В	Sektion	SECTION B — PERFORMING OPERATIONS; TRANSPORTING
B21	Untersektion	SHAPING
B21	Klasse	MECHANICAL METAL-WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL; PUNCHING METAL (casting, powder metallurgy B22; shearing B23D; working of metal by the action of a high concentration of electric current B23H; soldering, welding, flame-cutting B23K; other working of metal B23P; punching sheet material in general B26F; processes for changing of physical properties of metals C21D, C22F; electroforming C25D 1/00)
B21C	Unterklasse	MANUFACTURE OF METAL SHEETS, WIRE, RODS, TUBES OR PROFILES, OTHERWISE THAN BY ROLLING; AUXILIARY OPERATIONS USED IN CONNECTION WITH METAL-WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL
		Metal drawing (continuous casting B22D 11/00; pressure welding by means of a rolling mill B23K 20/04)
B21C 1/00	Hauptgruppe	Manufacture of metal sheets, metal wire, metal rods, metal tubes by drawing
B21C 1/02	1-Punkt Untergruppe	. Drawing metal wire or like flexible metallic material by drawing machines or apparatus in which the drawing action is effected by drums
B21C 1/04	2-Punkt Untergruppe	with two or more dies operating in series
B21C 1/06	3-Punkt Untergruppe	in which the material slips on the drums
B21C 1/08	3-Punkt Untergruppe	in which the material does not slip on the drums
B21C 1/10	4-Punkt Untergruppe	with accumulation of material between consecutively-arranged dies
B21C 1/12	2-Punkt Untergruppe	Regulating or controlling speed of drawing drums, e.g. to influence tension; Drives; Stop or relief mechanisms (couplings for drums B21C 1/14; design or construction of electrical equipment, <u>see</u> the relevant classes)
B21C 1/14	2-Punkt Untergruppe	Drums, e.g. capstans (capstans or winches in general B66D); Connection of grippers thereto; Grippers specially adapted for drawing machines or apparatus of the drum type; Couplings specially adapted for these drums
B21C 1/16	1-Punkt Untergruppe	. Metal drawing by machines or apparatus in which the drawing action is effected by other means than drums, e.g. by a longitudinally-moved carriage pulling or pushing the work or stock for making metal sheets, bars, or tubes
B21C 1/18	2-Punkt Untergruppe	from stock of limited length (B21C 1/22 takes precedence)
B21C 1/20	2-Punkt Untergruppe	from stock of essentially unlimited length (B21C 1/22 takes precedence)
B21C 1/22	2-Punkt Untergruppe	specially adapted for making tubular articles (bending sheet metal into tubular form by drawing B21D 5/10)
B21C 1/24	3-Punkt Untergruppe	by means of mandrels (mandrels B21C 3/16)
B21C 1/26	4-Punkt Untergruppe	Push-bench drawing
B21C 1/27	2-Punkt Untergruppe	Carriages; Drives
B21C 1/28	3-Punkt Untergruppe	Carriages; Connections of grippers thereto; Grippers (for drawing machines of the drum type B21C 1/14)
B21C 1/30	3-Punkt Untergruppe	Drives, e.g. carriage-traversing mechanisms; Driving elements, e.g. drawing chains; Controlling the drive
B21C 1/32	2-Punkt Untergruppe	Feeding or discharging the material or mandrels
B21C 1/34	2-Punkt Untergruppe	Guiding or supporting the material or mandrels

Part   Part   Profiling tools for metal drawing: Combinations of dies and mandrels	Symbol	Тур	Titel
2-Punkt Untergruppe   with non-adjustable section (121C 3/08 takes precedence)	B21C 3/00	Hauptgruppe	Profiling tools for metal drawing; Combinations of dies and mandrels
### B21C 3/06   2-Punkt Untergruppe   with adjustable section (#21C 3/08 takes precedence)   ### B21C 3/10   2-Punkt Untergruppe   with section defined by rollers, balls, or the like   ### B21C 3/12   2-Punkt Untergruppe   with section defined by rollers, balls, or the like   ### B21C 3/12   2-Punkt Untergruppe   beholders, Roading dies   ### B21C 3/14   3-Punkt Untergruppe   beholders, Roading dies   ### B21C 3/15   1-Punkt Untergruppe   beholders, Roading dies   beholders from work ### B21C 45/00; Mounting or adjusting same   ### B21C 3/16   1-Punkt Untergruppe   Making tools by operations not covered by a single other subclass. Repairing   ### B21C 5/00   Hauptgruppe   Making tools by operations not covered by a single other