В	Sektion	SECTION B — PERFORMING OPERATIONS; TRANSPORTING	
B23	Klasse	MACHINE TOOLS; METAL-WORKING NOT OTHERWISE PROVIDED FOR (punching, perforating, making articles by processing sheet metal, tubes, or profiles B21D; wire-working B21F; making pins, needles, or nails B21G; making chains B21L; grinding B24)	
В23К	Unterklasse	SOLDERING OR UNSOLDERING; WELDING; CLADDING OR PLATING BY SOLDERING OR WELDING; CUTTING BY APPLYING HEAT LOCALLY, e.g. FLAME CUTTING; WORKING BY LASER BEAM (making metal-coated products by extruding metal B21C 23/22; building up linings or coverings by casting B22D 19/08; casting by dipping B22D 23/04; manufacture of composite layers by sintering metal powder B22F 7/00; arrangements on machine tools for copying or controlling B23Q; covering metals or covering materials with metals, not otherwise provided for C23C; burners F23D)	
		Soldering, e.g. brazing, or unsoldering (essentially requiring the use of welding machines or	
B23K 1/00	Hauptgruppe	welding equipment, see the relevant groups for the welding machines or welding equipment) Soldering, e.g. brazing, or unsoldering (B23K 3/00 takes precedence; characterised only by the use of special materials or media B23K 35/00; dip or wave soldering in the manufacture of printed circuits H05K 3/34) [5]	
B23K 1/002	1-Punkt Untergruppe	. Soldering by means of induction heating [5]	
B23K 1/005	1-Punkt Untergruppe	. Soldering by means of radiant energy [5]	
B23K 1/008	1-Punkt Untergruppe	. Soldering within a furnace (B23K 1/012 takes precedence) [5]	
B23K 1/012	1-Punkt Untergruppe	. Soldering with the use of hot gas [5]	
B23K 1/015	2-Punkt Untergruppe	Vapour-condensation soldering [5]	
B23K 1/018	1-Punkt Untergruppe	. Unsoldering; Removal of melted solder or other residues [5]	
B23K 1/06	1-Punkt Untergruppe	. making use of vibrations, e.g. supersonic vibrations	
B23K 1/08	1-Punkt Untergruppe	. Soldering by means of dipping in molten solder	
B23K 1/14	1-Punkt Untergruppe	. specially adapted for soldering seams (making tubes involving operations other than soldering B21C) [5]	
B23K 1/16	2-Punkt Untergruppe	longitudinal seams, e.g. of shells [5]	
B23K 1/18	2-Punkt Untergruppe	circumferential seams, e.g. of shells [5]	
B23K 1/19	1-Punkt Untergruppe	. taking account of the properties of the materials to be soldered [3]	
B23K 1/20	1-Punkt Untergruppe	e . Preliminary treatment of work or areas to be soldered, e.g. in respect of a galvanic coating (preparation of surfaces in particular ways, <u>see</u> the relevant classes for the treatments or the materials treated, e.g. C04B, C23C)	
B23K 3/00	Hauptgruppe	Tools, devices, or special appurtenances for soldering, e.g. brazing, or unsoldering, not specially adapted for particular methods (materials used for soldering B23K 35/00) [5]	
B23K 3/02	1-Punkt Untergruppe	. Soldering irons; Bits	
B23K 3/03	2-Punkt Untergruppe	electrically heated [5]	
B23K 3/04	1-Punkt Untergruppe	. Heating appliances (soldering lamps or blow-pipes F23D; electric heating in general H05B)	
B23K 3/047	2-Punkt Untergruppe	electric [5]	
B23K 3/053	3-Punkt Untergruppe	using resistance wires [5]	

Symbol	Тур	Titel	
B23K 3/06	1-Punkt Untergruppe	. Solder feeding devices; Solder melting pans	
B23K 3/08	1-Punkt Untergruppe	. Auxiliary devices therefor (cleaning pipes or tubes or systems of pipes or tubes, e.g. before soldering, B08B 9/02) [5]	
		Flame welding or cutting	
B23K 5/00	Hauptgruppe	Gas flame welding	
B23K 5/02	1-Punkt Untergruppe	. Seam welding (making tubes involving operations other than welding B21C)	
