CPC COOPERATIVE PATENT CLASSIFICATION

MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING F (NOTE omitted)

ENGINEERING IN GENERAL

ENGINEERING ELEMENTS AND UNITS; GENERAL MEASURES FOR F16 PRODUCING AND MAINTAINING EFFECTIVE FUNCTIONING OF MACHINES OR **INSTALLATIONS: THERMAL INSULATION IN GENERAL**

F16C SHAFTS; FLEXIBLE SHAFTS; ELEMENTS OR CRANKSHAFT MECHANISMS; **ROTARY BODIES OTHER THAN GEARING ELEMENTS; BEARINGS**

NOTES

- 1. In this subclass the following expression is used with the meaning indicated:
 - "rotary bodies other than gearing elements" covers any element which rotates so far as its features are affected only by the fact that it rotates.
- 2. Attention is drawn to the following places:

		01
I	<u>A01B 71/04</u>	Bearings for agricultural machines
E	<u>321B 31/07</u>	Adaptation of roll bearings for metal-rolling mills
E	<u>361C 17/10</u>	Connecting-rods, bearings for driving wheels of railway locomotives
E	<u>361F 15/00</u>	Axle-boxes for railway vehicles
E	<u>362K 21/06</u>	Bearings for steering heads
E	<u>E06B 9/174, E06B 9/50</u>	Bearings specially adapted for roller shutters or for roller blinds
E	E21B 10/22	Bearings for drill bits
F	<u>F01C 21/02</u>	Arrangement of bearings in rotary-piston machines or engines
F	F01D 25/16	Arrangement of bearings in non-positive displacement machines or engines
E	<u>F02C 7/06</u>	Arrangement of bearings in gas-turbine plants
<u>(</u>	<u> 501C 19/16</u>	Bearings for gyroscopes
<u>(</u>	<u>G01D 11/02</u>	Bearings or suspensions for moving parts of measuring instruments
<u>(</u>	<u>G01G 21/02</u>	Arrangements of bearings in weighing apparatus
<u>(</u>	<u>G01R 1/10</u>	Arrangements of bearings in instruments for measuring electric variables
<u>(</u>	<u>G01R 11/12</u>	Arrangements of bearings for apparatus for measuring time integral of electric power or
		current
C	<u>G02C 5/22</u>	Hinges for spectacles
0	G04B 31/00	Bearings for clockwork
ŀ	<u>H02N 15/00</u>	Magnetic levitation devices.

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.

1/00	Flexible shafts (flexible shafts in dental machines for boring or cutting <u>A61C 1/18</u>); Mechanical means for transmitting movement in a flexible sheathing	1/106 1/107	 {Plurality of transmitting means, e.g. two or more parallel "Bowden cables"} {Sealing details}
1/02	. for conveying rotary movements	1/108	• • {Reducing or controlling of vibrations, e.g. by
1/04	Articulated shafts		resilient damping of noise}
1/06	• with guiding sheathing, tube or box (<u>F16C 1/04</u> takes precedence; guiding sheathings <u>F16C 1/26</u>)	1/12	• Arrangements for transmitting movement to or from the flexible member
1/08	• End connections	1/14	Construction of the end-piece of the flexible
1/10	 Means for transmitting linear movement in a flexible sheathing, e.g. "Bowden-mechanisms" 		member; Attachment thereof to the flexible member
	(guiding-sheathings F16C 1/26)	1/145	{Attachment of the end-piece to the flexible
1/101	• • {Intermediate connectors for joining portions of		member}
	split flexible shafts and/or sheathings}	1/16	in which the end-piece is guided rectilinearly
1/102	• {Arrangements to mount end fittings of the sheathings to support walls or brackets}	1/18	• • • in which the end portion of the flexible member is laid along a curved surface of a pivoted
1/103	• • • {to a hole in the wall or bracket}		member
1/105	• • • {to a slot in the bracket}		

1/20	• Construction of flexible members moved to and
	fro in the sheathing
1/205	• • • {Details of the outer surface of the flexible
1/22	member, e.g. coatings}
1/22	• Adjusting; Compensating length
1/223	• • • {by adjusting the effective length of the
1/22.4	flexible member}
1/226	• • {by adjusting the effective length of the
1/24	sheathing}
1/24 1/26	Lubrication; Lubricating equipmentConstruction of guiding-sheathings or guiding-tubes
1/262	
1/202	• • {End fittings; Attachment thereof to the sheathing or tube}
1/265	• • • { with a swivel tube connected to the end-fitting
	of a sheathing, e.g. with a spherical joint}
1/267	• • {Details of the inner surface of the sheathing or
	tube, e.g. coatings}
1/28	• • with built in bearings {, e.g. sheathing with
	rolling elements between the sheathing and the
	core element}
3/00	Shafts (flexible shafts F16C 1/00; marine propeller
	shafts, paddle wheel shafts <u>B63H 23/34</u>); Axles;
	Cranks; Eccentrics
3/02	• Shafts; Axles
3/023	• • {made of several parts, e.g. by welding}
3/026	• • {Shafts made of fibre reinforced resin}
3/03	• telescopic (axially displaceable couplings
	<u>F16D 3/06</u>)
3/035	• • • with built-in bearings
3/04	Crankshafts, eccentric-shafts; Cranks, eccentrics
3/06	• • Crankshafts
3/08	• • made in one piece (features relating to lubrication <u>F16C 3/14</u> , to cooling <u>F16C 3/16</u>)
3/10	assembled of several parts e.g. by welding (by
3/10	• • assembled of several parts, e.g. by welding {by crimping}
	crimping}
3/12	crimping} releasably connected
3/12 3/14	crimping}releasably connectedFeatures relating to lubrication
3/12 3/14 3/16	 crimping } releasably connected Features relating to lubrication Features relating to cooling
3/12 3/14 3/16 3/18	 crimping} releasably connected Features relating to lubrication Features relating to cooling Eccentric-shafts
3/12 3/14 3/16 3/18 3/20	 crimping} . eleasably connected Features relating to lubrication Features relating to cooling Eccentric-shafts Shape of crankshafts or eccentric-shafts having regard to balancing
3/12 3/14 3/16 3/18	 crimping} releasably connected Features relating to lubrication Features relating to cooling Eccentric-shafts Shape of crankshafts or eccentric-shafts having regard to balancing Cranks; Eccentrics (constructional features of
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3/12 3/14 3/16 3/18 3/20 3/22 3/24 3/26	 crimping} . releasably connected . Features relating to lubrication . Features relating to cooling Eccentric-shafts Shape of crankshafts or eccentric-shafts having regard to balancing Cranks; Eccentrics (constructional features of crank-pins F16C 11/02) . with return cranks, i.e. a second crank carried by the crank-pin Elastic crank-webs; Resiliently-mounted crank-pins
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3/12 3/14 3/16 3/18 3/20 3/22 3/24 3/26 3/28 3/30 5/00 7/00 7/02	 crimping} . ereleasably connected Features relating to lubrication Features relating to cooling Eccentric-shafts Shape of crankshafts or eccentric-shafts having regard to balancing Cranks; Eccentrics (constructional features of crank-pins F16C 11/02) with return cranks, i.e. a second crank carried by the crank-pin Elastic crank-webs; Resiliently-mounted crank-pins Adjustable cranks or eccentrics with arrangements for overcoming dead-centres Crossheads; Constructions of connecting-rod heads or piston-rod connections rigid with crossheads (piston-rods, i.e. rods rigidly connected to the piston, F16J 7/00) Connecting-rods or like links pivoted at both ends (coupling-rods for locomotive driving-wheels B61C 17/10); Construction of connecting-rod heads (heads rigid with crossheads F16C 5/00) Constructions of connecting-rods with constant length

7/06	Adjustable connecting-rods
7/08	• made from sheet metal
9/00	Bearings for crankshafts or connecting-rods; Attachment of connecting-rods (lubrication of
	connecting-rods in connection with crankshafts
	<u>F16C 3/14;</u> connections to crossheads <u>F16C 5/00;</u> to pistons <u>F16J 1/14</u>)
9/02	Crankshaft bearings
9/03	• • Arrangements for adjusting play
9/04	Connecting-rod bearings; Attachments thereof
9/045	• • {the bearing cap of the connecting rod being split by fracturing}
9/06	• Arrangements for adjusting play in bearings, operating either automatically or not
11/00	Pivots; Pivotal connections (arrangements of steering linkage connections <u>B62D 7/16</u>)
11/02	• Trunnions; Crank-pins (fastening crank-pins to
	webs, crank-pins integral with cranks <u>F16C 3/06</u> , F16C 3/22)
11/04	 Pivotal connections (hinges for doors, windows or wings <u>E05D</u>)
11/045	• • {with at least a pair of arms pivoting relatively to
	at least one other arm, all arms being mounted on one pin (crank-pins $F16C 11/02$)
11/06	. Ball-joints; Other joints having more than
	one degree of angular freedom, i.e. universal joints (universal joints in which flexibility is
	produced by means of pivots or sliding or rolling
	connecting parts $F16D 3/16$)
11/0604	• • • {Construction of the male part}
11/0609	• • • • {made from two or more parts}
11/0614	• • • {the female part of the joint being open on two sides}
11/0619	• • • {the female part comprising a blind socket receiving the male part}
11/0623	• • • • {Construction or details of the socket member}
11/0628	•••• {with linings}
11/0633	••••• {the linings being made of plastics}
11/0638	{characterised by geometrical details}
11/0642	{Special features of the plug or cover on the blind end of the socket}
11/0647	•••• {Special features relating to adjustment for wear or play; Wear indicators}
11/0652	• • • • {combined with a damper other than elastic linings}
11/0657	•••• {the socket member being mainly made of plastics}
11/0661	• • • {the two co-operative parts each having both convex and concave interfaces}
11/0666	• • {Sealing means between the socket and the inner member shaft}
11/0671	• • • {allowing operative relative movement
	of joint parts due to flexing of the sealing means}
11/0676	{allowing operational relative movement of
	joint parts due to sliding between parts of the
11/068	sealing means } {Special features relating to lubrication}
11/0685	 {Special features features features to fublication} {Manufacture of ball-joints and parts thereof,
11/0005	e.g. assembly of ball-joints and parts thereof,

11/069	 { with at least one separate part to retain the ball member in the socket; Quick-release systems}
11/0695	• • • {Mounting of ball-joints, e.g. fixing them to a connecting rod}
11/08	• • • with resilient bearings
11/083	•••• {by means of parts of rubber or like materials}
11/086	••••• { with an elastomeric member in the blind end of a socket }
11/10	Arrangements for locking
11/103	• • • {frictionally clamped}
11/106	• • • • {for ball joints}
11/12	• incorporating flexible connections, e.g. leaf springs
13/00	Rolls, drums, discs, or the like (guide rollers in feeding webs <u>B65H 27/00</u> ; calender rolls, bearings therefor <u>D21G 1/02</u> ; rotary drums or rollers for heat-exchange or heat-transfer apparatus <u>F28F 5/02</u>); Bearings or mountings therefor
13/003	• {Bowed or curved rolls (rollers with a bowed axis as tentering devices for tensioning, smoothing or guiding webs <u>B65H 23/0258</u>)}
13/006	• {Guiding rollers, wheels or the like, formed by or on the outer element of a single bearing or bearing unit, e.g. two adjacent bearings, whose ratio of length to diameter is generally less than one}
13/02	• Bearings
13/022	• • {supporting a hollow roll mantle rotating with respect to a yoke or axle}
13/024	• • {adjustable for positioning, e.g. radial movable bearings for controlling the deflection along the length of the roll mantle}
13/026	• • • {by fluid pressure}
13/028	••••• { with a plurality of supports along the length of the roll mantle, e.g. hydraulic jacks }
13/04	• Bearings with only partial enclosure of the member to be borne; Bearings with local support at two or more points
13/06	• • self-adjusting
15/00	Construction of rotary bodies to resist centrifugal force (flywheels, correction weights <u>F16F 15/30</u> , <u>F16F 15/32</u>)
Bearings for	rotary parts
17/00	Sliding-contact bearings for exclusively rotary movement (F16C 32/06 takes precedence; adjustable

	bearings F16C 23/00, F16C 25/00)
17/02	• for radial load only
17/022	• • {with a pair of essentially semicircular bearing sleeves}
17/024	• {with flexible leaves to create hydrodynamic wedge, e.g. radial foil bearings}
17/026	• • {with helical grooves in the bearing surface to generate hydrodynamic pressure, e.g. herringbone grooves}
17/028	• • {with fixed wedges to generate hydrodynamic pressure, e.g. multi-lobe bearings}