subclass. Repairing   ### B21C 5/00   Hauptgruppe   Selection of compositions therefor   ### B21C 5/00   Hauptgruppe   Seating from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/02 takes precedence; healt treatment or combinations thereof with mechanical treatments, see appropriate classes)   #### B21C 23/00   2-Punkt Untergruppe   Making uncoated products   Making uncoated products   Making sheets   Making turbo blades or propellers   Making metal-coated products; Making products from two or more metals	B21C 3/02	1-Punkt Untergruppe	. Dies; Selection of material therefor; Cleaning thereof
### B21C 3/08   2-Punkt Untergruppe   with section defined by rollers, balls, or the like   ### B21C 3/14   2-Punkt Untergruppe   with hydraulic forces acting immediately on work   ### B21C 3/14   3-Punkt Untergruppe   Die holders; Rotating did   ### B21C 3/14   3-Punkt Untergruppe   Die holders; Rotating did   ### B21C 3/16   1-Punkt Untergruppe   Die holders; Combined with devices for guiding the drawing material or combined with devices for cooling, heating, or flutricating   #### B21C 3/16   1-Punkt Untergruppe   Making tools by operations not covered by a single other subclass; Repairing   #### B21C 3/16   1-Punkt Untergruppe   Making tools by operations not covered by a single other subclass; Repairing   #### B21C 5/00   Hauptgruppe   Polinting; Push-polinting   #### B21C 5/00   Hauptgruppe   Selection of compositions therefor   #### B21C 19/00   Hauptgruppe   Selection of compositions therefor   #### B21C 19/00   Hauptgruppe   Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus   ####################################	B21C 3/04	2-Punkt Untergruppe	with non-adjustable section (B21C 3/08 takes precedence)
821C 3/10 2-Punkt Untergruppe with hydraulic forces acting immediately on work 821C 3/12 2-Punkt Untergruppe Die holders; Rotating dies 821C 3/14 3-Punkt Untergruppe Die holders combined with devices for guiding the drawing material or combined with devices for cooling, heating, or lubricating Beating, or lubricating Beating or lubricating drawing material (821C 3/14 takes precedence) 821C 9/00 Hauptgruppe Pointing; Push-pointing Cooling, heating or lubricating drawing material (821C 3/14 takes precedence) 821C 9/00 Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or wilding machines or apparatus Metal activating (continuous casting 822D 11/00) 821C 23/00 Hauptgruppe Extruding metal; Impact extrusion starting from material of particular form or shape, e.g. mechanically pre-treated (821C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes) 821C 23/02 1-Punkt Untergruppe Making uncoated products 821C 23/04 2-Punkt Untergruppe Making sheets 821C 23/04 3-Punkt Untergruppe Making sheets 821C 23/04 4-Punkt Untergruppe Making sheets 821C 23/04 4-Punkt Untergruppe Making wire, bars, tubes 821C 23/14 3-Punkt Untergruppe Making the biddes or propellers 821C 23/16 4-Punkt Untergruppe Making the products 821C 23/16 4-Punkt Untergruppe by impact extrusion [2] 821C 23/12 4-Punkt Untergruppe Making the biddes or propellers 821C 23/12 4-Punkt Untergruppe by impact extrusion [2] 821C 23/12 4-Punkt Untergruppe Making the biddes or propellers 821C 23/12 4-Punkt Untergruppe by impact extrusion [2] 821C 23/12 4-Punkt Unt	B21C 3/06	2-Punkt Untergruppe	with adjustable section (B21C 3/08 takes precedence)
### 221C 3/12 2-Punkt Untergruppe . Die holders Rotating dies  ### 221C 3/14 3-Punkt Untergruppe . Die holders combined with devices for guiding the drawing material or combined with devices for cooling. heading, or lubricating  ### 221C 3/16 1-Punkt Untergruppe . Making tools by operations not covered by a single other subclass; Repairing  ### 221C 3/18 1-Punkt Untergruppe Pointing; Push-pointing  ### 221C 3/10 Hauptgruppe Cooling, heating or lubricating drawing material (## 221C 3/14 takes precedence)  ### 221C 3/10 Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus Metal extruding (continuous casting ## 221 11/00)  ### 231C 3/10 Hauptgruppe Extruding (continuous casting ## 221 11/00)  ### 231C 23/00 Hauptgruppe Extruding metal impact