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)

1/00 **Milling machines not designed for particular work or special operations**

1/002 . {Gantry-type milling machines}
1/005 . {with a tool moving in a closed path around the workpiece}
1/007 . {movable milling machines, e.g. on rails}
1/02 . with one horizontal working-spindle
1/025 . . with working-spindle movable in a fixed position
1/027 . . with working-spindle movable in a vertical direction
1/04 . with a plurality of horizontal working-spindles
1/045 . . {Opposed - spindle machines}
1/06 . with one vertical working-spindle
1/08 . with a plurality of vertical working-spindles
1/10 . with both horizontal and vertical working-spindles
1/12 . with spindle adjustable to different angles, e.g. either horizontal or vertical
1/14 . with rotary work-carrying table (work tables for machine tools in general B23Q 1/00)
1/16 . specially designed for control by copying devices {(not used; see B23Q 35/00)}
1/18 . . for milling while revolving the work
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

3/00 **Milling particular work; Special milling operations; Machines therefor** (milling gear-teeth B23F, {heat assisted machining B23P 25/00})

3/002 . {Milling elongated workpieces}
3/005 . . {Rails}
3/007 . {Milling end surfaces of nuts or tubes}
3/02 . Milling surfaces of revolution (B23C 3/06, B23C 3/08 take precedence)
3/023 . . {Milling spherical surfaces}
3/026 . . . {Milling balls}
3/04 . . while revolving the work
3/05 . . Finishing valves or valve seats {(machines for grinding seat surfaces, e.g. in valve housings, B24B 15/00)}
3/051 . . . {Reconditioning of valve seats}
3/053 . . . . {having means for guiding the tool carrying spindle}
3/055 . . . . . {for engines}
3/056 . . . . . {for taps or valves}
3/058 . . . {Reconditioning of valves}
3/06 . Milling crankshafts
3/08 . Milling cams, camshafts, or the like
3/10 . Relief milling (lathes or turning devices for relieving **B23B5/42**)
3/12 . Trimming or finishing edges, e.g. deburring welded corners
3/122 . . {of pipes or cylinders}
3/124 . . . {internally}
3/126 . . {Portable devices or machines for chamfering edges}
3/128 . . {Trimming or finishing edges of doors and windows}
3/13 . Surface milling of plates, sheets or strips
3/14 . Scrubbing or peeling ingots or similar workpieces
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
3/24 . Making square or polygonal ends on workpieces, e.g. key studs on tools
3/26 . Making square or polygonal holes in workpieces, e.g. key holes in tools
3/28 . Grooving workpieces (tread-cutting by milling B23G 1/32)
3/30 . . Milling straight grooves, e.g. keyways
3/305 . . . {in which more than one milling tool is used simultaneously, e.g. for sheet material}
3/32 . . Milling helical grooves, e.g. in making twist-drills
3/34 . . Milling grooves of other forms, e.g. circumferential
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}
5/2451 . . . . . {for plate-like cutting inserts fitted on a ring or ring segment}
5/2455 . . . . . {The adjusting means being serrated teeth on the cutter and the cutting insert}
5/2458 . . . . . {the cutting elements being clamped or adjusted simultaneously}

5/2462 . . . . . {the adjusting means being oblique surfaces}
5/2465 . . . . . {the adjusting means being notches}
5/2468 . . . . . {the adjusting means being serrations}
5/2472 . . . . . {the adjusting means being screws}
5/2475 . . . . . {the adjusting means being distance elements, e.g. shims or washers}
5/2479 . . . . . {the adjusting means being eccentrics}
5/2482 . . . . . {the adjusting means being hydraulic cylinders}
5/2486 . . . . . {where the adjustment is made by balancing the toolholders}
5/2489 . . . . . {where the adjustment is made by changing the inclination of the inserts}
5/2493 . . . . . {where the adjustment is made by deforming the seating surfaces}
5/2496 . . . . . {where the adjusting means are gears and racks}
5/26 . Securing milling cutters to the driving spindle
5/265 . . {by fluid pressure means}
5/28 . Features relating to lubricating or cooling