17/03	 with tiltably-supported segments, e.g. Michell bearings {(hydrostatic bearings with tiltably supported bearing pads <u>F16C 32/0666</u>; made from a plurality of rods <u>F16C 33/26</u>; with flexible leaves <u>F16C 17/024</u>; hydrodynamic bearings with chambers <u>F16C 33/1075</u>)}
17/035	• • {the segments being integrally formed with, or rigidly fixed to, a support-element}
17/04	• for axial load only
17/042	 {with flexible leaves to create hydrodynamic wedge, e.g. axial foil bearings}
17/045	• {with grooves in the bearing surface to generate hydrodynamic pressure, e.g. spiral groove thrust bearings}
17/047	• { with fixed wedges to generate hydrodynamic pressure}
17/06	 with tiltably-supported segments, e.g. Michell bearings {(with flexible leaves <u>F16C 17/042;</u> hydrostatic <u>F16C 32/0666</u>)}
17/065	• • {the segments being integrally formed with, or rigidly fixed to, a support-element}
17/08	• for supporting the end face of a shaft or other member, e.g. footstep bearings
17/10	• for both radial and axial load
17/102	• { with grooves in the bearing surface to generate hydrodynamic pressure }
17/105	• • {with at least one bearing surface providing angular contact, e.g. conical or spherical bearing surfaces}
17/107	• • { with at least one surface for radial load and at least one surface for axial load }
17/12	• characterised by features not related to the direction of the load
17/14	specially adapted for operating in water
17/18	 with floating brasses or brushing, rotatable at a reduced speed {(<u>F16C 17/03, F16C 17/06</u> take precedence)}
17/20	• with emergency supports or bearings
17/22	• with arrangements compensating for thermal expansion
17/24	• with devices affected by abnormal or undesired positions, e.g. for preventing overheating, for safety
17/243	• • {related to temperature and heat, e.g. for preventing overheating}
17/246	• • {related to wear, e.g. sensors for measuring wear}
17/26	• Systems consisting of a plurality of sliding-contact bearings
19/00	Bearings with rolling contact, for exclusively rotary movement (adjustable bearings <u>F16C 23/00</u> , <u>F16C 25/00</u> {; electrically insulating bearings <u>H02K 5/173</u> })
19/02	• with bearing balls essentially of the same size in one or more circular rows
19/04	• • for radial load mainly
19/06	• • • with a single row or balls
19/08	• • • with two or more rows of balls
19/10	 for axial load mainly
19/10	 for available manny for supporting the end face of a shaft or other member, e.g. footstep bearings
19/14	• for both radial and axial load
19/16	• • with a single row of balls
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• • {with rolling elements in rows not forming a full

one row differing from the diameter of those of

moving parts, e.g. stationary rollers to support a

• • { with the diameter of the rolling elements of

. . {with rolling elements journaled in one of the

circle }

another row}

rotating part}

19/163	•••• { with angular contact }	19/502
19/166	•••• {Four-point-contact ball bearings}	
19/18	• • • with two or more rows of balls	19/505
19/181	• • • • {with angular contact}	
19/182	•••• {in tandem arrangement}	
19/183	• • • • • {with two rows at opposite angles}	19/507
19/184	••••• {in O-arrangement}	
19/185	•••••• {with two raceways provided integrally on a part other than a race ring, e.g. a shaft or housing}	19/52
19/186	••••••••••••••••••••••••••••••••••••••	19/522
19/187	•••••• {with all four raceways integrated on	19/525
19/10/	parts other than race rings, e.g. fourth	19/527
	generation hubs}	19/54
19/188	•••• { with at least one row for radial load in	
	combination with at least one row for axial load}	19/541
19/20	• • with loose spacing bodies, e.g. balls, between the	
	bearing balls	19/542
19/22	• with bearing rollers essentially of the same size in	10/542
	one or more circular rows, e.g. needle bearings	19/543
19/225	• • {Details of the ribs supporting the end of the	19/545
	rollers}	
19/24	• for radial load mainly	19/546
19/26	• • • with a single row of rollers	1)/540
19/28	• • • with two or more rows of rollers	19/547
19/30	• • for axial load mainly	19/548
19/305	• • • {consisting of rollers held in a cage}	19/55
19/32	for supporting the end face of a shaft or other member, e.g. footstep bearings	17/55
19/34	• for both radial and axial load	10/54
19/36	• • • with a single row of rollers	19/56
19/361	•••• {with cylindrical rollers}	
19/362	•••• {the rollers being crossed within the single row}	21/00
19/364	•••• { with tapered rollers, i.e. rollers having essentially the shape of a truncated cone }	21/005
19/38	with two or more rows of rollers	
19/381	 . • {with at least one row for radial load in combination with at least one row for axial load} 	
19/383	•••• {with tapered rollers, i.e. rollers having	23/00
	essentially the shape of a truncated cone}	
19/385	••••• { with two rows, i.e. double-row tapered	
10/201	roller bearings}	23/02
19/386	{in O-arrangement}	23/04
19/388	•••• {with four rows, i.e. four row tapered	23/041
10/40	roller bearings}	23/043
19/40	• with loose spacing bodies between the rollers	
19/44	• Needle bearings	23/045
19/46	• • • with one row or needles	
19/463	{consisting of needle rollers held in a cage,	23/046
19/466	i.e. subunit without race rings} {comprising needle rollers and an outer ring,	23/048
19/400	i.e. subunit without inner ring}	23/06
19/48	• • • with two or more rows of needles	23/08
19/48	 Bearings with both balls and rollers 	23/082
19/49	 Bearings with both bans and toners {with two or more rows with angular contact} 	
19/492 19/495	 {with two or more rows with angular contact} {with two rows} 	23/084
19/493	{in O-arrangement}	
19/497 19/50	• • • • {In O-arrangement} • Other types of ball or roller bearings	23/086
19/30	• Other types of ball of folier bearings	23/088

	19/52	
 19/522 {related to load on the bearing, e.g. bearings with load sensors or means to protect the bearing against overload] 19/525 {related to temperature and heat, e.g. insulation} 19/527 [related to vibration and noise] 19/547 . Systems consisting of a plurality of bearings with rolling friction (spindle bearings F16C 35:08) 19/541 {Systems consisting of juxtaposed rolling bearings including at least one angular contact bearing] 19/542 {with two rolling bearings with angular contact} 19/543 {in O-arrangement} 19/545 {Systems comprising at least one rolling bearing for radial load in combination with at least one rolling bearing including at least one angular contact bearing} 19/546 {systems with spaced apart rolling bearings including at least one angular contact bearing} 19/547 {with two angular contact rolling bearings including at least one angular contact bearing} 19/548 {in O-arrangement} 19/55 with intermediate floating {or independently-driven} rings rotating at reduced speed {or with other differential ball or roller bearings} 19/56 in which the rolling bodies of one bearing differ in diameter from those of another 21/00 Combinations of sliding-contact bearings with ball or roller bearings, for exclusively rotary movement (F16C 17/24, F16C 19/52 take precedence) 21/00 Bearings for exclusively rotary movement adjustable for aligning or positioning (F16C 27/00) takes precedence {; hydrostatic bearings 23/04 {with spherical surfaces, e.g. spherical plain bearings} 23/04 {with spherical surfaces, e.g. spherical plain bearings} 23/045 {for ratial load mainly 23/046 {with spherical surfaces, e.g. spherical plain bearings} 23/046 {with spherical surfaces, e.g. spherical plain bearings} 23/046 {with spherical surfaces, e.g. spheric		
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 23/045 {for radial load mainly, e.g. radial spherical plain bearings} 23/046 {with split outer rings} 23/048 {for axial load mainly} 23/06 . Ball or roller bearings 23/08 self-adjusting 23/082 {by means of at least one substantially spherical surface} 23/084 {sliding on a complementary spherical surface} 23/086 {forming a track for rolling elements} 	23/04	<u>F16C 32/067</u>})Sliding-contact bearingsself-adjusting
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 23/048 {for axial load mainly} 23/06 . Ball or roller bearings 23/08 self-adjusting 23/082 {by means of at least one substantially spherical surface} 23/084 {sliding on a complementary spherical surface} 23/086 {forming a track for rolling elements} 	23/04 23/041	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain
 23/06 . Ball or roller bearings 23/08 . self-adjusting 23/082 . {by means of at least one substantially spherical surface} 23/084 {sliding on a complementary spherical surface} 23/086 {forming a track for rolling elements} 	23/04 23/041 23/043	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings}
 23/08 . self-adjusting 23/082 . {by means of at least one substantially spherical surface} 23/084 {sliding on a complementary spherical surface} 23/086 {forming a track for rolling elements} 	23/04 23/041 23/043 23/045 23/045	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {with split outer rings}
 23/082 {by means of at least one substantially spherical surface} 23/084 {sliding on a complementary spherical surface} 23/086 {forming a track for rolling elements} 	23/04 23/041 23/043 23/045 23/045 23/046 23/048	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {with split outer rings} {for axial load mainly}
 spherical surface } 23/084 {sliding on a complementary spherical surface } 23/086 {forming a track for rolling elements} 	23/04 23/041 23/043 23/045 23/045 23/046 23/048 23/06	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {with split outer rings} {for axial load mainly} Ball or roller bearings
<pre>surface} 23/086 {forming a track for rolling elements}</pre>	23/04 23/041 23/043 23/045 23/046 23/048 23/06 23/08	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {with split outer rings} {for axial load mainly} Ball or roller bearings self-adjusting
	23/04 23/041 23/043 23/045 23/046 23/048 23/06 23/08 23/082	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {for axial load mainly} Ball or roller bearings self-adjusting {by means of at least one substantially spherical surface}
23/088 {by means of crowning}	23/04 23/041 23/043 23/045 23/046 23/048 23/06 23/08 23/082	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {for axial load mainly} Ball or roller bearings self-adjusting {by means of at least one substantially spherical surface} {sliding on a complementary spherical surface}
	23/04 23/041 23/043 23/045 23/046 23/048 23/06 23/08 23/082 23/082	 F16C 32/067}) Sliding-contact bearings self-adjusting {with edge relief} {with spherical surfaces, e.g. spherical plain bearings} {for radial load mainly, e.g. radial spherical plain bearings} {with split outer rings} {for axial load mainly} Ball or roller bearings self-adjusting {by means of at least one substantially spherical surface} {sliding on a complementary spherical surface} {forming a track for rolling elements}

	• Bearings, parts of which are eccentrically adjustable with respect to each other	29/06
25/00	Bearings for exclusively rotary movement adjustable for wear or play (<u>F16C 27/00</u> takes precedence)	29/06 29/06
25/02	. Sliding-contact bearings	
25/04	• • self-adjusting	
25/045	• • • {with magnetic means to preload the bearing}	29/06
25/06	• Ball or roller bearings	_,,,,,
25/08	• • self-adjusting	
25/083	 • { with resilient means acting axially on a race ring to preload the bearing} 	29/06
25/086	• • • {with magnetic means to preload the bearing}	29/06
27/00	Elastic or yielding bearings or bearing supports,	29/06
	for exclusively rotary movement (shock-damping bearings for watches or clocks G04B 31/02)	29/00
27/02	bearings for watches or clocks G04B 31/02)	29/06
27/02 27/04		
	 bearings for watches or clocks <u>G04B 31/02</u>) Sliding-contact bearings Ball or roller bearings, e.g. with resilient rolling 	29/06 29/06
27/04	 bearings for watches or clocks <u>G04B 31/02</u>) Sliding-contact bearings Ball or roller bearings, e.g. with resilient rolling bodies 	29/06 29/06 29/06 29/06 29/06
27/04 27/045	 bearings for watches or clocks <u>G04B 31/02</u>) Sliding-contact bearings Ball or roller bearings, e.g. with resilient rolling bodies {with a fluid film, e.g. squeeze film damping} by means of parts of rubber or like materials (<u>F16C 27/08</u> takes precedence; with sliding surfaces 	29/06 29/06 29/06 29/06
27/04 27/045 27/06	 bearings for watches or clocks <u>G04B 31/02</u>) Sliding-contact bearings Ball or roller bearings, e.g. with resilient rolling bodies {with a fluid film, e.g. squeeze film damping} by means of parts of rubber or like materials (<u>F16C 27/08</u> takes precedence; with sliding surfaces of rubber or synthetic rubber <u>F16C 33/22</u>) 	29/06 29/06 29/06 29/06 29/06