extrusion  ### 231C 23/00 1-Punkt Untergruppe . Making uncoated products  ### 231C 23/00 1-Punkt Untergruppe . Waking uncoated products  ### 231C 23/00 2-Punkt Untergruppe . Waking sheets  ### 231C 23/00 3-Punkt Untergruppe . Waking sheets  ### 231C 23/00 3-Punkt Untergruppe . Making sheets  ### 231C 23/00 4-Punkt Untergruppe Making other products  ### 231C 23/01 4-Punkt Untergruppe by backward extrusion  ### 231C 23/01 4-Punkt Untergruppe by waking other products Making products from two or more metals  ### 231C 23	B21C 3/08	2-Punkt Untergruppe	with section defined by rollers, balls, or the like
821C 3/14 3-Punkt Untergruppe Die holders combined with devices for guiding the drawing material or combined with devices for cooling, heating, or lubricating 821C 3/16 1-Punkt Untergruppe Making tools by operations not covered by a single other subclass; Repairing 821C 5/00 Hauptgruppe Pointing; Push-pointing 821C 9/00 Hauptgruppe Cooling, heating or lubricating drawing material (821C 3/14 takes precedence) 821C 9/02 1-Punkt Untergruppe Selection of compositions therefor 821C 19/00 Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus Metal extruding (continuous casting 822D 11/00) 821C 23/00 Hauptgruppe Extruding metal in particular form or shape, e.g. mechanically pre-treated (821C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes) 821C 23/02 1-Punkt Untergruppe Making uncoated products 821C 23/03 2-Punkt Untergruppe Making sheets 821C 23/04 2-Punkt Untergruppe Making sheets 821C 23/04 3-Punkt Untergruppe Making sheets 821C 23/10 4-Punkt Untergruppe Making sheets 821C 23/10 4-Punkt Untergruppe Making finned tubes 821C 23/10 4-Punkt Untergruppe Making other products 821C 23/10 4-Punkt Untergruppe by backward extrusion 821C 23/10 4-Punkt Untergruppe by sackward extrusion	B21C 3/10	2-Punkt Untergruppe	with hydraulic forces acting immediately on work
heating, or lubricating  1-Punkt Untergruppe	B21C 3/12	2-Punkt Untergruppe	Die holders; Rotating dies
B21C 3/18	B21C 3/14	3-Punkt Untergruppe	
B21C 5/00 Hauptgruppe Cooling, heating or lubricating drawing material (B21C 3/14 takes precedence)  1-Punkt Untergruppe Cooling, heating or lubricating drawing material (B21C 3/14 takes precedence)  1-Punkt Untergruppe Cooling, heating or lubricating drawing material (B21C 3/14 takes precedence)  1-Punkt Untergruppe Cooling, heating or winding machines or apparatus Metal extruding continuous casting B22D 11/00)  1-Punkt Untergruppe Starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  1-Punkt Untergruppe Making uncoated products  1-Punkt Untergruppe Making uncoated products  1-Punkt Untergruppe Making sheets  1-Punkt Untergruppe Making sheets  1-Punkt Untergruppe Making wire, bars, tubes  1-Punkt Untergruppe Making wire, bars, tubes  1-Punkt Untergruppe Making wire, bars, tubes  1-Punkt Untergruppe Making wire blades or probellers  1-Punkt Untergruppe Making other products  1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  1-Punkt	B21C 3/16	1-Punkt Untergruppe	. Mandrels (separating mandrels from work B21C 45/00); Mounting or adjusting same
B21C 9/00  Hauptgruppe Selection of compositions therefor  B21C 19/00  Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus Metal extruding (continuous casting B22D 11/00)  B21C 23/00  Hauptgruppe Extruding metal; Impact extrusion  1-Punkt Untergruppe Starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  B21C 23/00  1-Punkt Untergruppe Making uncoated products  B21C 23/03  2-Punkt Untergruppe Making sheets  B21C 23/06  3-Punkt Untergruppe Making sheets  B21C 23/06  3-Punkt Untergruppe Making sheets  B21C 23/10  4-Punkt Untergruppe Making sheets  B21C 23/10  4-Punkt Untergruppe Making sheet tubes or rods  B21C 23/14  3-Punkt Untergruppe Making other products  B21C 23/16  4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/16  2-Punkt Untergruppe Making turbo blades or propellers  B21C 23/20  2-Punkt Untergruppe Making turbo blades or propellers  B21C 23/20  2-Punkt Untergruppe Presses specially adapted for extruding metal (extrusion presses in general B308 11/22)  1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  2-Punkt Untergruppe Making metal-coated products; Making products from two or more metals	B21C 3/18	1-Punkt Untergruppe	. Making tools by operations not covered by a single other subclass; Repairing
