

# CPC COOPERATIVE PATENT CLASSIFICATION

## B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

### SHAPING

**B23 MACHINE TOOLS; METAL-WORKING NOT OTHERWISE PROVIDED FOR**  
(punching, perforating, making articles by processing sheet metal, tubes, or profiles [B21D](#); wire-working [B21F](#); making pins, needles, or nails [B21G](#); making chains [B21L](#); grinding [B24](#))  
(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.

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

- 3/35 . . Milling grooves in keys
- 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}
- 5/006 . {Details of the milling cutter body}
- 5/02 . characterised by the shape of the cutter
- 5/04 . . Plain cutters, i.e. having essentially a cylindrical or tapered cutting surface of substantial length ([B23C 5/10 takes precedence](#))
- 5/06 . . Face-milling cutters, i.e. having only or primarily a substantially flat cutting surface
- 5/08 . . Disc-type cutters
- 5/10 . . Shank-type cutters, i.e. with an integral shaft
- 5/1009 . . . {Ball nose end mills}
- 5/1018 . . . . {with permanently fixed cutting inserts}
- 5/1027 . . . . {with one or more removable cutting inserts}
- 5/1036 . . . . . {having a single cutting insert, the cutting edges of which subtend 180 degrees}
- 5/1045 . . . . . {having a cutting insert, the cutting edge of which subtends substantially 90 degrees}
- 5/1054 . . . {T slot cutters}
- 5/1063 . . . . {with permanently fixed cutting inserts}
- 5/1072 . . . . {with removable cutting inserts}
- 5/1081 . . . {with permanently fixed cutting inserts ([B23C 5/1054 and B23C 5/1081 take precedence](#))}
- 5/109 . . . {with removable cutting inserts}
- 5/12 . . Cutters specially designed for producing particular profiles ([B23C 5/10 takes precedence](#))
- 5/14 . . . essentially comprising curves ([B23C 5/1009 takes precedence](#))}
- 5/16 . characterised by physical features other than shape
- 5/165 . . {with chipbreaking or chipdividing equipment (for turning machines [B23B 25/02](#); turning tools [B23B 27/00](#); drilling machines [B23B 47/34](#))}
- 5/18 . . with permanently-fixed cutter-bits or teeth
- 5/20 . . with removable cutter bits or teeth {or cutting inserts}
- 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](#))}
- 5/205 . . . . {having chip-breakers}
- 5/207 . . . . {having a special shape}
- 5/22 . . . Securing arrangements for bits or teeth {or cutting inserts}
- 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}