{Other bearings}

29/00	Bearings for parts moving only linearly
	(F16C 32/06 takes precedence; incorporated in
	flexible shafts F16C 1/28 {; parts of bearings in
	general and special methods for making bearings or
	parts thereof in general <u>F16C 33/00</u> })
29/001	• {adjustable for alignment or positioning}
29/002	 {Elastic or yielding linear bearings or bearing supports}
29/004	• {Fixing of a carriage or rail, e.g. rigid mounting to a support structure or a movable part}
29/005	• {Guide rails or tracks for a linear bearing, i.e.
	adapted for movement of a carriage or bearing body there along}
29/007	• {Hybrid linear bearings, i.e. including more than
	one bearing type, e.g. sliding contact bearings as
	well as rolling contact bearings}
29/008	• {Systems with a plurality of bearings, e.g. four carriages supporting a slide on two parallel rails}
29/02	Sliding-contact bearings
29/025	• {Hydrostatic or aerostatic (this type of bearing for rotary parts <u>F16C 32/06</u>)}
29/04	• Ball or roller bearings
29/041	• • {having rollers crossed within a row}
29/043	• • {with two massive rectangular rails having facing grooves}
29/045	• {having rolling elements journaled in one of the moving parts}
29/046	• • • {with balls journaled in pockets}
29/048	• {with thin walled races, e.g. tracks of sheet metal}
29/06	• in which the rolling bodies circulate partly without carrying load

29/0602	••• {Details of the bearing body or carriage or
	parts thereof, e.g. methods for manufacturing or
	assembly }
29/0604	• • • • {of the load bearing section}
29/0607	• • • • {of parts or members for retaining the
29/0007	rolling elements, i.e. members to prevent
	the rolling elements from falling out of the
	bearing body or carriage}
20/0/00	
29/0609	• • • • {of the ends of the bearing body or carriage
	where the rolling elements change direction,
	e.g. end caps}
29/0611	• • • • {of the return passages, i.e. the passages
	where the rolling elements do not carry load}
29/0614	• • • { with a shoe type bearing body, e.g. a body
	facing one side of the guide rail or track only}
29/0616	• • • • { for supporting load essentially in a single
	direction }
29/0619	• • • • {with rollers or needles}
29/0621	• • • • {for supporting load in essentially two
	directions, e.g. by multiple points of contact
	or two rows of rolling elements}
29/0623	$\cdot \cdot \cdot \cdot \cdot \{\text{with balls}\}$
29/0626	• • • • • {with rollers}
29/0628	••••• {crossed within a row}
29/063	• • • { with a bearing body, e.g. a carriage or part
29/003	thereof, provided between the legs of a U-
	shaped guide rail or track }
20/0622	· · ·
29/0633	• • • { with a bearing body defining a U-shaped
	carriage, i.e. surrounding a guide rail or track
	on three sides}
29/0635	• • • • {whereby the return paths are provided
	as bores in a main body of the U-shaped
	carriage, e.g. the main body of the U-shaped
	carriage is a single part with end caps
	provided at each end}
29/0638	•••• {with balls}
29/064	••••• {with two rows of balls, one on each
	side of the rail}
29/0642	••••• {with four rows of balls}
29/0645	• • • • • • • • { with load directions in O-
27/0045	arrangement}
20/06/17	
29/0647	••••• {with load directions in X-
	arrangement}
29/065	
29/0652	• • • • {with rollers}
	• • • • {whereby the return paths are at least
	• • • • {whereby the return paths are at least
	• • • {whereby the return paths are at least partly defined by separate parts, e.g. covers
29/0654	•••• {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage}
	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls}
29/0654 29/0657	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each
29/0657	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} { with two rows of balls, one on each side of the rail}
29/0657 29/0659	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls}
29/0657	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-
29/0657 29/0659 29/0661	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement}
29/0657 29/0659	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-
29/0657 29/0659 29/0661	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement}
29/0657 29/0659 29/0661	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-
29/0657 29/0659 29/0661 29/0664	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers}
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of at least three
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of a top plate
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of at least three major parts, e.g. an assembly of a top plate with two separate legs attached thereto in the
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of at least three major parts, e.g. an assembly of a top plate with two separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached bearing shoes per separate legs attached thereto in the form of bearing shoes per separate legs attached beari
29/0657 29/0659 29/0661 29/0664 29/0666 29/0669	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of at least three major parts, e.g. an assembly of a top plate with two separate legs attached thereto in the form of bearing shoes (bearing shoes per se F16C 29/0614)}
29/0657 29/0659 29/0661 29/0664 29/0666	 {whereby the return paths are at least partly defined by separate parts, e.g. covers attached to the legs of the main body of the U-shaped carriage} {with balls} {with two rows of balls, one on each side of the rail} {with four rows of balls} {with load directions in O-arrangement} {with load directions in X-arrangement} {with rollers} {whereby the main body of the U-shaped carriage is an assembly of at least three major parts, e.g. an assembly of a top plate with two separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached thereto in the form of bearing shoes (bearing shoes per separate legs attached bearing shoes per separate legs attached thereto in the form of bearing shoes per separate legs attached beari

20/0/722	
29/0673	•••• {with rollers}
29/0676	• • • {with a bearing body or carriage almost fully embracing the guide rail or track, e.g. a circular
	sleeve with a longitudinal slot for the support
	posts of the rail}
29/0678	• • { with a bearing body, i.e. the body carrying the
	circulating rolling elements, provided in the
	interior of a sleeve-like guide member defining
	the opposing raceways, e.g. in a telescopic
	shaft (telescopic shafts with built-in bearings
	<u>F16C 3/035;</u> yielding coupling allowing axial
29/068	displacement by rolling elements $F16D 3/065$)
29/068	• • • {with the bearing body fully encircling the guide rail or track}
29/0683	• • • { the bearing body encircles a rail or rod of
27/0005	circular cross-section, i.e. the linear bearing
	is not suited to transmit torque}
29/0685	••••• { with balls }
29/0688	• • • • • {whereby a sleeve surrounds the
	circulating balls and thicker part of the
	sleeve form the load bearing tracks}
29/069	••••• {whereby discrete load bearing
	elements, e.g. discrete load bearing
	plates or discrete rods, are provided in a retainer and form the load bearing
	tracks}
29/0692	• • • { the bearing body encircles a guide rail or
	track of non-circular cross-section, e.g. with
	grooves or protrusions, i.e. the linear bearing
	is suited to transmit torque (telescopic shafts
	with built-in bearings <u>F16C 3/035</u> ; yielding coupling allowing axial displacement by
	rolling elements F16D 3/065)}
29/0695	• • • • { with balls }
29/0697	•••••• {with polygonal guide rail or track}
29/0697 29/08	 {with polygonal guide rail or track}Arrangements for covering or protecting the ways
	• Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools
29/08	• Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)}
29/08 29/082	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)} {fixed to the way}
29/08	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable
29/08 29/082 29/084	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track}
29/08 29/082	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-
29/08 29/082 29/084	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track}
29/08 29/082 29/084 29/086 29/088	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools <u>B23Q 11/08</u>)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage}
29/08 29/082 29/084 29/086 29/088 29/10	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings
29/08 29/082 29/084 29/086 29/088 29/10 29/12	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means}
29/08 29/082 29/084 29/086 29/088 29/10 29/12	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable along the guide rail or track} . {Seals being essentially U-shaped, e.g. for a U-shaped carriage} . {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play . {using elastic means} . {using tapered surfaces or wedges}
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable along the guide rail or track} . {Seals being essentially U-shaped, e.g. for a U-shaped carriage} . {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play . {using elastic means} . {using tapered surfaces or wedges}
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play . {using elastic means} . {using tapered surfaces or wedges}
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} . {Seals being essentially U-shaped, e.g. for a U-shaped carriage} . {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings Ball or roller bearings
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} . {Seals being essentially U-shaped, e.g. for a U-shaped carriage} . {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play . {using elastic means} . {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} . {for a U-shaped, e.g. for a U-shaped carriage} . {Seals being essentially U-shaped, e.g. for a U-shaped carriage} . {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02 32/04	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} . {fixed to the way} . {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play . {using elastic means} . {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for Knife-edge bearings using magnetic or electric supporting means
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for Knife-edge bearings using magnetic or electric supporting means {combined with other supporting means, e.g.
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02 32/04	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for Knife-edge bearings using magnetic or electric supporting means {combined with other supporting means, e.g. hybrid bearings with both magnetic and fluid
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02 32/04	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for Knife-edge bearings sliding with other supporting means {combined with other supporting means, e.g. hybrid bearings with both magnetic and fluid supporting means}
29/08 29/082 29/084 29/086 29/088 29/10 29/12 29/123 29/126 31/00 31/02 31/04 31/06 32/00 32/02 32/04 32/0402	 Arrangements for covering or protecting the ways {(protective coverings for parts of machine tools B23Q 11/08)} {fixed to the way} {fixed to the carriage or bearing body movable along the guide rail or track} {Seals being essentially U-shaped, e.g. for a U-shaped carriage} {Seals extending in the longitudinal direction of the carriage or bearing body} Arrangements for locking the bearings Arrangements for adjusting play {using elastic means} {using tapered surfaces or wedges} Bearings for parts which both rotate and move linearly Sliding-contact bearings in which the rolling bodies circulate partly without carrying load Bearings not otherwise provided for Knife-edge bearings using magnetic or electric supporting means {combined with other supporting means, e.g. hybrid bearings with both magnetic and fluid

32/0408	•	•	•		Passive magnetic bearings}
32/041	•	•	•	•	{with permanent magnets on one part attracting the other part}
32/0412					• {for radial load mainly}
32/0414					• • {with facing axial projections}
32/0417					• {for axial load mainly}
32/0419					• {with facing radial projections}
32/041)					 {whill items items projections} {for both radial and axial load}
32/0423	•	•	•	•	{with permanent magnets on both parts repelling each other}
32/0425	•	•	•	•	• {for radial load mainly}
32/0427	•	•	•	•	• {for axial load mainly}
32/0429	•	•	•	•	 {for both radial and axial load, e.g. conical magnets}
32/0431	•	•	•	•	• • {with bearings for axial load combined with bearings for radial load}
32/0434				_	• {for parts moving linearly}
32/0436	•	·	•	•	{with a conductor on one part movable with
52/0450	•	•	•	•	respect to a magnetic field, e.g. a body of copper on one part and a permanent magnet on the other part}
32/0438	•	•	•	•	 {with a superconducting body, e.g. a body made of high temperature superconducting material such as YBaCuO}
32/044	•	•	•	{	Active magnetic bearings}
32/0442	•	•	•	•	{with devices affected by abnormal,
					undesired or non-standard conditions such as shock-load, power outage, start-up or touchdown}
32/0444	•	•	•	•	{Details of devices to control the actuation of the electromagnets}
32/0446					• {Determination of the actual position
52/0440	•	•	•	•	of the moving member, e.g. details of sensors}
32/0448					• • {by using the electromagnet itself
					as sensor, e.g. sensorless magnetic bearings}
32/0451	•	•	•	•	• {Details of controllers, i.e. the units
					determining the power to be supplied, e.g. comparing elements, feedback arrangements with P.I.D. control}
32/0453					 . {for controlling two axes, i.e. combined
					control of x-axis and y-axis}
32/0455	•	•	•	•	 {including digital signal processing [DSP] and analog/digital conversion [A/ D, D/A]}
32/0457	•	•	•	•	• {Details of the power supply to the electromagnets}
32/0459					{Details of the magnetic circuit}
32/0461					• {of stationary parts of the magnetic
					circuit}
32/0463	•	•	•	•	 {with electromagnetic bias, e.g. by extra bias windings}
32/0465	•	•	•	•	 • {with permanent magnets provided in the magnetic circuit of the
32/0468					electromagnets }(of moving parts of the magnetic circuit,
	•	•	•	•	e.g. of the rotor}
32/047	•	•	•	•	{Details of housings; Mounting of active magnetic bearings}
32/0472					{for linear movement}
32/0474					{for rotary movement}
32/0476					• {with active support of one degree of
-					freedom, e.g. axial magnetic bearings}