B23K 5/04	2-Punkt Untergruppe	using additional profiled strips or like of welding metal along seam edges	
B23K 5/06	2-Punkt Untergruppe	Welding longitudinal seams	
B23K 5/08	2-Punkt Untergruppe	Welding circumferential seams	
B23K 5/10	1-Punkt Untergruppe	. Welding workpieces essentially comprising layers of different metals, e.g. plated workpieces	
B23K 5/12	1-Punkt Untergruppe	. taking account of the properties of the material to be welded	
B23K 5/14	2-Punkt Untergruppe	of non-ferrous metals (B23K 5/16 takes precedence)	
B23K 5/16	2-Punkt Untergruppe	of different metals	
B23K 5/18	1-Punkt Untergruppe	. for purposes other than joining parts, e.g. built-up welding	
B23K 5/20	1-Punkt Untergruppe	. making use of vibrations, e.g. supersonic vibrations	
B23K 5/213	1-Punkt Untergruppe	. Preliminary treatment [3]	
B23K 5/22	1-Punkt Untergruppe	. Auxiliary equipment, e.g. backings, guides	
B23K 5/24	2-Punkt Untergruppe	Arrangements for supporting torches (not restricted to flame welding B23K 37/02)	
B23K 7/00	Hauptgruppe	Cutting, scarfing, or desurfacing by applying flames	
B23K 7/06	1-Punkt Untergruppe	. Machines, apparatus, or equipment specially designed for scarfing or desurfacing	
B23K 7/08	1-Punkt Untergruppe	. by applying additional compounds or means favouring the cutting, scarfing, or desurfacing procedure	
B23K 7/10	1-Punkt Untergruppe	. Auxiliary devices, e.g. for guiding or supporting the torch (guiding means applicable to other metal-working machines B23Q)	
		Electric welding or cutting	
B23K 9/00	Hauptgruppe	Arc welding or cutting (electro-slag welding B23K 25/00; welding transformers H01F; welding generators H02K)	
B23K 9/007	1-Punkt Untergruppe	. Spot arc welding [5]	
B23K 9/013	1-Punkt Untergruppe	. Arc cutting, gouging, scarfing or desurfacing [5]	
B23K 9/02	1-Punkt Untergruppe	. Seam welding; Backing means; Inserts	
B23K 9/022	2-Punkt Untergruppe	Welding by making use of electrode vibrations [5]	
B23K 9/025	2-Punkt Untergruppe	for rectilinear seams [5]	
B23K 9/028	2-Punkt Untergruppe	for curved planar seams [5]	
B23K 9/032	2-Punkt Untergruppe	for three-dimensional seams [5]	
B23K 9/035	2-Punkt Untergruppe	with backing means disposed under the seam [5]	
B23K 9/038	2-Punkt Untergruppe	using moulding means (not restricted to arc welding B23K 37/06) [5]	

Symbol	Тур	Titel	
B23K 9/04	1-Punkt Untergruppe	. Welding for other purposes than joining, e.g. built-up welding	
B23K 9/06	1-Punkt Untergruppe	. Arrangements or circuits for starting the arc, e.g. by generating ignition voltage, or for stabilising the arc [5]	
B23K 9/067	2-Punkt Untergruppe	Starting the arc [5]	
B23K 9/073	2-Punkt Untergruppe	Stabilising the arc [5]	
B23K 9/08	1-Punkt Untergruppe	. Arrangements or circuits for magnetic control of the arc	
B23K 9/09	1-Punkt Untergruppe	. Arrangements or circuits for arc welding with pulsed current or voltage [3]	
B23K 9/095	1-Punkt Untergruppe	. Monitoring or automatic control of welding parameters [5]	
B23K 9/10	1-Punkt Untergruppe	. Other electric circuits therefor; Protective circuits; Remote controls	
B23K 9/12	1-Punkt Untergruppe	. Automatic feeding or moving of electrodes or work for spot or seam welding or cutting	
B23K 9/127	2-Punkt Untergruppe	Means for tracking lines during arc welding or cutting (copying in general B23Q 35/00) [5]	
B23K 9/133	2-Punkt Untergruppe	Means for feeding electrodes, e.g. drums, rolls, motors [5]	
B23K 9/14	1-Punkt Untergruppe	. making use of insulated electrodes	