7/00 Milling devices able to be attached to a machine tool, whether or not replacing an operative portion of the machine tool

7/02 . to lathes
7/04 . to planing or slotting machines

9/00 Details or accessories so far as specially adapted to milling machines or cutter (drives, control devices, or accessories, in general B23Q)

9/005 . {milling heads}

2200/00 Details of milling cutting inserts

2200/04 . Overall shape
2200/0405 . . Hexagonal
2200/0411 . . . irregular
2200/0416 . . Irregular
2200/0422 . . Octagonal
2200/0427 . . . rounded
2200/0433 . . Parallelogram
2200/0438 . . . rounded
2200/0444 . . Pentagonal
2200/045 . . Round
2200/0455 . . Square
2200/0461 . . . rounded
2200/0466 . . Star form
2200/0472 . . Trapezium
2200/0477 . . Triangular
2200/0483 . . . rounded
2200/0488 . . Heptagonal
2200/0494 . . Rectangular
2200/08 . Rake or top surfaces
2200/081 . . with projections (chip breaking projections in general B23C 2200/323)
2200/082 . . with an elevated clamping surface
2200/083 . . curved
2200/085 . . discontinuous
2200/086 . . with one or more grooves
2200/087 . . . for chip-breaking (with chip-breaking grooves in general B23C 2200/326)
2200/088 . . spherical
2200/12 . Side or flank surfaces
2200/121 . . with projections
2200/123 . . curved
2200/125 . . discontinuous
2200/126 . . . stepped
2200/128 . . with one or more grooves
2200/16 . Supporting or bottom surfaces
2200/161 . . with projections
2200/162 . . curved
2200/164 . . discontinuous
2200/165 . . with one or more grooves
2200/167 . . star form
2200/168 . . with features related to indexing (with lines to permit indexing of round inserts B23C 2200/363)
2200/20 . Top or side views of the cutting edge
2200/201 . . Details of the nose radius and immediately surrounding areas
2200/203 . . Curved cutting edges
2200/205 . . Discontinuous cutting edges
2200/206 . . Cutting edges having a wave-form
2200/208 . . Wiper, i.e. an auxiliary cutting edge to improve surface finish
2200/24 . Cross section of the cutting edge
2200/243 . . bevelled or chamfered
2200/246 . . rounded
2200/28 . Angles
2200/283 . . Negative cutting angles
2200/286 . . Positive cutting angles
2200/32 . Chip breaking or chip evacuation
2200/323 . . by chip-breaking projections (with projection on top surface B23C 2200/081)
2200/326 . . by chip breaking grooves (with grooves on top surface for chip-breaking B23C 2200/087)
2200/36 . Other features of the milling insert not covered by B23C 2200/04 - B23C 2200/32
2200/361 . . Fixation holes
2200/362 . . . Having two fixation holes
2200/363 . . Lines to permit indexing of round insert (bottom surface with features relating to indexing B23C 2200/168)
2200/365 . . Lands, i.e. the outer peripheral section of rake faces
2200/366 . . . Variable
2200/367 . . Mounted tangentially, i.e. where the rake face is not the face with largest area
2200/368 . . Roughened surfaces

2210/00 Details of milling cutters

2210/02 . Connections between the shanks and detachable cutting heads
2210/03 . Cutting heads comprised of different material than the shank irrespective of whether the head is detachable from the shank
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 replacable 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 suface immediately adacent 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
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