32/0478	• • • • {with permanent magnets to support radial load}
32/048	• • • • { with active support of two degrees of
52/040	freedom, e.g. radial magnetic bearings}
32/0482	••••• { with three electromagnets to control the two degrees of freedom}
32/0485	• • • • { with active support of three degrees of freedom}
32/0487	• • • • { with active support of four degrees of freedom }
32/0489	• • • • { with active support of five degrees of
52/0409	freedom, e.g. two radial magnetic bearings combined with an axial bearing}
32/0491	••••• {with electromagnets acting in axial and radial direction, e.g. with conical magnets}
32/0493	•••• {integrated in an electrodynamic machine, e.g. self-bearing motor}
32/0495	{generating torque and axial force}
32/0497	••••• {generating torque and radial force}
32/06	• with moving member supported by a fluid cushion
	formed, at least to a large extent, otherwise than by
	movement of the shaft, e.g. hydrostatic air-cushion
32/0603	bearings• {supported by a gas cushion, e.g. an air cushion}
32/0603	 (supported by a gas cushion, e.g. an an cushion) (the gas being retained in a gap, e.g. squeeze
32/0007	film bearings}
32/0611	• • • {by means of vibrations}
32/0614	• • {the gas being supplied under pressure, e.g.
	aerostatic bearings}
32/0618	•••• {via porous material}
32/0622	• • • {via nozzles, restrictors}
32/0622 32/0625	•••• {via supply slits}
	 {via supply slits}. {supported by a liquid cushion, e.g. oil cushion}
32/0625 32/0629 32/0633	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} {the liquid being retained in a gap}
32/0625 32/0629	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings}
32/0625 32/0629 32/0633	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure}
32/0625 32/0629 32/0633 32/0637	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings}
32/0625 32/0629 32/0633 32/0637 32/064	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings}
32/0625 32/0629 32/0633 32/064 32/0644 32/0648 32/0651 32/0655 32/0659	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area <u>per se}</u> {of supply openings} {Details of hydrostatic bearings independent of
32/0625 32/0629 32/0633 32/064 32/0644 32/0648 32/0651 32/0655 32/0659	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load}
32/0625 32/0629 32/0633 32/064 32/064 32/0644 32/0648 32/0651 32/0655 32/0659 32/0662	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655 32/0659 32/0662 32/0666	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655 32/0659 32/0662 32/0666	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {of bearings adjustable for aligning,
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655 32/0659 32/0662 32/0666 32/067	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {of bearings adjustable for aligning, positioning, wear or play}
32/0625 32/0629 32/0633 32/0637 32/064 32/0644 32/0648 32/0651 32/0655 32/0659 32/0662 32/0666 32/067	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Otetails of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {by means of pre-load on the fluid bearings} {of elastic or yielding bearings or bearing supports} {Construction or mounting aspects of hydrostatic bearings, for exclusively rotary movement,
32/0625 32/0629 32/0633 32/064 32/064 32/0644 32/0648 32/0655 32/0655 32/0659 32/0662 32/0666 32/0677 32/0674 32/0681	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Otetails of the bearing area <u>per se</u>} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {by means of pre-load on the fluid bearings} {of elastic or yielding bearings or bearing supports} . {Construction or mounting aspects of hydrostatic bearings, for exclusively rotary movement, related to the direction of load}
32/0625 32/0629 32/0633 32/064 32/0644 32/0648 32/0655 32/0655 32/0659 32/0662 32/0666 32/0677 32/0671 32/0681	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Otetails of the bearing area <u>per se}</u> {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {by means of pre-load on the fluid bearings} {Construction or mounting aspects of hydrostatic bearings, for exclusively rotary movement, related to the direction of load} {for radial load only}
32/0625 32/0629 32/0633 32/0644 32/0644 32/0648 32/0655 32/0659 32/0662 32/0666 32/0677 32/0671 32/0681 32/0685 32/0688	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Details of the bearing area per se} {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {of bearing sadjustable for aligning, positioning, wear or play} {of elastic or yielding bearings or bearing supports} . {Construction or mounting aspects of hydrostatic bearings, for exclusively rotary movement, related to the direction of load} {for radial load only} {with floating bearing elements}
32/0625 32/0629 32/0633 32/064 32/0644 32/0648 32/0655 32/0655 32/0659 32/0662 32/0666 32/0677 32/0671 32/0681	 {via supply slits} . {supported by a liquid cushion, e.g. oil cushion} . {the liquid being retained in a gap} {by a magnetic field, e.g. ferrofluid bearings} {the liquid being supplied under pressure} {Details of devices to control the supply of liquids to the bearings} {by sensors or pressure-responsive control devices in or near the bearings} {Otetails of the bearing area <u>per se}</u> {of supply openings} {of pockets or grooves} . {Details of hydrostatic bearings independent of fluid supply or direction of load} {of bearing pads} {by means of pre-load on the fluid bearings} {Construction or mounting aspects of hydrostatic bearings, for exclusively rotary movement, related to the direction of load} {for radial load only}

Details or accessories of bearings

33/00	Parts of bearings; Special methods for making
	bearings or parts thereof
33/02	Parts of sliding-contact bearings
33/04	Brasses; Bushes; Linings
33/043	• • • {Sliding surface consisting mainly of ceramics, cermets or hard carbon, e.g. diamond like
33/046	carbon [DLC] }{divided or split, e.g. half-bearings or rolled
	sleeves}
33/06	 Sliding surface mainly made of metal (<u>F16C 33/24</u> - <u>F16C 33/28</u> take precedence; {casting metal bearing surfaces <u>B22D 15/02</u>,
	<u>B22D 19/08</u> })
33/08	• • • Attachment of brasses, bushes or linings to the bearing housing
33/10	Construction relative to lubrication {(lubrication in general F16N)}
33/1005	•••• {with gas, e.g. air, as lubricant}
33/101	••••• {Details of the bearing surface, e.g.
	means to generate pressure such as lobes or wedges}
33/1015	{Pressure generating grooves}
33/102	•••• {with grease as lubricant}
33/1025	•••• {with liquid, e.g. oil, as lubricant}
33/103	••••• {retained in or near the bearing}
33/1035	•••••• {by a magnetic field acting on a magnetic liquid}
33/104	••••• {in a porous body, e.g. oil impregnated sintered sleeve}
33/1045	••••• {Details of supply of the liquid to the bearing}
33/105	{Conditioning, e.g. metering, cooling, filtering}
33/1055	••••••••••••••••••••••••••••••••••••••
33/106	••••• {Details of distribution or circulation inside the bearings, e.g. details of the bearing surfaces to affect flow or
22/10/25	pressure of the liquid}
33/1065	••••• {Grooves on a bearing surface for distributing or collecting the liquid}
33/107	••••• {Grooves for generating pressure}
33/1075	•••••• {Wedges, e.g. ramps or lobes, for generating pressure}
33/108	••••• {with a plurality of elements forming the bearing surfaces, e.g. bearing
33/1085	<pre>pads }</pre>
33/109	• • • • • {Lubricant compositions or properties, e.g. viscosity}
33/1095	•••• {with solids as lubricant, e.g. dry coatings,
22/10	powder}
33/12	• • • • Structural composition; Use of special materials or surface treatments, e.g. for rust-proofing
33/121	•••• {Use of special materials}
33/122	••••• {Multilayer structures of sleeves, washers or liners}
33/124	••••• {Details of overlays}
33/125	••••• {Details of bearing layers, i.e. the
	lining}

33/127	••••• {Details of intermediate layers, e.g. nickel dams}	33/385
33/128	• • • • {Porous bearings, e.g. bushes of sintered alloy}	33/3850
33/14	• • • • Special methods of manufacture; Running-in	33/3862
33/145	• • • • • {of sintered porous bearings}	20,000
33/16	••••••••••••••••••••••••••••••••••••••	33/3868
33/18	Sliding surface consisting mainly of graphice Sliding surface consisting mainly of wood or	25/5000
55/10	fibrous material	33/387
33/20		55/507.
55/20	(<u>F16C 33/22</u> - <u>F16C 33/28</u> take precedence)	33/388
33/201	• • • {Composition of the plastic}	
33/203	• • • • {Multilayer structures, e.g. sleeves	33/388
	comprising a plastic lining}	
33/205	• • • • { with two layers }	33/3893
33/206	• • • • { with three layers }	
33/208	• • • • {Methods of manufacture, e.g. shaping,	
	applying coatings}	33/40
33/22	Sliding surface consisting mainly of rubber or	33/405
	synthetic rubber (<u>F16C 33/24</u> - <u>F16C 33/28</u>	
	take precedence)	33/41
33/24	• • • with different areas of the sliding surface	33/412
	consisting of different materials	
33/26	made from wire coils; made from a number of	33/414
00/20	discs, rings, rods, or other members	
33/28	• • • with embedded reinforcements shaped as	33/416
33/20	frames or meshed materials	
33/30	• Parts of ball or roller bearings	33/418
33/303		
33/303	• {of hybrid bearings, e.g. rolling bearings with steel races and ceramic rolling elements}	33/42
22/200		55/12
33/306	• • {Means to synchronise movements}	33/422
33/32	• Balls	33/425
33/34	Rollers; Needles	55/425
33/36	• • • with bearing-surfaces other than cylindrical,	33/427
	e.g. tapered; with grooves in the bearing	55/427
	surfaces	33/44
33/363	• • • • {with grooves in the bearing-surfaces}	55/44
33/366	{Tapered rollers, i.e. rollers generally shaped	33/445
	as truncated cones}	
33/37	Loose spacing bodies	33/46
33/3706	• • { with concave surfaces conforming to the	33/4605
	shape of the rolling elements, e.g. the spacing	
	bodies are in sliding contact with the rolling	33/461
	elements }	
33/3713	• • • {with other rolling elements serving as spacing	33/4617
	bodies, e.g. the spacing bodies are in rolling	
	contact with the load carrying rolling elements}	
33/372	rigid	33/4623
33/374	resilient	
33/38	• • Ball cages	33/4629
33/3806	••• {Details of interaction of cage and race, e.g.	
	retention, centring}	33/463
33/3812	• • {formed of interconnected segments, e.g.	
55/5012	chains}	33/464
33/3818	• • • {formed of unconnected segments}	
33/3825	 . (formed of anconnected segments) . (formed as a flexible belt, e.g. spacers) 	33/4647
55/5625	connected by a thin film}	
22/2021	- · · ·	33/4652
33/3831	• • • {with hybrid structure, i.e. with parts made of distinct materials}	
22/2027	distinct materials }	33/4658
33/3837	• • • {Massive or moulded cages having cage	
	pockets surrounding the balls, e.g. machined	33/4664
22/2012	window cages }	22.100
33/3843	• • • • {formed as one-piece cages, i.e. monoblock cages}	