B23K 9/16	1-Punkt Untergruppe	. making use of shielding gas	
B23K 9/167	2-Punkt Untergruppe	and of a non-consumable electrode [5]	
B23K 9/173	2-Punkt Untergruppe	and of consumable electrode [5]	
B23K 9/18	1-Punkt Untergruppe	. Submerged-arc welding	
B23K 9/20	1-Punkt Untergruppe	. Stud welding	
B23K 9/22	1-Punkt Untergruppe	. Percussion welding	
B23K 9/23	1-Punkt Untergruppe	. taking account of the properties of the materials to be welded [3]	
B23K 9/235	1-Punkt Untergruppe	. Preliminary treatment [3]	
B23K 9/24	1-Punkt Untergruppe	. Features related to electrodes (form or composition of electrodes B23K 35/00)	
B23K 9/26	2-Punkt Untergruppe	Accessories for electrodes, e.g. ignition tips	
B23K 9/28	2-Punkt Untergruppe	Supporting devices for electrodes (not restricted to arc welding or cutting B23K 37/02)	
B23K 9/29	3-Punkt Untergruppe	Supporting devices adapted for making use of shielding means [5]	
B23K 9/30	3-Punkt Untergruppe	Vibrating holders for electrodes (B23K 9/022 takes precedence) [5]	
B23K 9/32	1-Punkt Untergruppe	. Accessories (earthing connections H01R)	
B23K 10/00	Hauptgruppe	Welding or cutting by means of a plasma [5]	
B23K 10/02	1-Punkt Untergruppe	. Plasma welding [5]	
B23K 11/00	Hauptgruppe	Resistance welding; Severing by resistance heating	
B23K 11/02	1-Punkt Untergruppe	. Pressure butt welding	
B23K 11/04	1-Punkt Untergruppe	. Flash butt welding	
B23K 11/06	1-Punkt Untergruppe	. using roller electrodes	
B23K 11/08	1-Punkt Untergruppe	. Seam welding not restricted to one of the preceding subgroups	

Symbol	Тур	Titel	
B23K 11/087	2-Punkt Untergruppe	for rectilinear seams [5]	
B23K 11/093	2-Punkt Untergruppe	for curved planar seams [5]	
B23K 11/10	1-Punkt Untergruppe	. Spot welding; Stitch welding	
B23K 11/11	2-Punkt Untergruppe	Spot welding [5]	
B23K 11/12	2-Punkt Untergruppe	making use of vibrations	
B23K 11/14	1-Punkt Untergruppe	. Projection welding	
B23K 11/16	1-Punkt Untergruppe	. taking account of the properties of the material to be welded	
B23K 11/18	2-Punkt Untergruppe	of non-ferrous metals (B23K 11/20 takes precedence)	
B23K 11/20	2-Punkt Untergruppe	of different metals	
B23K 11/22	1-Punkt Untergruppe	. Severing by resistance heating	
B23K 11/24	1-Punkt Untergruppe	. Electric supply or control circuits therefor	
B23K 11/25	2-Punkt Untergruppe	Monitoring devices [5]	
	5		
B23K 11/26	2-Punkt Untergruppe	Storage discharge welding	
B23K 11/28	1-Punkt Untergruppe	. Portable welding equipment	
B23K 11/30	1-Punkt Untergruppe	. Features relating to electrodes (form or composition of electrodes B23K 35/00)	
B23K 11/31	2-Punkt Untergruppe	Electrode holders (not restricted to resistance welding or severing by resistance heating B23K 37/02) [5]	
B23K 11/34	1-Punkt Untergruppe	. Preliminary treatment [3]	
B23K 11/36	1-Punkt Untergruppe	. Auxiliary equipment (B23K 11/31 takes precedence) [3, 5]	
B23K 13/00	Hauptgruppe	Welding by high-frequency current heating [5]	
B23K 13/01	1-Punkt Untergruppe	. by induction heating [5]	
B23K 13/02	2-Punkt Untergruppe	Seam welding	
B23K 13/04	1-Punkt Untergruppe	. by conduction heating [5]	
B23K 13/06	1-Punkt Untergruppe	. characterised by the shielding of the welding zone against influence of the surrounding atmosphere (selection of media B23K 35/38) [5]	
B23K 13/08	1-Punkt Untergruppe	. Electric supply or control circuits therefor [5]	
		Other welding or cutting; Working by laser beam [3]	
B23K 15/00	Hauptgruppe	Electron-beam welding or cutting (electron- or ion-beam tubes H01J 37/00)	