B21C 19/00  Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus Metal extruding (continuous casting B22D 11/00)  B21C 23/00  Hauptgruppe Extruding metal; Impact extrusion  1-Punkt Untergruppe . starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  B21C 23/03  2-Punkt Untergruppe . Making uncoated products  B21C 23/04  2-Punkt Untergruppe . by both direct and backward extrusion  B21C 23/06  3-Punkt Untergruppe Making sheets  B21C 23/10  4-Punkt Untergruppe Making sheets  B21C 23/10  4-Punkt Untergruppe Making finned tubes  B21C 23/11  4-Punkt Untergruppe Making other products  B21C 23/14  3-Punkt Untergruppe Making other products  B21C 23/16  4-Punkt Untergruppe Making other products  B21C 23/18  2-Punkt Untergruppe Making other products  B21C 23/18  2-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18  2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20  2-Punkt Untergruppe by backward extrusion  B21C 23/21  1-Punkt Untergruppe by backward extrusion  B21C 23/22  1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24  2-Punkt Untergruppe Making metal-coated products; Making products from two or more metals	B21C 5/00	Hauptgruppe	Pointing; Push-pointing
B21C 23/00 Hauptgruppe Devices for straightening wire or like work combined with or specially adapted for use in connection with drawing or winding machines or apparatus  Metal extruding (continuous casting B22D 11/00)  B21C 23/01 1-Punkt Untergruppe Starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  B21C 23/02 1-Punkt Untergruppe by both direct and backward extrusion  B21C 23/03 2-Punkt Untergruppe by direct extrusion  B21C 23/06 3-Punkt Untergruppe Making sheets  B21C 23/10 4-Punkt Untergruppe Making wire, bars, tubes  B21C 23/10 4-Punkt Untergruppe Making finned tubes  B21C 23/11 4-Punkt Untergruppe Making finned tubes  B21C 23/12 4-Punkt Untergruppe Making other products  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making other products  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe by backward extrusion  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 9/00	Hauptgruppe	Cooling, heating or lubricating drawing material (B21C 3/14 takes precedence)
Metal extruding from winding machines or apparatus Metal extruding (continuous casting B22D 11/00)  B21C 23/01	B21C 9/02	1-Punkt Untergruppe	. Selection of compositions therefor
B21C 23/00         Hauptgruppe         Extruding metal; Impact extrusion           B21C 23/01         1-Punkt Untergruppe         . starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)           B21C 23/02         1-Punkt Untergruppe	B21C 19/00	Hauptgruppe	
1-Punkt Untergruppe . starting from material of particular form or shape, e.g. mechanically pre-treated (821C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  821C 23/02 1-Punkt Untergruppe . Making uncoated products  821C 23/03 2-Punkt Untergruppe by both direct and backward extrusion  821C 23/04 2-Punkt Untergruppe by direct extrusion  821C 23/06 3-Punkt Untergruppe Making sheets  821C 23/08 3-Punkt Untergruppe Making wire, bars, tubes  821C 23/10 4-Punkt Untergruppe Making finned tubes  821C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  821C 23/14 3-Punkt Untergruppe Making other products  821C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  821C 23/18 2-Punkt Untergruppe by impact extrusion [2]  821C 23/20 2-Punkt Untergruppe by backward extrusion  821C 23/21 1-Punkt Untergruppe Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  821C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  821C 23/24 2-Punkt Untergruppe Making metal-coated products; Making products from two or more metals			Metal extruding (continuous casting B22D 11/00)
precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)  B21C 23/02	B21C 23/00	Hauptgruppe	Extruding metal; Impact extrusion