	window cages }
33/3856	•••• {made from plastic, e.g. injection moulded window cages}
33/3862	•••• {comprising two annular parts joined together}
33/3868	• • • • {made from metal, e.g. two cast parts joined by rivets}
33/3875	 {made from plastic, e.g. two injection moulded parts joined by a snap fit}
33/3881	• • • { with more than three parts, e.g. two end rings connected by individual stays}
33/3887	• • {Details of individual pockets, e.g. shape or ball retaining means}
33/3893	• • • {with rolling elements with smaller diameter than the load carrying balls, e.g. cages with counter-rotating spacers}
33/40	• • • for multiple rows of balls
33/405	• • • { with two or more juxtaposed cages joined
	together or interacting with each other}
33/41	comb-shaped
33/412	• • • {Massive or moulded comb cages, e.g. snap ball cages}
33/414	•••• {formed as one-piece cages, i.e. monoblock comb cages}
33/416	••••• {made from plastic, e.g. injection moulded comb cages}
33/418	• • • {Details of individual pockets, e.g. shape or ball retaining means}
33/42	• • made from wire or sheet metal strips (F16C 33/40, F16C 33/41 take precedence)
33/422	• • • {made from sheet metal}
33/425	••••• {from a single part, e.g. ribbon cages with one corrugated annular part}
33/427	•••• {from two parts, e.g. ribbon cages with two corrugated annular parts}
33/44	• • Selection of substances (<u>F16C 33/40</u> , <u>F16C 33/41</u> take precedence)
33/445	• • • {Coatings}
33/46	. Cages for rollers or needles
33/4605	• • {Details of interaction of cage and race, e.g. retention or centring}
33/4611	• • { with hybrid structure, i.e. with parts made of distinct materials }
33/4617	 . {Massive or moulded cages having cage pockets surrounding the rollers, e.g. machined window cages}
33/4623	• • • {formed as one-piece cages, i.e. monoblock cages}
33/4629	•••• {made from metal, e.g. cast or machined window cages}
33/4635	•••• {made from plastic, e.g. injection moulded window cages}
33/4641	•••• {comprising two annular parts joined together}
33/4647	•••• {made from metal, e.g. two cast parts joined by rivets}
33/4652	••••• {made from plastic, e.g. two injection moulded parts joined by a snap fit}
33/4658	•••• {comprising three annular parts, i.e. three piece roller cages}
33/4664	•••• { with more than three parts, e.g. two end rings connected by individual stays }

. . . . {made from metal, e.g. cast or machined

33/467	• • {Details of individual pockets, e.g. shape or
	roller retaining means}
33/4676	• • • • {of the stays separating adjacent cage
	pockets, e.g. guide means for the bearing-
	surface of the rollers}
33/4682	• • • • {of the end walls, e.g. interaction with the
	end faces of the rollers}
33/4688	• • • {with rolling elements with smaller diameter
	than the load carrying rollers, e.g. cages with
00/1/00/	counter-rotating spacers}
33/4694	{Single-split roller or needle cages}
33/48	for multiple rows of rollers or needles
33/485	• • • • {with two or more juxtaposed cages joined
	together or interacting with each other}
33/49	comb-shaped
33/491	• • • {applied as pairs for retaining both ends of
	the rollers or needles}
33/492	• • • • {joined by rods}
33/494	• • • {Massive or moulded comb cages}
33/495	• • • • {formed as one piece cages, i.e.
	monoblock comb cages}
33/497	••••• {made from metal, e.g. cast or machined
	comb cages}
33/498	••••• {made from plastic, e.g. injection
	moulded comb cages}
33/50	formed of interconnected members, e.g. chains
33/502	• • • • {formed of arcuate segments retaining one or
	more rollers or needles}
33/504	• • • • { with two segments, e.g. two semicircular
	cage parts}
33/506	• • • {formed as a flexible belt}
33/508	{formed of links having an H-shape, i.e.
	links with a single stay placed between two
	rollers and with two end portions extending
00/54	along the end faces of the two rollers}
33/51	formed of unconnected members
33/513	• • • • {formed of arcuate segments for carrying one
00/516	or more rollers}
33/516	•••• { with two segments, e.g. double-split
22/50	cages with two semicircular parts}
33/52	• • • with no part entering between, or touching,
	the bearing surfaces of the rollers (F16C 33/50 takes precedence)
22/522	
33/523	• • • { with pins extending into holes or bores on the axis of the rollers }
22/526	
33/526	• • • • {extending through the rollers and joining two lateral cage parts}
33/54	• • • made from wire, strips, or sheet metal
55/54	(F16C 33/48, F16C 33/49 take precedence)
33/541	• • • {Details of individual pockets, e.g. shape or
55/541	roller retaining means}
33/542	• • • {made from sheet metal}
33/543	• • • • {from a single part}
33/545	{rolled from a band}
33/545 33/546	••••••• {roled from a band} ••••••• {with a M- or W-shaped cross section}
33/540 33/547	{with a M- of w-shaped cross section}
55/54/	joined together}
33/548	• • • • {with more than three parts, e.g. two end
55/548	rings connected by a plurality of stays or
	pins}
33/56	• • • Selection of substances (<u>F16C 33/48</u> ,
55/50	<u>F16C 33/49</u> take precedence)
33/565	• • • {Coatings}
33/58	Raceways; Race rings
55/50	· · · · · · · · · · · · · · · · · · ·

33/581	• • • {integral with other parts, e.g. with housings
	or machine elements such as shafts or gear
22/502	wheels}
33/583 33/585	 . {Details of specific parts of races} {of raceways, e.g. ribs to guide the rollers}
33/586 33/586	 • • {of faceways, e.g. hos to guide the follers} • • {outside the space between the races, e.g.
55/580	end faces or bore of inner ring}
33/588	• • {Races of sheet metal}
33/60	• • • divided {or split, e.g. comprising two
	juxtaposed rings}
33/605	• • • • {with a separate retaining member, e.g.
	flange, shoulder, guide ring, secured to a
	race ring, adjacent to the race surface, so as to abut the end of the rolling elements, e.g.
	rollers, or the cage}
33/61	formed by wires
33/62	Selection of substances
33/64	Special methods of manufacture
33/66	• • Special parts or details in view of lubrication
33/6603	• • • {with grease as lubricant}
33/6607	• • • • {Retaining the grease in or near the bearing}
33/6611	{in a porous or resinous body, e.g. a cage
33/6614	impregnated with the grease } {in recesses or cavities provided in
55/0014	retainers, races or rolling elements}
33/6618	•••• {in a reservoir in the sealing means}
33/6622	{Details of supply and/or removal of the
	grease, e.g. purging grease}
33/6625	• • • • {Controlling or conditioning the grease supply}
33/6629	• • • {Details of distribution or circulation inside
55/0022	the bearing, e.g. grooves on the cage or
	passages in the rolling elements}
33/6633	{Grease properties or compositions, e.g.
22/6627	<pre>rheological properties} {with liquid lubricant}</pre>
33/6637 33/664	 {Retaining the liquid in or near the bearing}
33/6644	{by a magnetic field acting on a magnetic
	liquid}
33/6648	• • • • {in a porous or resinous body, e.g. a cage
22/6651	impregnated with the liquid} {in recesses or cavities provided in
33/6651	retainers, races or rolling elements }
33/6655	• • • • { in a reservoir in the sealing means }
33/6659	• • • • {Details of supply of the liquid to the
	bearing, e.g. passages or nozzles}
33/6662	•••• {the liquid being carried by air or other
33/6666	gases, e.g. mist lubrication } ••••• {from an oil bath in the bearing housing,
33/0000	e.g. by an oil ring or centrifugal disc}
33/667	• • • • {related to conditioning, e.g. cooling,
	filtering}
33/6674	• • • • {related to the amount supplied, e.g. gaps
22/6677	to restrict flow of the liquid}
33/6677	••••• {from radial inside, e.g. via a passage through the shaft and/or inner ring}
33/6681	• • • • {Details of distribution or circulation inside
	the bearing, e.g. grooves on the cage or
22/6/05	passages in the rolling elements}
33/6685	•••• {Details of collecting or draining, e.g. returning the liquid to a sump}
33/6688	• • • {Lubricant compositions or properties, e.g.
22. 5000	viscosity}

33/6692	••••• {Liquids other than oil, e.g. water, refrigerants, liquid metal}
33/6696	• • { with solids as lubricant, e.g. dry coatings, powder }
33/72	• Sealings
33/723	• {Shaft end sealing means, e.g. cup-shaped caps or covers}
33/726	• • {with means to vent the interior of the bearing}
33/74	• • of sliding-contact bearings
33/741	• • • {by means of a fluid}
33/743	• • • {retained in the sealing gap}
33/745	•••• {by capillary action}
33/746	• • • • {by a magnetic field}
33/748	• • • {flowing to or from the sealing gap, e.g. vacuum seals with differential exhaust}
33/76	• • of ball or roller bearings
33/761	• • • {specifically for bearings with purely axial load}
33/762	• • • {by means of a fluid}
33/763	• • • {retained in the sealing gap}
33/765	•••• {by a magnetic field}
33/766	•••• {by pumping action}
33/767	{integral with the race}
33/768	• • {between relatively stationary parts, i.e. static seals}
33/78	• • with a diaphragm, disc, or ring, with or without resilient members {(<u>F16C 33/761</u> takes precedence)}
33/7803	• • • {suited for particular types of rolling bearings}
33/7806	•••• {for spherical roller bearings}
33/7809	{for needle roller bearings}
33/7813	• • • • { for tapered roller bearings }
33/7816	• • • {Details of the sealing or parts thereof, e.g. geometry, material}
33/782	• • • • {of the sealing region}
33/7823	••••• {of sealing lips}
33/7826	••••• {of the opposing surface cooperating with the seal, e.g. a shoulder surface of a bearing ring}
33/783	• • • • • {of the mounting region}
33/7833	{Special methods of manufacture}
33/7836	• • • • {floating with respect to both races}
33/784	• • • • {mounted to a groove in the inner surface of
	the outer race and extending toward the inner race}
33/7843	•••• {with a single annular sealing disc}
33/7846	••••••••••••••••••••••••••••••••••••••
33/785	••••• {Bearing shields made of sheet metal}
33/7853	••••• {with one or more sealing lips to contact the inner race}
33/7856	••••• {with a single sealing lip}
33/7859	•••• {with a further sealing element}
33/7863	••••• {mounted to the inner race, e.g. a flinger to use centrifugal effect}
33/7866	••••• {with sealing lips}
33/7869	• • • • { mounted with a cylindrical portion to the inner surface of the outer race and having a radial portion extending inward }
33/7873	• • • • • {with a single sealing ring of generally L- shaped cross-section}
33/7876	• • • • • {with sealing lips}

33/7879	•••• {with a further sealing ring}
33/7883	••••• {mounted to the inner race and of
	generally L-shape, the two sealing rings
	defining a sealing with box-shaped
	cross-section}
33/7886	• • • {mounted outside the gap between the inner
	and outer races, e.g. sealing rings mounted to
	an end face or outer surface of a race}
33/7889	• • • • {mounted to an inner race and extending
	toward the outer race}
33/7893	• • • • {mounted to a cage or integral therewith}
33/7896	• • • { with two or more discrete sealings arranged
	in series}
33/80	• • Labyrinth sealings {(F16C 33/761 takes
	precedence)}
33/805	• • • { in addition to other sealings, e.g. dirt guards
	to protect sealings with sealing lips}
33/82	Arrangements for electrostatic or magnetic
	action against dust or other particles
35/00	Rigid support of bearing units; Housings, e.g. caps,
	covers (F16C 23/00 takes precedence)
35/02	. in the case of sliding-contact bearings
35/04	• in the case of ball or roller bearings
35/042	 . {Housings for rolling element bearings for rotary
55/012	movement}
35/045	• • { with a radial flange to mount the housing }
35/047	• • { with a base plate substantially parallel to the
00,01,	axis of rotation, e.g. horizontally mounted
	pillow blocks}
35/06	• • Mounting {or dismounting} of ball or roller
	bearings; Fixing them onto shaft or in housing
35/061	• • • {mounting a plurality of bearings side by side}
35/062	• • • {Dismounting of ball or roller bearings}
35/063	• • • Fixing them on the shaft (with interposition of
	an element <u>F16C 35/07</u>)
35/0635	•••• {the bore of the inner ring being of special
	non-cylindrical shape which co-operates with
	a complementary shape on the shaft, e.g.
	teeth, polygonal sections}
35/067	• • Fixing them in a housing (with interposition of
	an element <u>F16C 35/07</u>)
35/07	• • Fixing them on the shaft or housing with
	interposition of an element
35/073	• • • • between shaft and inner race ring
35/077	• • • between housing and outer race ring
35/078	• • • using pressure fluid as mounting aid
35/08	• for spindles
35/10	• • with sliding-contact bearings
35/12	• • with ball or roller bearings {(adjustable bearings
	F16C 23/00, F16C 25/00; elastic bearings
	<u>F16C 27/00</u>)}
37/00	Cooling of bearings
37/002	• {of fluid bearings}
37/002	• {of magnetic bearings}
37/003	• {of rolling bearings}
311001	• [or ronning ocumingo]
39/00	Relieving load on bearings
39/02	using mechanical means
39/04	• using hydraulic or pneumatic means
39/06	• using magnetic means
39/063	• • {Permanent magnets}