B23K 15/02	1-Punkt Untergruppe	. Control circuits therefor [5]	
B23K 15/04	1-Punkt Untergruppe	. for welding annular seams [5]	
B23K 15/06	1-Punkt Untergruppe	. within a vacuum chamber (B23K 15/04 takes precedence) [5]	
B23K 15/08	1-Punkt Untergruppe	. Removing material, e.g. by cutting, by hole drilling [5]	
B23K 15/10	1-Punkt Untergruppe	. Non-vacuum electron beam-welding or cutting [5]	
B23K 17/00	Hauptgruppe	Use of the energy of nuclear particles in welding or related techniques	
B23K 20/00	Hauptgruppe	Non-electric welding by applying impact or other pressure, with or without the application of heat, e.g. cladding or plating [3]	

Symbol	Тур	Titel	
B23K 20/02	1-Punkt Untergruppe	. by means of a press [3]	
B23K 20/04	1-Punkt Untergruppe	. by means of a rolling mill [3]	
B23K 20/06	1-Punkt Untergruppe	. by means of high energy impulses, e.g. magnetic energy [3]	
B23K 20/08	2-Punkt Untergruppe	Explosive welding [3]	
B23K 20/10	1-Punkt Untergruppe	. making use of vibrations, e.g. ultrasonic welding [3]	
B23K 20/12	1-Punkt Untergruppe	. the heat being generated by friction; Friction welding [3]	
B23K 20/14	1-Punkt Untergruppe	. Preventing or minimising gas access, or using protective gases or vacuum during welding (formed by material interposed between workpieces B23K 20/18) [3]	
B23K 20/16	1-Punkt Untergruppe	. with interposition of special material to facilitate connection of the parts, e.g. material for absorbing or producing gas [3]	
B23K 20/18	1-Punkt Untergruppe	. Zonal welding by interposing weld-preventing substances between zones not to be welded [3]	
B23K 20/20	1-Punkt Untergruppe	. Special methods allowing subsequent separation, e.g. of metals of high quality from scrap material [3]	
B23K 20/22	1-Punkt Untergruppe	. taking account of the properties of the materials to be welded [3]	
B23K 20/227	2-Punkt Untergruppe	with ferrous layer [5]	
B23K 20/233	2-Punkt Untergruppe	without ferrous layer [5]	
B23K 20/24	1-Punkt Untergruppe	. Preliminary treatment [3]	
B23K 20/26	1-Punkt Untergruppe	. Auxiliary equipment [3]	
B23K 23/00	Hauptgruppe	Alumino-thermic welding	
B23K 23/00 B23K 25/00	Hauptgruppe Hauptgruppe	Alumino-thermic welding Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18)	
		Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the	
B23K 25/00	Hauptgruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18)	
B23K 25/00 B23K 26/00	Hauptgruppe Hauptgruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing	
B23K 25/00 B23K 26/00 B23K 26/02	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03	Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] . Observing the workpiece [7] . Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] . Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 3-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3] Dividing the beam into multiple beams, e.g. multi-focusing [7]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06 B23K 26/067 B23K 26/073	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 3-Punkt Untergruppe 3-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3] Dividing the beam into multiple beams, e.g. multi-focusing [7]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06 B23K 26/067 B23K 26/073 B23K 26/08	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 3-Punkt Untergruppe 3-Punkt Untergruppe 1-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3] Dividing the beam into multiple beams, e.g. multi-focusing [7] Shaping