- 5/2208 . . . . . {for plate-like cutting inserts ([B23C 5/2226](#), [B23C 5/223](#), [B23C 5/2234 take precedence](#))}
- 5/2213 . . . . . {Special by shaped cutting inserts}
- 5/2217 . . . . . {having chip-breakers}
- 5/2221 . . . . . {having a special shape}
- 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}
- 5/2243 . . . . . {for plate-like cutting inserts ([B23C 5/2252](#), [B23C 5/2256](#), [B23C 5/226 take precedence](#))}
- 5/2247 . . . . . {having a special shape}
- 5/2252 . . . . . {for plate-like cutting inserts fitted on an intermediate carrier}
- 5/2256 . . . . . {for plate-like cutting inserts fitted on a shank, fixed in the cutter body}
- 5/226 . . . . . {for plate-like cutting inserts fitted on a ring or ring segment}
- 5/2265 . . . . . {by means of a wedge}
- 5/2269 . . . . . {for plate-like cutting inserts ([B23C 5/2278](#), [B23C 5/2286](#), [B23C 5/2291 take precedence](#))}
- 5/2273 . . . . . {having a special shape}
- 5/2278 . . . . . {for plate-like cutting inserts fitted on an intermediate carrier}
- 5/2282 . . . . . {having a special shape}
- 5/2286 . . . . . {for plate-like cutting inserts fitted on a shank, fixed in the cutter body}
- 5/2291 . . . . . {for plate-like cutting inserts fitted on a ring or ring segment}
- 5/2295 . . . . . {the cutting elements being clamped simultaneously}
- 5/24 . . . . . adjustable
- 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}
- 5/2406 . . . . . {for plate-like cutting inserts ([B23C 5/241](#), [B23C 5/2413](#), [B23C 5/2417 take precedence](#))}
- 5/241 . . . . . {for plate-like cutting inserts fitted on an intermediate carrier}
- 5/2413 . . . . . {for plate-like cutting inserts fitted on a shank, fixed in the cutter body}
- 5/2417 . . . . . {for plate-like cutting inserts fitted on a ring or ring segment}
- 5/242 . . . . . {with cutting inserts clamped by a clamping member acting almost perpendicularly on the cutting face}
- 5/2424 . . . . . {for plate-like cutting inserts ([B23C 5/2427](#), [B23C 5/2431](#), [B23C 5/2434 take precedence](#))}
- 5/2427 . . . . . {for plate-like cutting inserts fitted on an intermediate carrier}
- 5/2431 . . . . . {for plate-like cutting inserts fitted on a shank, fixed in the cutter body}
- 5/2434 . . . . . {for plate-like cutting inserts fitted on a ring or ring segment}
- 5/2437 . . . . . {clamping by means of a wedge}
- 5/2441 . . . . . {for plate-like cutting inserts ([B23C 5/2444](#), [B23C 5/2448](#), [B23C 5/2451 take precedence](#))}
- 5/2444 . . . . . {for plate-like cutting inserts fitted on an intermediate carrier}