2220/08 . Milling with the axis of the tool perpendicular to the workpiece axis
2220/12 . Cutting off, i.e. producing multiple discrete components from a single piece of material
2220/16 . Chamferring
2220/20 . Deburring
2220/24 . Production of elliptical holes
2220/28 . Finishing (roughing and finishing B23C 2220/605)
2220/32 . Five-axis
2220/36 . Production of grooves
2220/363 . . Spiral grooves
2220/366 . . Turbine blade grooves
2220/40 . Using guiding means
2220/44 . High speed milling
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
2220/56 . Plunge milling
2220/60 . Roughing
2220/605 . . Roughing and finishing
2220/64 . Using an endmill, i.e. a shaft milling cutter, to generate profile of a crankshaft or camshaft
2220/68 . Whirling

2222/00 Materials of tools or workpieces composed of metals, alloys or metal matrices
2222/04 . Aluminium
2222/06 . Babbitt metal
2222/12 . Brass
2222/14 . Cast iron
2222/16 . Cermet
2222/28 . Details of hard metal, i.e. cemented carbide
2222/32 . Details of high speed steel (steel B23C 2222/84)
2222/52 . Magnesium
2222/61 . Metal matrices with metallic or non-metallic particles or fibres
2222/64 . Nickel
2222/76 . Silver
2222/78 . Sodium
2222/84 . Steel (details of high speed steel B23C 2222/32)
2222/88 . Titanium
2222/98 . Zinc

2224/00 Materials of tools or workpieces composed of a compound including a metal
2224/04 . Aluminium oxide
2224/13 . Chromium nitride
2224/14 . Chromium aluminium nitride (CrAlN)
2224/20 . Tantalum carbide
2224/22 . Titanium aluminium carbide nitride (TiAlCN)
2224/24 . Titanium aluminium nitride (TiAlN)
2224/28 . Titanium carbide
2224/32 . Titanium carbide nitride (TiCN)
2224/36 . Titanium nitride
2224/56 . Vanadium aluminium nitride (VAlN)

2226/00 Materials of tools or workpieces not comprising a metal
2226/12 . Boron nitride
2226/125 . . cubic [CBN]
2226/18 . Ceramic
2226/27 . Composites, e.g. fibre reinforced composites
2226/31 . Diamond
2226/315 . . polycrystalline [PCD]
2226/33 . Elastomers, e.g. rubber
2226/37 . Fibreglass
2226/41 . Gypsum
2226/42 . Gem, i.e. precious stone
2226/45 . Glass (milling glass B28D 1/18)
2226/54 . Paper
2226/61 . Plastics not otherwise provided for, e.g. nylon
2226/62 . Polystyrene foam
2226/72 . Silicon carbide
2226/73 . Silicon nitride
2226/75 . Stone, rock or concrete (milling stone or like materials B28D 1/18)

2228/00 Properties of materials of tools or workpieces, materials of tools or workpieces applied in a specific manner
2228/04 . applied by chemical vapour deposition [CVD]
2228/08 . applied by physical vapour deposition [PVD]
2228/10 . Coating
2228/12 . Cast, i.e. in the form of a casting
2228/14 . Flexible
2228/24 . Hard, i.e. after being hardened
2228/25 . Honeycomb
2228/26 . Hot
2228/49 . Sintered
2228/50 . Soft metal

2230/00 Details of chip evacuation (chip evacuation in cutting inserts B23C 2200/32)
2230/04 . Transport of chips
2230/045 . . to the middle of the cutter or in the middle of a hollow cutter
2230/08 . Using suction

2235/00 Details of milling keys
2235/04 . Keys with blind holes
2235/08 . Brushes
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
2235/16 . Dial indicators
2235/21 . Calibration by electronic detection of position of probes and cutting wheels
2235/24 . Electronic sensors
2235/28 . Key blanks
2235/32 . Measurement systems
2235/36 . Ring keys
2235/41 . Scanning systems
2235/44 . Templates for the simulation of keys
2235/48 . Tracers, probes or styli

2240/00 Details of connections of tools or workpieces (fixation of the cutting insert or bit in the tool B23C 2210/16)
2240/04 . Bayonet connections
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 centrifigal 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