the laser spot [7] Devices involving relative movement between laser beam and workpiece [3]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06 B23K 26/067 B23K 26/073 B23K 26/08 B23K 26/10	Hauptgruppe Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 3-Punkt Untergruppe 3-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3] Dividing the beam into multiple beams, e.g. multi-focusing [7] Shaping the laser spot [7] . Devices involving relative movement between laser beam and workpiece [3] using a fixed support [3]	
B23K 25/00 B23K 26/00 B23K 26/02 B23K 26/03 B23K 26/04 B23K 26/06 B23K 26/067 B23K 26/073 B23K 26/08 B23K 26/10 B23K 26/10	Hauptgruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 3-Punkt Untergruppe 3-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe	Slag welding, i.e. using a heated layer or mass of powder, slag, or the like in contact with the material to be joined (B23K 23/00 takes precedence; submerged-arc welding B23K 9/18) Working by laser beam, e.g. welding, cutting, boring (lasers H01S 3/00) [2, 3] . Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam [3] Observing the workpiece [7] Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light [3] Shaping the laser beam, e.g. by masks or multi-focusing (optical elements, systems, or apparatus, in general G02B) [3] Dividing the beam into multiple beams, e.g. multi-focusing [7] Shaping the laser spot [7] . Devices involving relative movement between laser beam and workpiece [3] using a fixed support [3] . in a special atmosphere, e.g. in an enclosure [3]	

		B23R 20/12	
Symbol	Тур	Titel	
B23K 26/20	1-Punkt Untergruppe	. Bonding, e.g. welding (soldering by means of radiant energy B23K 1/005; joining of preformed plastics parts by heating using laser beam B29C 65/16) [7]	
B23K 26/22	2-Punkt Untergruppe	Spot welding [7]	
B23K 26/24	2-Punkt Untergruppe	Seam welding [7]	
B23K 26/26	3-Punkt Untergruppe	of rectilinear seams [7]	
B23K 26/28	3-Punkt Untergruppe	of curved planar seams [7]	
B23K 26/30	3-Punkt Untergruppe	of three-dimensional seams [7]	
B23K 26/32	2-Punkt Untergruppe	taking account of the properties of the material involved [7]	
B23K 26/34	1-Punkt Untergruppe	. Welding for purposes other than joining, e.g. build-up welding [7]	
B23K 26/36	1-Punkt Untergruppe	. Removing material [7]	
B23K 26/38	2-Punkt Untergruppe	by boring or cutting [7]	
B23K 26/40	2-Punkt Untergruppe	taking account of the properties of the material involved [7]	
B23K 26/42	1-Punkt Untergruppe	. Preliminary treatment; Auxiliary operations or equipment (B23K 26/16 takes precedence) [7]	
B23K 28/00	Hauptgruppe	Welding or cutting not covered by groups B23K 5/00-B23K 26/00 (joining workpieces by electrolysis C25D 2/00; electrolytic removal of materials C25F) [2]	
B23K 28/02	1-Punkt Untergruppe	. Combined welding or cutting procedures or apparatus [2]	
B23K 31/00	Hauptgruppe	Processes relevant to this subclass, specially adapted for particular articles or purposes, but not covered by any single one of main groups B23K 1/00-B23K 28/00 (making tubes or profiled bars involving operations other than soldering or welding B21C 37/04, B21C 37/08)	
B23K 31/02	1-Punkt Untergruppe	. relating to soldering or welding (dip or wave soldering in the manufacture of printed circuits H05K 3/34)	
B23K 31/10	1-Punkt Untergruppe	. relating to cutting or desurfacing	
B23K 31/12	1-Punkt Untergruppe	. relating to investigating the properties, e.g. the weldability, of materials [5]	