5/2448	. . . . .	{for plate-like cutting inserts fitted on a shank, fixed in the cutter body}	2200/083	. .	curved
5/2451	. . . . .	{for plate-like cutting inserts fitted on a ring or ring segment}	2200/085	. .	discontinuous
5/2455	. . . . .	{The adjusting means being serrated teeth on the cutter and the cutting insert}	2200/086	. .	with one or more grooves
5/2458	. . . . .	{the cutting elements being clamped or adjusted simultaneously}	2200/087	. . .	for chip-breaking (with chip-breaking grooves in general <a href="#">B23C 2200/326</a> )
5/2462	. . . . .	{the adjusting means being oblique surfaces}	2200/088	. .	spherical
5/2465	. . . . .	{the adjusting means being notches}	2200/12	. .	Side or flank surfaces
5/2468	. . . . .	{the adjusting means being serrations}	2200/121	. .	with projections
5/2472	. . . . .	{the adjusting means being screws}	2200/123	. .	curved
5/2475	. . . . .	{the adjusting means being distance elements, e.g. shims or washers}	2200/125	. .	discontinuous
5/2479	. . . . .	{the adjusting means being eccentrics}	2200/126	. . .	stepped
5/2482	. . . . .	{the adjusting means being hydraulic cylinders}	2200/128	. .	with one or more grooves
5/2486	. . . . .	{where the adjustment is made by balancing the toolholders}	2200/16	. .	Supporting or bottom surfaces
5/2489	. . . . .	{where the adjustment is made by changing the inclination of the inserts}	2200/161	. .	with projections
5/2493	. . . . .	{where the adjustment is made by deforming the seating surfaces}	2200/162	. .	curved
5/2496	. . . . .	{where the adjusting means are gears and racks}	2200/164	. .	discontinuous
5/26	. .	Securing milling cutters to the driving spindle	2200/165	. .	with one or more grooves
5/265	. .	{by fluid pressure means}	2200/167	. .	star form
5/28	. .	Features relating to lubricating or cooling	2200/168	. .	with features related to indexing (with lines to permit indexing of round inserts <a href="#">B23C 2200/363</a> )
<b>7/00</b>		<b>Milling devices able to be attached to a machine tool, whether or not replacing an operative portion of the machine tool</b>	2200/20	. .	Top or side views of the cutting edge
7/02	. .	to lathes	2200/201	. .	Details of the nose radius and immediately surrounding areas
7/04	. .	to planing or slotting machines	2200/203	. .	Curved cutting edges
<b>9/00</b>		<b>Details or accessories so far as specially adapted to milling machines or cutter (drives, control devices, or accessories, in general <a href="#">B23Q</a>)</b>	2200/205	. .	Discontinuous cutting edges
9/005	. .	{milling heads}	2200/206	. .	Cutting edges having a wave-form
<b>2200/00</b>		<b>Details of milling cutting inserts</b>	2200/208	. .	Wiper, i.e. an auxiliary cutting edge to improve surface finish
2200/04	. .	Overall shape	2200/24	. .	Cross section of the cutting edge
2200/0405	. . .	Hexagonal	2200/243	. .	bevelled or chamfered
2200/0411	. . .	irregular	2200/246	. .	rounded
2200/0416	. . .	Irregular	2200/28	. .	Angles
2200/0422	. . .	Octagonal	2200/283	. .	Negative cutting angles
2200/0427	. . .	rounded	2200/286	. .	Positive cutting angles
2200/0433	. . .	Parallelogram	2200/32	. .	Chip breaking or chip evacuation
2200/0438	. . .	rounded	2200/323	. .	by chip-breaking projections (with projection on top surface <a href="#">B23C 2200/081</a> )
2200/0444	. . .	Pentagonal	2200/326	. .	by chip breaking grooves (with grooves on top surface for chip-breaking <a href="#">B23C 2200/087</a> )
2200/045	. . .	Round	2200/36	. .	Other features of the milling insert not covered by <a href="#">B23C 2200/04</a> - <a href="#">B23C 2200/32</a>
2200/0455	. . .	Square	2200/361	. . .	Fixation holes
2200/0461	. . .	rounded	2200/362	. . .	Having two fixation holes
2200/0466	. . .	Star form	2200/363	. .	Lines to permit indexing of round insert (bottom surface with features relating to indexing <a href="#">B23C 2200/168</a> )
2200/0472	. . .	Trapezium	2200/365	. .	Lands, i.e. the outer peripheral section of rake faces
2200/0477	. . .	Triangular	2200/366	. . .	Variable
2200/0483	. . .	rounded	2200/367	. .	Mounted tangentially, i.e. where the rake face is not the face with largest area
2200/0488	. . .	Heptagonal	2200/368	. .	Roughened surfaces
2200/0494	. . .	Rectangular	<b>2210/00</b>		<b>Details of milling cutters</b>
2200/08	. .	Rake or top surfaces	2210/02	. .	Connections between the shanks and detachable cutting heads
2200/081	. .	with projections (chip breaking projections in general <a href="#">B23C 2200/323</a> )	2210/03	. .	Cutting heads comprised of different material than the shank irrespective of whether the head is detachable from the shank
2200/082	. .	with an elevated clamping surface	2210/04	. .	Angles
			2210/0407	. .	Cutting angles
			2210/0414	. . .	different
			2210/0421	. . .	negative