33/7879 {with a further sealing ring}

39/066	• • • {with opposing permanent magnets repelling each other}
41/00	Other accessories, {e.g. devices integrated in the bearing not relating to the bearing function as such}
41/001	• {Integrated brakes or clutches for stopping or coupling the relatively movable parts}
41/002	• {Conductive elements, e.g. to prevent static electricity}
41/004	• {Electro-dynamic machines, e.g. motors, generators, actuators}
41/005	• {Fluid passages not relating to lubrication or cooling}
41/007	• {Encoders, e.g. parts with a plurality of alternating magnetic poles}
41/008	• {Identification means, e.g. markings, RFID-tags; Data transfer means}
41/02	• Arrangements for equalising the load on a plurality of bearings or their elements
41/04	• Preventing damage to bearings during storage or transport thereof or when otherwise out of use
41/045	• • {Devices for provisionally retaining needles or rollers in a bearing race before mounting of the bearing on a shaft}
43/00	Assembling bearings
43/02	Assembling sliding-contact bearings
43/04	Assembling rolling-contact bearings
43/045	• • {Mounting or replacing seals}
43/06	• Placing rolling bodies in cages or bearings
43/065	• • • {in cages}
43/08	• • • by deforming the cages or the races
43/083	• • • • {by plastic deformation of the cage}
43/086	• • • {by plastic deformation of the race}

2202/00	Solid materials defined by their properties
2202/02	Mechanical properties
2202/04	Hardness
2202/06	•• Strength or rigidity
2202/08	Resilience, elasticity, super-elasticity
2202/10	• • Porosity
2202/20	Thermal properties
2202/22	Coefficient of expansion
2202/24	. Insulating
2202/28	• • Shape memory material
2202/30	Electric properties; Magnetic properties
2202/32	Conductivity
2202/34	Superconductivity
2202/36	Piezoelectric
2202/40	Magnetic (magnetic material in general
	<u>H01F 1/00</u>)
2202/42	• • • soft-magnetic, ferromagnetic
2202/44	• • • hard-magnetic, permanent magnetic, e.g.
	samarium-cobalt
2202/50	Lubricating properties
2202/52	Graphite
2202/54	Molybdenum disulfide
2202/60	• Oil repelling
2202/64	• Water absorbing
2202/66	. Water repelling

2204/20	• Alloys based on aluminium
2204/22	• • with tin as the next major constituent
2204/24	• • with lead as the next major constituent
2204/26	• Alloys based on magnesium
2204/30	• Alloys based on one of tin, lead, antimony, bismuth,
	indium, e.g. materials for providing sliding surfaces
2204/32	Alloys based on lead
2204/34	. Alloys based on tin
2204/36	. Alloys based on bismuth
2204/40	Alloys based on refractory metals
2204/42	. Alloys based on titanium
2204/44	. Alloys based on chromium
2204/46	Alloys based on molybdenum
2204/50	Alloys based on zinc
2204/52	Alloys based on nickel, e.g. Inconel
2204/60	• Ferrous alloys, e.g. steel alloys
2204/62	• • Low carbon steel, i.e. carbon content below 0.4
	wt%
2204/64	Medium carbon steel, i.e. carbon content from 0.4
	to 0,8 wt%
2204/66	• High carbon steel, i.e. carbon content above 0.8
	wt%, e.g. through-hardenable steel
2204/70	• • with chromium as the next major constituent
2204/72	• • • with nickel as further constituent, e.g. stainless
	steel
2204/74	• • with manganese as the next major constituent
2204/80	. Amorphous alloys
2206/00	Materials with ceramics, cermets, hard carbon
	or similar non-metallic hard materials as main
	constituents
2206/02	Carbon based material
2206/04	• • Diamond like carbon [DLC]
2206/06	• • Composite carbon material, e.g. carbon fibre

2202/70 . Anti-bacterial, anti-microbial

2204/02. Noble metals2204/04. based on silver2204/10. Alloys based on copper

Metallic materials; Alloys (alloys in general <u>C22C</u>;

F16C 2206/00 takes precedence)

2204/12 . with tin as the next major constituent
2204/14 . with zinc as the next major constituent
2204/16 . with lead as the next major constituent

2204/18 . . with bismuth as the next major constituent

2204/00

2206/06	• • Composite carbon material, e.g. carbon fibre
	reinforced carbon (C/C)
2206/40	• Ceramics, e.g. carbides, nitrides, oxides, borides of
	a metal
2206/42	based on ceramic oxides
2206/44	••• based on aluminium oxide (Al_2O_3)
2206/48	• • • based on zirconia (ZrO ₂)
2206/56	• • based on ceramic carbides, e.g. silicon carbide
	(SiC)
2206/58	• • based on ceramic nitrides
2206/60	••• Silicon nitride (Si_3N_4) l
2206/80	• Cermets, i.e. composites of ceramics and metal (in
	general <u>C22C 29/00</u>)
2206/82	• • based on tungsten carbide [WC]
2200/00	
2208/00	Plastics; Synthetic resins, e.g. rubbers
2208/02	 comprising fillers, fibres
2208/04	• • Glass fibres
2208/10	. Elastomers; Rubbers

2208/12 . Polyurethan [PU]

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2208/14	. Silicone rubber
2208/20	Thermoplastic resins
2208/22	• • comprising two or more thermoplastics
2208/30	• Fluoropolymers (<u>F16C 2208/58</u> takes precedence)
2208/32	• • Polytetrafluorethylene [PTFE] (F16C 2208/58
2200/32	takes precedence)
2208/24	
2208/34	Polyvinylidenefluoride [PVDF] (<u>F16C 2208/58</u>
	takes precedence)
2208/36	• Polyarylene ether ketones [PAEK], e.g. PEK,
	PEEK (F16C 2208/58 takes precedence)
2208/40	• • Imides, e.g. polyimide [PI], polyetherimide [PEI]
	(F16C 2208/58 takes precedence)
2208/42	• • • Polyamideimide [PAI] (F16C 2208/58 takes
	precedence)
2208/44	Polybenzimidazole [PBI] (F16C 2208/58 takes
	precedence)
2208/48	• Liquid crystal polymers [LCP] (F16C 2208/58
	takes precedence)
2208/52	• Polyphenylene sulphide [PPS] (F16C 2208/58
	takes precedence)
2208/54	• Polysulphones, e.g. polysulphone [PSU],
2200/34	polyethersulphone [PES], polyethersulphone-
	block copolymer [PPSU] (<u>F16C 2208/58</u> takes
	precedence)
2208/58	• • Several materials as provided for in
2200/30	F16C 2208/30 - F16C 2208/54 mentioned as
	option
2208/60	Polyamides [PA]
2208/62	••••••••••••••••••••••••••••••••••••••
2208/66	. Acetals, e.g. polyoxymethylene [POM]
2208/70	• Polyesters, e.g. polyethylene-terephthlate [PET],
	polybutylene-terephthlate [PBT]
2208/72	• • Acrylics, e.g. polymethylmethacrylate [PMMA]
2208/76	• Polyolefins, e.g. polyproylene [PP]
2208/78	• • • Polyethylene [PE], e.g. ultra-high molecular
	weight polyethylene [UHMWPE]
2208/80	• Thermosetting resins
2208/82	• • Composites, i.e. fibre reinforced thermosetting
	resins
2208/86	• • Epoxy resins
2208/90	. Phenolic resin
2210/00	Fluids
2210/02	• defined by their properties
2210/04	• • by viscosity
2210/06	• • magnetic fluids
2210/08	• molten metals
2210/10	• water based
	······································
2212/00	Natural materials, i.e. based on animal or plant
	products such as leather, wood or cotton or
	extracted therefrom, e.g. lignin
2212/04	• Wood
2212/08	• Woven, unwoven fabrics, e.g. felt
2220/00	Shaping
2220/00	 by casting (in general <u>B22D</u>; for plastics
2220/02	<u>B29C 39/00</u>)
2220/04	• • by injection-moulding (of plastics in general
2220/04	B29C 45/00)
	<u>22/0 10/00</u> /
2220/06	in situ casting or moulding
2220/06	•• <u>in situ</u> casting or moulding
2220/08	• • by compression-moulding

2220/24	• by built-up welding (in general <u>B23K 9/04</u>)
2220/28	• by winding impregnated fibres (in general
	<u>B29C 70/00</u>)
2220/40	• by deformation without removing material
2220/42	• • by working of thin walled material such as sheet
	or tube (in general <u>B21D</u>)
2220/44	• • by rolling (in general <u>B21H</u>)
2220/46	• • by forging (in general <u>B21J</u>)
2220/48	• • by extrusion, e.g. of metallic profiles (in general
	<u>B21C 23/00</u>)
2220/60	• by removing material, e.g. machining
2220/62	• • by turning, boring, drilling (in general <u>B23B</u>)
2220/66	• • by milling (in general <u>B23C</u>)
2220/68	• by electrical discharge or electrochemical
2220/70	machining (in general <u>B23H</u>)
2220/70	• by grinding (in general <u>B24B</u>)
2220/80	• by separating parts, e.g. by severing, cracking
2220/82	• by cutting (in general <u>B26D</u>)
2220/84	• by perforating; by punching; by stamping-out (in
	general <u>B26F</u>)
2223/00	Surface treatments; Hardening; Coating
2223/02	Mechanical treatment, e.g. finishing
2223/04	• • by sizing, by shaping to final size by small plastic
	deformation, e.g. by calibrating or coining (in
	general <u>B23P 9/00</u>)
2223/06	• • polishing (in general <u>B24B 29/00</u> , <u>B24B 31/00</u>)
2223/08	• shot-peening, blasting (in general <u>B24C</u>)
2223/10	• Hardening, e.g. carburizing, carbo-nitriding (in
	general <u>C21D</u> , <u>C23C 8/00</u>)
2223/12	• • with carburizing
2223/14	• • with nitriding
2223/16	• • with carbo-nitriding
2223/18	• • with induction hardening
2223/30	• Coating surfaces (in general <u>B05C</u> , <u>C23C</u>)
	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets
2223/30	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in
2223/30 2223/32	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>)
2223/30	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general
2223/30 2223/32 2223/40	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>)
2223/30 2223/32	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma
2223/30 2223/32 2223/40 2223/42	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>)
2223/30 2223/32 2223/40	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma
2223/30 2223/32 2223/40 2223/42	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in
2223/30 2223/32 2223/40 2223/42 2223/44	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>)
2223/30 2223/32 2223/40 2223/42 2223/44	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>)
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g.
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>)
2223/30 2223/32 2223/40 2223/42 2223/44 22223/46 2223/60	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g.
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 22223/70 2223/80	 Coating surfaces (in general B05C, C23C) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general B32B) by dipping in molten material (in general C23C 2/00) by spraying the coating material, e.g. plasma spraying (in general C23C 4/00) by casting molten material on the substrate (in general C23C 6/00) by welding, e.g. by using a laser to build a layer (in general B23K 9/04) by vapour deposition, e.g. PVD, CVD (in general C23C 14/00) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general C25D) by powder coating (in general B22F 7/00)
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70	 Coating surfaces (in general B05C, C23C) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general B32B) by dipping in molten material (in general C23C 2/00) by spraying the coating material, e.g. plasma spraying (in general C23C 4/00) by casting molten material on the substrate (in general C23C 6/00) by welding, e.g. by using a laser to build a layer (in general B23K 9/04) by vapour deposition, e.g. PVD, CVD (in general C23C 14/00) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general B22F 7/00) Joining parts; Fastening; Assembling or mounting
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 22223/70 2223/80	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by velding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>)
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/80 22223/80	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/80 22223/80	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by welding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/70 2223/80 2226/00 22226/10	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>) by powder coating (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts F16D 1/00)
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/70 2223/80 2226/10 22226/12	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>) by powder coating (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts <u>F16D 1/00</u>) by press-fit, e.g. plug-in
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/70 2223/80 2226/00 22226/10	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>) by powder coating (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts <u>F16D 1/00</u>) by press-fit, e.g. plug-in by shrink fit, i.e. heating and shrinking part
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/70 2223/80 2226/10 22226/12	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>) by powder coating (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts <u>F16D 1/00</u>) by press-fit, e.g. plug-in by shrink fit, i.e. heating and shrinking part to allow assembly (for metal parts in general
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/80 22226/00 22226/10 22226/12 2226/12 2226/14	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vedding, e.g. by using a laser to build a layer (in general <u>B23K 9/04</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general F16B 4/00, for rigidly connecting coaxial parts F16D 1/00) by press-fit, e.g. plug-in by shrink fit, i.e. heating and shrinking part to allow assembly (for metal parts in general <u>B23P 11/02</u>)
2223/30 2223/32 2223/40 2223/42 2223/44 2223/46 2223/60 2223/70 2223/70 2223/80 2226/10 22226/12	 Coating surfaces (in general <u>B05C</u>, <u>C23C</u>) by attaching pre-existing layers, e.g. resin sheets or foils by adhesion to a substrate; Laminating (in general <u>B32B</u>) by dipping in molten material (in general <u>C23C 2/00</u>) by spraying the coating material, e.g. plasma spraying (in general <u>C23C 4/00</u>) by casting molten material on the substrate (in general <u>C23C 6/00</u>) by vapour deposition, e.g. PVD, CVD (in general <u>C23C 14/00</u>) by electroplating or electrolytic coating, e.g. anodising, galvanising (in general <u>C25D</u>) by powder coating (in general <u>B22F 7/00</u>) Joining parts; Fastening; Assembling or mounting parts (fasteners, securing, joints in general <u>F16B</u>) Force connections, e.g. clamping (shrinkage connections, force fits, friction grips in general <u>F16B 4/00</u>, for rigidly connecting coaxial parts <u>F16D 1/00</u>) by press-fit, e.g. plug-in by shrink fit, i.e. heating and shrinking part to allow assembly (for metal parts in general

