • Ring keys |
| 2224/14 | • Chromium aluminium nitride (CrAlN) | 2235/41 | • Scanning systems |
| 2224/20 | • Tantalum carbide | 2235/44 | • Templates for the simulation of keys |
| 2224/22 | • Titanium aluminium carbide nitride (TiAlCN) | 2235/48 | • Tracers, probes or styli |
| 2224/24 | • Titanium aluminium nitride (TiAlN) | | |
| 2224/28 | • Titanium carbide | 2240/00 | Details of connections of tools or workpieces (fixation of the cutting insert or bit in the tool B23C 2210/16) |
| 2224/32 | • Titanium carbide nitride (TiCN) | 2240/04 | • Bayonet connections |
| 2224/36 | • Titanium nitride | 2240/08 | • Brazed connections |
| 2224/56 | • Vanadium aluminium nitride (VAlN) | 2240/12 | • Connections using captive nuts |
| | | 2240/16 | • Welded connections |
| 2226/00 | Materials of tools or workpieces not comprising a metal | 2240/21 | • Glued connections |
| 2226/12 | • Boron nitride | 2240/24 | • Connections using screws |
| 2226/125 | • . cubic [CBN] | 2240/245 | • . hollow screws, e.g. for the transmission of coolant |
| 2226/18 | • Ceramic | 2240/32 | • Connections using screw threads |
| 2226/27 | • Composites, e.g. fibre reinforced composites | | |
| 2226/31 | • Diamond | | |

2245/00 Details of adjusting inserts or bits in the milling cutter

- 2245/04 . Adjustable wedge surfaces
- 2245/08 . Setting gauges
- 2245/12 . Spiral discs

2250/00 Compensating adverse effects during milling

- 2250/04 . Balancing the cutter ([vibration damping B23C 2250/16](#))
- 2250/08 . compensating centrifugal force
- 2250/12 . Cooling and lubrication
- 2250/16 . Damping vibrations ([balancing B23C 2250/04](#))
- 2250/21 . compensating wear of parts not designed to be exchanged as wear parts

2255/00 Regulation of depth of cut

- 2255/04 . Depth indicators
- 2255/08 . Limitation of depth of cut
- 2255/12 . Depth stops

2260/00 Details of constructional elements

- 2260/04 . Adjustable elements
- 2260/08 . Bearings
- 2260/12 . Cams
- 2260/28 . Differential screw threads
- 2260/40 . Harmonic gearboxes, i.e. reduction gearing including a wave generator, a flex spline or a circular spline
- 2260/48 . Indication scales
- 2260/52 . Keys, e.g. spanners or Allen keys, especially for assembling or disassembling tooling
- 2260/56 . Lasers ([improving machinability with laser whilst milling B23P 25/003](#))
- 2260/68 . Rings
- 2260/72 . Seals
- 2260/76 . Sensors
- 2260/80 . Serrations
- 2260/84 . Springs
- 2260/88 . Steadies

2265/00 Details of general geometric configurations

- 2265/08 . Conical
- 2265/12 . Eccentric
- 2265/16 . Elliptical
- 2265/32 . Polygonal
- 2265/36 . Spherical
- 2265/40 . Spiral

2270/00 Details of milling machines, milling processes or milling tools not otherwise provided for

- 2270/02 . Use of a particular power source
- 2270/022 . . Electricity
- 2270/025 . . Hydraulics
- 2270/027 . . Pneumatics
- 2270/04 . Use of centrifugal force ([compensation of effect of centrifugal force B23C 2250/08](#))
- 2270/06 . Use of elastic or plastic deformation ([B23C 2210/161 takes precedence](#))
- 2270/08 . Clamping mechanisms or provision for clamping ([B23C 2210/16 takes precedence](#))
- 2270/10 . Use of ultrasound
- 2270/12 . Centering of two elements relative to one another
- 2270/14 . Constructions comprising exactly two similar components

- 2270/16 . Constructions comprising three or more similar components

- 2270/18 . Milling internal areas of components
- 2270/20 . Milling external areas of components