- 2210/0428 . . . . axial rake angle
- 2210/0435 . . . . radial rake angle
- 2210/0442 . . . positive
- 2210/045 . . . . axial rake angle
- 2210/0457 . . . . radial rake angle
- 2210/0464 . . . neutral
- 2210/0471 . . . . axial rake angle
- 2210/0478 . . . . radial rake angle
- 2210/0485 . . Helix angles
- 2210/0492 . . . different
- 2210/08 . Side or top views of the cutting edge
- 2210/082 . . Details of the corner region between axial and radial cutting edges
- 2210/084 . . Curved cutting edges
- 2210/086 . . Discontinuous or interrupted cutting edges
- 2210/088 . . Cutting edges with a wave form
- 2210/12 . Cross section of the cutting edge
- 2210/123 . . Bevelled cutting edges
- 2210/126 . . Rounded cutting edges
- 2210/16 . Fixation of inserts or cutting bits in the tool ([details of connections B23C 2240/00](#))
- 2210/161 . . Elastically deformable clamping members
- 2210/163 . . Indexing
- 2210/165 . . Fixation bolts
- 2210/166 . . Shims
- 2210/168 . . Seats for cutting inserts, supports for replaceable cutting bits
- 2210/20 . Number of cutting edges
- 2210/201 . . one
- 2210/202 . . three
- 2210/203 . . four
- 2210/204 . . five
- 2210/205 . . six
- 2210/206 . . seven
- 2210/207 . . eight
- 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](#))
- 2210/241 . . Cross sections of the whole milling cutter
- 2210/242 . . Form tools, i.e. cutting edges profiles to generate a particular form
- 2210/243 . . Cutting parts at both ends
- 2210/244 . . Milling cutters comprised of disc-shaped modules or multiple disc-like cutters
- 2210/245 . . Milling cutters comprising a disc having a wave form
- 2210/246 . . Milling cutters comprising a hole or hollow in the end face or between the cutting edges
- 2210/247 . . Stepped milling cutters
- 2210/248 . . . with enlarged cutting heads
- 2210/28 . Arrangement of teeth
- 2210/282 . . Unequal angles between the cutting edges, i.e. cutting edges unequally spaced in the circumferential direction
- 2210/285 . . Cutting edges arranged at different diameters
- 2210/287 . . Cutting edges arranged at different axial positions or having different lengths in the axial direction
- 2210/32 . Details of teeth
- 2210/321 . . Lands, i.e. the area on the rake face in the immediate vicinity of the cutting edge
- 2210/323 . . Separate teeth, i.e. discrete profiled teeth similar to those of a hob
- 2210/325 . . Different teeth, i.e. one tooth having a different configuration to a tooth on the opposite side of the flute
- 2210/326 . . File like cutting teeth, e.g. the teeth of cutting burrs
- 2210/328 . . Treated cutting edges
- 2210/40 . Flutes, i.e. chip conveying grooves
- 2210/402 . . of variable depth
- 2210/405 . . . having decreasing depth in the direction of the shank from the tip of the tool
- 2210/407 . . . having increasing depth in the direction of the shank from the tip of the tool
- 2210/44 . Margins, i.e. the part of the peripheral surface immediately adjacent the cutting edge
- 2210/445 . . variable
- 2210/48 . Chip breakers
- 2210/483 . . Chip breaking projections
- 2210/486 . . Chip breaking grooves or depressions
- 2210/50 . Cutting inserts
- 2210/503 . . mounted internally on the cutter
- 2210/506 . . mounted so as to be able to rotate freely
- 2210/52 . Bushings
- 2210/54 . Configuration of the cutting part
- 2210/56 . Supporting or guiding sections located on the periphery of the tool
- 2210/58 . Brushes
- 2210/60 . Axis of the cutter inclined with respect to the axis of rotation
- 2210/62 . Selectable cutting diameters
- 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
- 2210/66 . Markings, i.e. symbols or indicating marks
- 2210/68 . Reground to nominal diameter by removal of material from both the front of the insert and the back of insert carrier
- 2210/70 . Pilots
- 2210/72 . Rotatable in both directions
- 2210/74 . Slits
- 2215/00 Details of workpieces**
- 2215/04 . Aircraft components
- 2215/045 . . Propellers
- 2215/08 . Automotive parts ([B23C 2215/16, B23C 2215/20 and B23C 2215/24 take precedence](#))
- 2215/085 . . Wheels
- 2215/12 . Propellers for boats
- 2215/16 . Camshafts
- 2215/20 . Crankshafts
- 2215/24 . Components of internal combustion engines
- 2215/242 . . Combustion chambers
- 2215/245 . . Connecting rods
- 2215/247 . . Components of diesel engines
- 2215/28 . Nipples
- 2215/32 . Railway tracks
- 2215/36 . Railway wheels
- 2215/40 . Spectacles
- 2215/44 . Turbine blades
- 2215/48 . Kaplan turbines