222630 • Material joins (in general H21K) or rolling element 222637 • by soldering 22409 • Victorea creas 222638 • by soldering 22409 • Victorea creas 222634 • by welding 230000 • Application independent of particular appratuses 222636 • with attensorie welding 230010 • Calcular apprace, i.e. no use, purpose, i.e. no use, purpose, i.g. no use, purpose, victorea or welds 222640 • with attensorie welding 230010 • related to size 222643 • with attensorie s, g. bold and not connections 230010 • related to size 222654 • with tronsoft parts, g. bold and not connections • related to size 1 agg applications, e.g. barning having an inner 222667 • with complementary interlocking parts 220020 • related to size 1 agg applications, e.g. barning having an inner 222672 • with complementary interlocking parts 220023 • related to trype of movement 222674 • with song fire, e.g. y clips 220030 • related to size 222675 • with song fire, e.g. y clips 220040 • related to size 222676 • with song fire, e.g. y clips 220040 • related to size 222677 • with song fire, e.g. y clips 220040 • related to size	2226/18	• • by magnets, i.e. magnetic attraction to hold parts together	2240/84	with full complement of balls or rollers, i.e. sum of clearances less than diameter of
 224020 . by vaching 22409 . Surface areas 22409 . Volume 22000 Application independent of particular apparatuses 22000 . with allowine working 22000 Application independent of particular apparatuses 22000 . with allowine in the particular apparatuses 22000 . with allowine interformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22000 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic deformation, ag. catalking or staking 22001 . with plastic larger state and a connections 22002 . with plastic larger state and a connections 22002 . with plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22002 . with plastic plastic larger state and a connections 22003 . with plastic plastic larger state and a connections 22004 Larger plastication and connections 22004 Larger plastication and connection and connectio	2226/30	-		
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 222676 by welding 220078 with adhesive 220079 with adhesive 220070 with adhesive 220070			2240/94	. Volume
222639 with utimication exceeding 200000 Appreciation independent of particular apparatuses 222649 . with obtained characterism 200002 Clearcal use or purpose, i.e. no use, purpose, special adaptation or modification and adaptation or modification adaptation adaptation or modification adaptation adaptatinthe adaptation or modification adaptation or modification				
 222400 . with adhesive 222650 . with plastic deformation, e.g. calking or staking 222653 . with plastic deformation, e.g. calking or staking 222654 with rotes (in general F16B 1200) 222674 with rotes (in general F16B 2300 - F16B 4300) 222675 with complementary interlocking parts 222676 with complementary interlocking parts 222676 with complementary interlocking parts 220072 with complementary interlocking parts 220073 of jigsary-particle time-flocking parts 220074 with complementary interlocking parts 220075 with tongue and groover or key and slow 220075 with tongue and groover or key and slow 220076 with songe and groover or key and slow 220078 of jigsary-particle type 220074 of jigsary-particle type 220075 of jigsary-particle type 220076 of jigsary-particle type 220076 opticle type 220076			2300/00	
222650 Positive connections Positive conneconnecticons connectical applianeses P		-	2300/02	
 verify Basic deformation, e.g. enabling or staking verify Basic deformation, e.g. enabling or staking and the comection with respect to gravity verify Basic deformation verify Basic deformation, e.g. enabling or staking and the commention or material for supporting a terical shaft verify Basic deformation, e.g. enabling or staking verify Basic deformation, e.g. enabling or staking or supporting a terical shaft verify Basic deformation, e.g. enabling or staking or supporting a terical shaft verify Basic deformation, e.g. enabling or staking or supporting a terical shaft verify Basic deformation, e.g. enabling or staking or supporting a terical shaft verify Basic deformation, e.g. temperature,				adaptation or modification indicated or a wide
 vertical register and prove of the second provided in the connections of the general PL6B 2300 - PL6B 4300 - PL6B				variety of uses mentioned
 with threaked parts, e.g. bolt and nut connections (in general ELGS 23:00) - ELGE 43:00) Large applications, e.g. barning braving an inner dimeter exceeding 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Large applications, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning braving an inner dimeter screecing 500 mm Vertical, e.g. barning bravity and the screecing 500 mm Vertical, e.g. barning bravity and the screecing 500 mm Vertical, e.g. barning bravity and the screecing 500 mm Vertical, e.g. barning bravity and the screecing 500 mm Vertical, e.g. barning bravity and the screecing 500 mm Vertical applicates screecing 500 mm Vertical app			2300/10	• related to size
Care point Care point <td></td> <td></td> <td>2300/12</td> <td>• • Small applications, e.g. miniature bearings</td>			2300/12	• • Small applications, e.g. miniature bearings
222670	2226/60	1 0	2300/14	
 222670 with complementary interlocking parts or create positive interlock 222673 with super fit, e.g. by clips 222674 with super fit, e.g. by clips 222675 with super fit, e.g. by clips 220032 Horizonal, e.g. bearings for supporting a horizonal shaft 220032 Horizonal, e.g. bearings for supporting a horizonal shaft 220042 Correctings for supporting a vertical shaft 220042 Correctings for supporting a vertical shaft 220042 Correctings for supporting a vertical shaft 220042 Vertical, e.g. bearings for supporting a vertical shaft 220042 low temperature, e.g. cryogenic temperature 221400 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A01) 224003 . Temperature 224043 Stress 224044 Horizonal e.g. cryosing height or crowning radius 221674 Preiolad 221675 Freiolad serves 221676 Freiolad serves 221676 Freiolad serves 221677 Drawers 221677 Crowring, e.g. crowning height or crowning radius 221678 Preiolad serves 221679 Surface roughnes 221670 Convining,	2226/62	• • with pins, bolts or dowels	2300/20	-
222072 with bayonet joints, i.e. parts are rotated to create positive interdock 222078 with snap-fit, e.g. by clips 2300/30 222678 with snap-fit, e.g. by clips 2300/30 222678 with snap-fit, e.g. by clips 2300/30 222678 with splines, serrations or similar profiles to prevent novement between joined parts 2300/30 222678 with splines, serrations or similar profiles to prevent novement between joined parts 2300/42 223000 Setting preload 2300/42 223000 Running-in; Initial operation 2300/52 233000 Monitoring condition, e.g. temperature, load, vibration 2300/62 233000 Cleaning 2300/64 233000 Cleaning 2300/64 233000 Cleaning 2300/64 234000 Specified values or numerical ranges of parameters; Relatious between them (properties of materials F1/G C 2202/00) appliances use as vashing machines, dryers (in general A41 - A47) 234000 Time 2314/70 - Forniture 234001 Stess 2316/00 Appratatus in health or anusement (in general A61 - A62) 234002 Flew, e.g. cloading height or crowning radius divi	2226/70	• • with complementary interlocking parts		
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2240/56 . Tolerances; Accuracy of linear dimensions B21 - B32) 2240/60 . Thickness, e.g. thickness of coatings 2322/12 2240/64 . in the nanometer range 2322/14 2240/70 . Diameters; Radii 2322/14 2240/76 . Osculation, i.e. relation between radii of balls and raceway groove 2322/34 2240/80 . Pitch circle diameters [PCD] 2322/50 2240/82 . Degree of filling, i.e. sum of diameters of 2322/50	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/30 2240/34 2240/40 2240/42 2240/44 2240/46 2240/48 2240/50	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/13 2316/18 2316/30 2320/00 2320/16 2320/23	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C)
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 2240/64 in the nanometer range 2240/70 Diameters; Radii 2240/76 Osculation, i.e. relation between radii of balls and raceway groove 2240/80 Pitch circle diameters [PCD] 2240/82 Degree of filling, i.e. sum of diameters of 2240/82 Degree of filling, i.e. sum of diameters of 2322/14 . Stamping, deep-drawing or punching, e.g. die sets 2322/34 . Sawing machines (in general B23D) 3222/39 . General build up of machine tools, e.g. spindles, slides, actuators (in general B23Q) Hand tools, workshop equipment or manipulators (in general B25) 	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/30 2240/34 2240/40 2240/42 2240/42 2240/48 2240/48 2240/50 2240/54 2240/56	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general
 2240/70 Diameters; Radii Osculation, i.e. relation between radii of balls and raceway groove Osculation, i.e. relation between radii of balls and raceway groove Pitch circle diameters [PCD] Degree of filling, i.e. sum of diameters of Hand tools, workshop equipment or manipulators (in general B23D) 	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/30 2240/34 2240/40 2240/42 2240/44 2240/46 2240/48 2240/50 2240/54 2240/56 2240/60	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions Thickness, e.g. thickness of coatings 	 2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/13 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42 2322/00 	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32)
 2240//6 Osculation, i.e. relation between radii of balls and raceway groove 2240/80 Pitch circle diameters [PCD] 2240/82 Degree of filling, i.e. sum of diameters of 2322/50 Begree of filling, i.e. sum of diameters of 	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/30 2240/34 2240/40 2240/42 2240/44 2240/46 2240/48 2240/50 2240/54 2240/56 2240/60	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions Thickness, e.g. thickness of coatings 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/18 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42 2322/00 2322/12	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls
2240/80 • Pitch circle diameters [PCD] 2240/82 • Degree of filling, i.e. sum of diameters of (1) 2322/50 (2) Conternal build up of machine tools, e.g. spindles, slides, actuators (in general B23Q) (1) 2322/50 (2)	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/30 2240/34 2240/40 2240/42 2240/42 2240/44 2240/46 2240/48 2240/56 2240/56 2240/56 2240/60 2240/64	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions Thickness, e.g. thickness of coatings in the nanometer range 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/18 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42 2322/00 2322/12 2322/14	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls Stamping, deep-drawing or punching, e.g. die sets
2240/80 Pitch circle diameters [PCD] 2322/50 Degree of filling, i.e. sum of diameters of 2240/82 Degree of filling, i.e. sum of diameters of 2322/50	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/34 2240/40 2240/42 2240/44 2240/46 2240/48 2240/50 2240/56 2240/56 2240/60 2240/64 2240/70	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions Thickness, e.g. thickness of coatings in the nanometer range Diameters; Radii 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/13 2316/13 2316/30 2320/00 2320/00 2320/16 2320/23 2320/42 2322/12 2322/14 2322/14 2322/34	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls Stamping, deep-drawing or punching, e.g. die sets Sawing machines (in general B23D)
2240/82 Degree of filling, i.e. sum of diameters of (in general B25)	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/34 2240/40 2240/42 2240/44 2240/46 2240/48 2240/50 2240/56 2240/56 2240/60 2240/64 2240/70	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions Thickness, e.g. thickness of coatings in the nanometer range Diameters; Radii Osculation, i.e. relation between radii of balls 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/13 2316/13 2316/30 2320/00 2320/00 2320/16 2320/23 2320/42 2322/12 2322/14 2322/14 2322/34	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls Stamping, deep-drawing or punching, e.g. die sets Sawing machines (in general B23D) General build up of machine tools, e.g. spindles,
	2240/02 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/34 2240/40 2240/44 2240/44 2240/46 2240/48 2240/50 2240/54 2240/56 2240/56 2240/64 2240/70 2240/76	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions in the nanometer range Diameters; Radii Osculation, i.e. relation between radii of balls and raceway groove 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42 2322/14 2322/14 2322/14 2322/34 2322/39	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls Stamping, deep-drawing or punching, e.g. die sets Sawing machines (in general B23D) General build up of machine tools, e.g. spindles, slides, actuators (in general B23Q)
	2240/02 2240/06 2240/08 2240/12 2240/14 2240/18 2240/22 2240/26 2240/30 2240/34 2240/40 2240/44 2240/46 2240/48 2240/48 2240/50 2240/54 2240/56 2240/60 2240/64 2240/70 2240/76 2240/76	 parameters; Relations between them (properties of materials F16C 2202/00) Flow, e.g. volume flow or mass flow Temperature Time Force, load, stress, pressure Preload Stress Fluid pressure Speed, e.g. rotational speed Angles, e.g. inclinations Contact angles Linear dimensions, e.g. length, radius, thickness, gap Groove sizes Hole or pocket sizes Gap sizes or clearances Particle sizes Crowning, e.g. crowning height or crowning radius Surface roughness Tolerances; Accuracy of linear dimensions in the nanometer range Diameters; Radii Osculation, i.e. relation between radii of balls and raceway groove Pitch circle diameters [PCD] 	2314/00 2314/70 2314/72 2314/73 2316/00 2316/10 2316/13 2316/18 2316/30 2320/00 2320/16 2320/23 2320/42 2322/14 2322/14 2322/14 2322/34 2322/39	 Personal or domestic articles, e.g. household appliances such as washing machines, dryers (in general A41 - A47) Furniture Drawers Chairs Apparatus in health or amusement (in general A61 - A63) in medical appliances, e.g. in diagnosis, dentistry, instruments, prostheses, medical imaging appliances Dental machines Pumps for pumping blood Articles for sports, games and amusement, e.g. roller skates, toys Apparatus used in separating or mixing (in general B01 - B09) Mixing apparatus Milling apparatus (in general B02C) Centrifuges (in general B04B) Apparatus used in shaping articles (in general B21 - B32) Rolling apparatus, e.g. rolling stands, rolls Stamping, deep-drawing or punching, e.g. die sets Sawing machines (in general B23D) General build up of machine tools, e.g. spindles, slides, actuators (in general B23Q) Hand tools, workshop equipment or manipulators