1-Punkt Untergruppe . Making uncoated products  2-Punkt Untergruppe by both direct and backward extrusion  2-Punkt Untergruppe by direct extrusion  2-Punkt Untergruppe by direct extrusion  3-Punkt Untergruppe Making sheets  821C 23/06 3-Punkt Untergruppe Making wire, bars, tubes  821C 23/10 4-Punkt Untergruppe Making finned tubes  821C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  821C 23/14 3-Punkt Untergruppe Making other products  821C 23/16 4-Punkt Untergruppe Making other products  821C 23/18 2-Punkt Untergruppe by impact extrusion [2]  821C 23/20 2-Punkt Untergruppe by backward extrusion  821C 23/21 1-Punkt Untergruppe Making terbo blades or propellers  821C 23/22 1-Punkt Untergruppe by hackward extrusion  821C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  821C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/01	1-Punkt Untergruppe	. starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes
B21C 23/04 2-Punkt Untergruppe by both direct and backward extrusion  B21C 23/04 2-Punkt Untergruppe by direct extrusion  B21C 23/06 3-Punkt Untergruppe Making sheets  B21C 23/08 3-Punkt Untergruppe Making wire, bars, tubes  B21C 23/10 4-Punkt Untergruppe Making finned tubes  B21C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making other products  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating			precedence; heat treatment or combinations thereof with mechanical treatments, <u>see</u> appropriate classes)
B21C 23/04 2-Punkt Untergruppe by direct extrusion  B21C 23/06 3-Punkt Untergruppe Making sheets  B21C 23/08 3-Punkt Untergruppe Making wire, bars, tubes  B21C 23/10 4-Punkt Untergruppe Making finned tubes  B21C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/02	1-Punkt Untergruppe	. Making uncoated products
B21C 23/08 3-Punkt Untergruppe Making sheets  B21C 23/08 3-Punkt Untergruppe Making wire, bars, tubes  B21C 23/10 4-Punkt Untergruppe Making finned tubes  B21C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe by backward extrusion  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/03	2-Punkt Untergruppe	by both direct and backward extrusion
B21C 23/10  3-Punkt Untergruppe Making wire, bars, tubes  B21C 23/10  4-Punkt Untergruppe Making finned tubes  B21C 23/12  4-Punkt Untergruppe Extruding bent tubes or rods  B21C 23/14  3-Punkt Untergruppe Making other products  B21C 23/16  4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18  2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20  2-Punkt Untergruppe by backward extrusion  B21C 23/21  1-Punkt Untergruppe . Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22  1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24  2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/04	2-Punkt Untergruppe	by direct extrusion
B21C 23/12 4-Punkt Untergruppe Making finned tubes  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe by hackward extrusion  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/06	3-Punkt Untergruppe	Making sheets
B21C 23/12 4-Punkt Untergruppe Extruding bent tubes or rods  B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/08	3-Punkt Untergruppe	Making wire, bars, tubes
B21C 23/14 3-Punkt Untergruppe Making other products  B21C 23/16 4-Punkt Untergruppe Making turbo blades or propellers  B21C 23/18 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe . Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/10	4-Punkt Untergruppe	Making finned tubes
B21C 23/16	B21C 23/12	4-Punkt Untergruppe	Extruding bent tubes or rods
B21C 23/20 2-Punkt Untergruppe by impact extrusion [2]  B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe . Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/14	3-Punkt Untergruppe	Making other products
B21C 23/20 2-Punkt Untergruppe by backward extrusion  B21C 23/21 1-Punkt Untergruppe . Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/16	4-Punkt Untergruppe	Making turbo blades or propellers
B21C 23/21 1-Punkt Untergruppe . Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)  B21C 23/22 1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/18	2-Punkt Untergruppe	by impact extrusion [2]