2215/52	• Axial turbine wheels	2224/56	• Vanadium aluminium nitride (VAlN)
2215/56	• Radial turbine wheels	<b>2226/00</b>	<b>Materials of tools or workpieces not comprising a metal</b>
2215/60	• Valve guides in combination with the neighbouring valve seat	2226/12	• Boron nitride
2215/64	• Well pipe windows, i.e. windows in tubings or casings for wells	2226/125	• . cubic [CBN]
<b>2220/00</b>	<b>Details of milling processes</b>	2226/18	• Ceramic
2220/04	• Milling with the axis of the cutter inclined to the surface being machined	2226/27	• Composites, e.g. fibre reinforced composites
2220/08	• Milling with the axis of the tool perpendicular to the workpiece axis	2226/31	• Diamond
2220/12	• Cutting off, i.e. producing multiple discrete components from a single piece of material	2226/315	• . polycrystalline [PCD]
2220/16	• Chamferring	2226/33	• Elastomers, e.g. rubber
2220/20	• Deburring	2226/37	• Fibreglass
2220/24	• Production of elliptical holes	2226/41	• Gypsum
2220/28	• Finishing ( <a href="#">roughing and finishing B23C 2220/605</a> )	2226/42	• Gem, i.e. precious stone
2220/32	• Five-axis	2226/45	• Glass ( <a href="#">milling glass B28D 1/18</a> )
2220/36	• Production of grooves	2226/54	• Paper
2220/363	• . Spiral grooves	2226/61	• Plastics not otherwise provided for, e.g. nylon
2220/366	• . Turbine blade grooves	2226/62	• Polystyrene foam
2220/40	• Using guiding means	2226/72	• Silicon carbide
2220/44	• High speed milling	2226/73	• Silicon nitride
2220/48	• Methods of milling not otherwise provided for	2226/75	• Stone, rock or concrete ( <a href="#">milling stone or like materials B28D 1/18</a> )
2220/52	• Orbital drilling, i.e. use of a milling cutter moved in a spiral path to produce a hole	<b>2228/00</b>	<b>Properties of materials of tools or workpieces, materials of tools or workpieces applied in a specific manner</b>
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
<b>2222/00</b>	<b>Materials of tools or workpieces composed of metals, alloys or metal matrices</b>	2228/24	• Hard, i.e. after being hardened
2222/04	• Aluminium	2228/25	• Honeycomb
2222/06	• Babbitt metal	2228/26	• Hot
2222/12	• Brass	2228/49	• Sintered
2222/14	• Cast iron	2228/50	• Soft metal
2222/16	• Cermet	<b>2230/00</b>	<b>Details of chip evacuation (<a href="#">chip evacuation in cutting inserts B23C 2200/32</a>)</b>
2222/28	• Details of hard metal, i.e. cemented carbide	2230/04	• Transport of chips
2222/32	• Details of high speed steel ( <a href="#">steel B23C 2222/84</a> )	2230/045	• . to the middle of the cutter or in the middle of a hollow cutter
2222/52	• Magnesium	2230/08	• Using suction
2222/61	• Metal matrices with metallic or non-metallic particles or fibres	<b>2235/00</b>	<b>Details of milling keys</b>
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 ( <a href="#">details of high speed steel B23C 2222/32</a> )	2235/16	• Dial indicators
2222/88	• Titanium	2235/21	• Calibration by electronic detection of position of probes and cutting wheels
2222/98	• Zinc	2235/24	• Electronic sensors
<b>2224/00</b>	<b>Materials of tools or workpieces composed of a compound including a metal</b>	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)	<b>2240/00</b>	<b>Details of connections of tools or workpieces (<a href="#">fixation of the cutting insert or bit in the tool B23C 2210/16</a>)</b>
2224/28	• Titanium carbide	2240/04	• Bayonet connections
2224/32	• Titanium carbide nitride (TiCN)		
2224/36	• Titanium nitride		



- 2240/08 . Brazed connections
- 2240/12 . Connections using captive nuts
- 2240/16 . Welded connections
- 2240/21 . Glued connections
- 2240/24 . Connections using screws
- 2240/245 . . hollow screws, e.g. for the transmission of coolant
- 2240/32 . Connections using screw threads
- 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