2322/59	• Manipulators, e.g. robot arms (in general <u>B25J</u>)
2324/00	Apparatus used in printing (in general <u>B41</u> - <u>B44</u>)
2324/16	• Printing machines (in general <u>B41F</u>)
2225/00	
2326/00	Articles relating to transporting (in general
2226/01	$\underline{B60} - \underline{B68}$
2326/01 2326/02	 Parts of vehicles in general (engines <u>F16C 2360/00</u>) Wheel hubs or castors (in general <u>B60B</u>)
2326/02	 Wheel hubs of castors (in general <u>BOOB</u>) Vehicle suspensions, e.g. bearings, pivots or
2320/03	connecting rods used therein (in general <u>B60G</u>)
2326/06	Drive shafts (in general <u>B60K</u>)
2326/08	Vehicle seats, e.g. in linear movable seats (in
	general <u>B60N</u>)
2326/09	• Windscreen wipers, e.g. pivots therefore (in
	general <u>B60S</u>)
2326/10	• Railway vehicles (in general <u>B61</u>)
2326/20	• Land vehicles (in general <u>B62</u>)
2326/24	• Steering systems, e.g. steering rods or columns
2225/25	(in general <u>B62D</u>)
2326/26	• Bicycle steering or suspension (in general <u>B62K</u>)
2326/28	• Bicycle propulsion, e.g. crankshaft and its support (in general <u>B62M</u>)
2326/30	• Ships, e.g. propelling shafts and bearings therefor
2320,30	(in general <u>B63H</u>)
2326/43	• Aeroplanes; Helicopters (in general <u>B64C</u>)
2326/47	. Cosmonautic vehicles, i.e. bearings adapted for use
	in outer-space (in general <u>B64G</u>)
2326/58	. Conveyor systems, e.g. rollers or bearings therefor
	(in general <u>B65G</u>)
2340/00	Apparatus for treating textiles (in general
	<u>D01</u> - <u>D07</u>)
2340/18	• Apparatus for spinning or twisting (in general
	<u>D01H</u>)
2340/24	D01H) Godet rolls (in general D02)
2340/24 2350/00	
	• Godet rolls (in general <u>D02</u>)
	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>)
2350/00	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general
2350/00 2350/26 2350/52	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>)
2350/00 2350/26	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general
2350/00 2350/26 2350/52	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>)
2350/00 2350/26 2350/52	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general
2350/00 2350/26 2350/52 2350/54 2352/00	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21)
2350/00 2350/26 2350/52 2350/54	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>) Camshafts (in general <u>F01L</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>) Camshafts (in general <u>F01L</u>) Internal combustion engines (in general <u>F02B</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>) Camshafts (in general <u>F01L</u>) Internal combustion engines (in general <u>F02B</u>) Gas turbine engines (in general <u>F02C</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24	 Godet rolls (in general <u>D02</u>) Machines or articles related to building (in general <u>E01 - E06</u>) Excavators (in general <u>E02F</u>) Locks, e.g. cables to actuate door locks (in general <u>E05B</u>) Hinges, e.g. sliding bearings for hinges (in general <u>E05D</u>) Apparatus for drilling (in general <u>E21</u>) Engines or pumps (in general <u>F01 - F04</u>) Camshafts (in general <u>F01L</u>) Internal combustion engines (in general <u>F02B</u>) Gas turbine engines (in general <u>F02C</u>) Turbochargers (in general <u>F02C 6/12</u>)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/21	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04C)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/42 2360/43 2360/44	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/42 2360/43 2360/44 2360/45	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D 19/04)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/42 2360/43 2360/44	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/42 2360/43 2360/44 2360/45	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D 19/04)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/23 2360/24 2360/42 2360/43 2360/44 2360/45 2360/46	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D) Turbo-molecular pumps (in general F04D 19/04) Fans, e.g. ventilators
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/23 2360/24 2360/42 2360/43 2360/44 2360/45 2360/46	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D) Turbo-molecular pumps (in general F04D) Fans, e.g. ventilators
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/43 2360/43 2360/44 2360/45 2360/46 2361/00	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D) Turbo-molecular pumps (in general F04D) Fans, e.g. ventilators Apparatus or articles in engineering in general (F15 - F17) Axle Couplings (in general F16D 3/00)
2350/00 2350/26 2350/52 2350/54 2352/00 2360/00 2360/18 2360/22 2360/23 2360/24 2360/24 2360/42 2360/43 2360/44 2360/45 2360/46 2361/00 2361/31	 Godet rolls (in general D02) Machines or articles related to building (in general E01 - E06) Excavators (in general E02F) Locks, e.g. cables to actuate door locks (in general E05B) Hinges, e.g. sliding bearings for hinges (in general E05D) Apparatus for drilling (in general E21) Engines or pumps (in general F01 - F04) Camshafts (in general F01L) Internal combustion engines (in general F02B) Gas turbine engines (in general F02C) Turbochargers (in general F03D) Pumps with cylinders or pistons (in general F04B) Screw compressors (in general F04D) Turbo-molecular pumps (in general F04D) Turbo-molecular pumps (in general F04D) Fans, e.g. ventilators Apparatus or articles in engineering in general (F15 - F17) Axle

2361/45	• Brakes (in general <u>B60T</u> , F16D 49/00 - F16D 65/00)
2361/53	 Spring-damper, e.g. gas springs (in general F16F 9/00)
2361/55	• Flywheel systems (in general F16F 15/00)
2361/61	• Toothed gear systems, e.g. support of pinion shafts (in general F16H 57/02)
2361/63	• Gears with belts and pulleys
2361/65	• Gear shifting, change speed gear, gear box
2361/71	• Chains (in general F16G)
2361/91	• Valves
2362/00	Apparatus for lighting or heating (in general
2302/00	$\frac{F21 - F28}{F21}$
2362/40	• Ovens or other heatings (in general <u>F24</u>)
2362/52	Compressors of refrigerators, e.g. air-conditioners
2302/32	(in general <u>F25</u>)
2370/00	Apparatus relating to physics, e.g. instruments (in
2370/00	
2370/00 2370/12	Apparatus relating to physics, e.g. instruments (in
	Apparatus relating to physics, e.g. instruments (in general <u>G01</u> - <u>G12</u>)
2370/12	 Apparatus relating to physics, e.g. instruments (in general <u>G01</u> - <u>G12</u>) Hard disk drives or the like
2370/12	 Apparatus relating to physics, e.g. instruments (in general <u>G01</u> - <u>G12</u>) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles
2370/12 2370/20	 Apparatus relating to physics, e.g. instruments (in general <u>G01</u> - <u>G12</u>) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general <u>G02</u>)
2370/12 2370/20 2370/22 2370/38	 Apparatus relating to physics, e.g. instruments (in general <u>G01</u> - <u>G12</u>) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general <u>G02</u>) Polygon mirror Electrographic apparatus (in general <u>G03G</u>)
2370/12 2370/20 2370/22 2370/38 2380/00	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05)
2370/12 2370/20 2370/22 2370/38 2380/00 2380/16	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05) X-ray tubes (in general H01 J 35/00)
2370/12 2370/20 2370/22 2370/38 2380/00 2380/16 2380/18	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05) X-ray tubes (in general H01J 35/00) Handling tools for semiconductor devices
2370/12 2370/20 2370/22 2370/38 2380/00 2380/16	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05) X-ray tubes (in general H01 J 35/00)
2370/12 2370/20 2370/22 2370/38 2380/00 2380/16 2380/18	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05) X-ray tubes (in general H01J 35/00) Handling tools for semiconductor devices Dynamo-electric machines or combinations therewith, e.g. electro-motors and generators (in general H02K)
2370/12 2370/20 2370/22 2370/38 2380/00 2380/16 2380/18 2380/26	 Apparatus relating to physics, e.g. instruments (in general G01 - G12) Hard disk drives or the like Optical, e.g. movable lenses or mirrors; Spectacles (in general G02) Polygon mirror Electrographic apparatus (in general G03G) Electrical apparatus (in general H01 - H05) X-ray tubes (in general H01J 35/00) Handling tools for semiconductor devices Dynamo-electric machines or combinations therewith, e.g. electro-motors and generators (in