B21C 23/22 1-Punkt Untergruppe . Making metal-coated products; Making products from two or more metals  B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/20	2-Punkt Untergruppe	by backward extrusion
B21C 23/24 2-Punkt Untergruppe Covering indefinite lengths of metal or non-metal material with a metal coating	B21C 23/21	1-Punkt Untergruppe	. Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)
	B21C 23/22	1-Punkt Untergruppe	. Making metal-coated products; Making products from two or more metals
B21C 23/26 3-Punkt Untergruppe Applying metal coats to cables, e.g. to insulated electric cables	B21C 23/24	2-Punkt Untergruppe	Covering indefinite lengths of metal or non-metal material with a metal coating
	B21C 23/26	3-Punkt Untergruppe	Applying metal coats to cables, e.g. to insulated electric cables

Symbol	Тур	Titel
B21C 23/28	4-Punkt Untergruppe	on intermittently-operating extrusion presses
B21C 23/30	4-Punkt Untergruppe	on continuously-operating extrusion presses
B21C 23/32	1-Punkt Untergruppe	. Lubrication of metal being extruded or of dies, or the like, e.g. physical state of lubricant, location where lubricant is applied (chemical composition, <u>see</u> appropriate classes)
B21C 25/00	Hauptgruppe	Profiling tools for metal extruding
B21C 25/02	1-Punkt Untergruppe	. Dies
B21C 25/04	1-Punkt Untergruppe	. Mandrels
B21C 25/06	1-Punkt Untergruppe	. Press heads, dies, or mandrels for coating work
B21C 25/08	1-Punkt Untergruppe	. Dies or mandrels with section variable during extruding, e. g for making tapered work; Controlling variation
B21C 25/10	1-Punkt Untergruppe	. Making tools by operations not covered by a single other subclass
B21C 26/00	Hauptgruppe	Rams or plungers; Discs therefor [2]
B21C 27/00	Hauptgruppe	Containers for metal to be extruded (B21C 29/02 takes precedence)
B21C 27/02	1-Punkt Untergruppe	. for making coated work
B21C 27/04	1-Punkt Untergruppe	. Venting metal-container chamber
B21C 29/00	Hauptgruppe	Cooling or heating work or parts of the extrusion press
B21C 29/02	1-Punkt Untergruppe	. of containers for metal to be extruded
B21C 29/04	1-Punkt Untergruppe	. of press heads, dies, or mandrels
B21C 31/00	Hauptgruppe	Control devices, e.g. for regulating the pressing speed or temperature of metal (B21C 25/08 takes precedence); Measuring devices, e.g. for temperature of metal, combined with or specially adapted for use in connection with extrusion presses (measuring devices of more general interest
		within subclass B21C, <u>see</u> group B21C 51/00)
B21C 33/00	Hauptgruppe	Feeding extrusion presses with metal to be extruded
B21C 33/02	1-Punkt Untergruppe	. the metal being in liquid form
B21C 35/00	Hauptgruppe	Removing work or waste from extruding presses; Drawing-off extruded work (in connection with the extruding of bent tubes or rods B21C 23/12); Cleaning dies, ducts, containers, or mandrels [2]
B21C 35/02	1-Punkt Untergruppe	. Removing or drawing-off work
B21C 35/03	2-Punkt Untergruppe	Straightening the work (metal straightening in general B21D)
B21C 35/04	1-Punkt Untergruppe	. Cutting-off or removing waste
B21C 35/06	1-Punkt Untergruppe	. Cleaning dies, ducts, containers or mandrels [2]
B21C 37/00	Hauptgruppe	Manufacture of metal sheets, bars, wire, tubes or like semi-manufactured products, not otherwise provided for (by rolling B21B; by working or processing semi-finished sheet metal, profiles, tubes, or wire B21D, B21F; by casting B22; by material-removing machine tools B23; by welding, e.g. cladding or plating, B23K; by grinding or polishing B24; by electroforming C25D 1/00; by drawing
		or extruding, <u>see</u> the relevant groups); Manufacture of tubes of special shape [2]
B21C 37/02	1-Punkt Untergruppe	. of sheets
B21C 37/04	1-Punkt Untergruppe	. of bars or wire
B21C 37/06	1-Punkt Untergruppe	. of tubes or metal hoses; Combined procedures for making tubes, e.g. for making multi-wall tubes (bending sheets for making tubes B21D 5/00; seaming by folding B21D 39/02)

Symbol	Тур	Titel
B21C 37/08	2-Punkt Untergruppe	Making tubes with welded or soldered seams (involving only a soldering or welding operation B23K)
B21C 37/083	3-Punkt Untergruppe	Supply, or operations combined with supply, of strip material
B21C 37/087	3-Punkt Untergruppe	using rods or strips of soldering material
B21C 37/09	3-Punkt Untergruppe	of coated strip material
B21C 37/10	2-Punkt Untergruppe	Making tubes with riveted seams
B21C 37/12	2-Punkt Untergruppe	Making tubes or metal hoses with helically arranged seams
B21C 37/14	2-Punkt Untergruppe	Making tubes from doubled flat material
B21C 37/15	2-Punkt Untergruppe	Making tubes of special shape; Making the fittings
B21C 37/16	3-Punkt Untergruppe	Making tubes with varying diameter in longitudinal direction
B21C 37/18	4-Punkt Untergruppe	conical tubes
B21C 37/20	3-Punkt Untergruppe	Making helical or similar guides in or on tubes without removing material, e.g. by drawing same over mandrels, by pushing same through dies
B21C 37/22	3-Punkt Untergruppe	Making finned or ribbed tubes by fixing strip or like material to tubes (making heat exchangers B21D 53/02)
B21C 37/24	4-Punkt Untergruppe	annularly-ribbed tubes
B21C 37/26	4-Punkt Untergruppe	helically-ribbed tubes
B21C 37/28	3-Punkt Untergruppe	Making tube fittings for connecting pipes, e.g. U-pieces
B21C 37/29	4-Punkt Untergruppe	Making branched pieces, e.g. T-pieces
B21C 37/30	2-Punkt Untergruppe	Finishing tubes, e.g. sizing, burnishing
B21C 43/00	Hauptgruppe	Devices for cleaning metal products combined with or specially adapted for use with machines or apparatus provided for in this subclass
B21C 43/02	1-Punkt Untergruppe	. combined with or specially adapted for use in connection with drawing or winding machines or apparatus
B21C 43/04	2-Punkt Untergruppe	Devices for de-scaling wire or like flexible work
DD1 0 45 100		Auxiliary operations used in connection with metal working without essentially removing material
B21C 45/00	Hauptgruppe	Separating mandrels from work or <u>vice versa</u>
B21C 47/00	Hauptgruppe	Winding-up, coiling or winding-off metal wire, metal band or other flexible metal material characterised by features relevant to metal processing only (coiling wire into particular forms B21F 3/00; hot coilers in connection with heat-treatment apparatus C21D 9/68)
B21C 47/02	1-Punkt Untergruppe	. Winding-up or coiling
B21C 47/04	2-Punkt Untergruppe	on or in reels or drums, without using a moving guide (reels or drums B21C 47/28)
B21C 47/06	3-Punkt Untergruppe	with loaded rollers, bolts, or equivalent means holding the material on the reel or drum
B21C 47/08	2-Punkt Untergruppe	without making use of a reel or drum, the first turn being formed by a stationary guide
B21C 47/10	2-Punkt Untergruppe	by means of a moving guide
B21C 47/12	3-Punkt Untergruppe	the guide moving parallel to the axis of the coil (B21C 47/14 takes precedence)
B21C 47/14	3-Punkt Untergruppe	by means of a rotating guide, e.g. laying the material around a stationary reel or drum

## B21C 27/00

Symbol	Тур	Titel
B21C 47/16	1-Punkt Untergruppe	. Unwinding or uncoiling
B21C 47/18	2-Punkt Untergruppe	from reels or drums
B21C 47/20	3-Punkt Untergruppe	the unreeled material moving transversely to the tangent line of the drum, e.g. axially, radially
B21C 47/22	2-Punkt Untergruppe	Unwinding coils without reels or drums
B21C 47/24	1-Punkt Untergruppe	. Transferring coils to or from winding apparatus or to or from operative position therein; Preventing uncoiling during transfer
B21C 47/26	1-Punkt Untergruppe	. Special arrangements with regard to simultaneous or subsequent treatment of the material
B21C 47/28	1-Punkt Untergruppe	. Drums or other coil-holders (gripping means B21C 47/32)
B21C 47/30	2-Punkt Untergruppe	expansible or contractible
B21C 47/32	1-Punkt Untergruppe	. Tongs or gripping means specially adapted for reeling operations
B21C 47/34	1-Punkt Untergruppe	. Feeding or guiding devices not specially adapted to a particular type of apparatus
B21C 49/00	Hauptgruppe	Devices for temporarily accumulating material
B21C 51/00	Hauptgruppe	Measuring, gauging, indicating, counting, or marking devices specially adapted for use in the production or manipulation of material in accordance with subclasses B21B-B21F