B23K 33/00	Hauptgruppe	Specially-profiled edge portions of workpieces for making soldering or welding connections; Filling the seams formed thereby	
B23K 35/00	Hauptgruppe	Rods, electrodes, materials, or media, for use in soldering, welding, or cutting	
B23K 35/02	1-Punkt Untergruppe	. characterised by mechanical features, e.g. shape	
B23K 35/04	2-Punkt Untergruppe	specially designed for use as electrodes (ignition tips for arc welding or cutting B23K 9/26)	
B23K 35/06	3-Punkt Untergruppe	of non-circular cross-section; with special arrangement, e.g. internal	
B23K 35/08	4-Punkt Untergruppe	multi-cored; multiple	
B23K 35/10	4-Punkt Untergruppe	with more than one layer of coating or sheathing material	
B23K 35/12	2-Punkt Untergruppe	not specially designed for use as electrodes	
B23K 35/14	3-Punkt Untergruppe	for soldering	
B23K 35/16	3-Punkt Untergruppe	of non-circular cross-section; with special arrangement, e.g. internal (B23K 35/14 takes precedence)	
B23K 35/18	4-Punkt Untergruppe	multi-cored; multiple	
B23K 35/20	4-Punkt Untergruppe	with more than one layer of coating or sheathing material	
B23K 35/22	1-Punkt Untergruppe	. characterised by the composition or nature of the material	

Symbol	Тур	Titel	
B23K 35/24	2-Punkt Untergruppe	Selection of soldering or welding materials proper (B23K 35/34 takes precedence)	
B23K 35/26	3-Punkt Untergruppe	with the principal constituent melting at less than 400°C	
B23K 35/28	3-Punkt Untergruppe	with the principal constituent melting at less than 950°C	
B23K 35/30	3-Punkt Untergruppe	with the principal constituent melting at less than 1550°C	
B23K 35/32	3-Punkt Untergruppe	with the principal constituent melting at more than 1550°C	
B23K 35/34	2-Punkt Untergruppe	comprising compounds which yield metals when heated	
B23K 35/36	2-Punkt Untergruppe	Selection of non-metallic compositions, e.g. coatings, fluxes (B23K 35/34 takes precedence); Selection of soldering or welding materials, conjoint with selection of non-metallic compositions, both selections being of interest (selection of soldering or welding materials proper B23K 35/24) [2]	
B23K 35/362	3-Punkt Untergruppe	Selection of compositions of fluxes (B23K 35/365, B23K 35/368 take precedence) [2]	
B23K 35/363	4-Punkt Untergruppe	for soldering or brazing [4]	
B23K 35/365	3-Punkt Untergruppe	Selection of non-metallic compositions of coating materials either alone or conjoint with selection of soldering or welding materials [2]	
B23K 35/368	3-Punkt Untergruppe	Selection of non-metallic compositions of core materials either alone or conjoint with selection of soldering or welding materials [2]	
B23K 35/38	2-Punkt Untergruppe	Selection of media, e.g. special atmospheres for surrounding the working area	
B23K 35/40	1-Punkt Untergruppe	. Making wire or rods for soldering or welding (processes involving a single technical art, <u>see</u> the relevant subclasses, e.g. B05D, B21C)	
		Auxiliary devices or processes, not specially adapted to a procedure covered by only one of the other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06)	
B23K 37/00	Hauptgruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or	
B23K 37/00	Hauptgruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or	
		other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P $1/06$)	
B23K 37/02	1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element	
B23K 37/02 B23K 37/04	1-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work . moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes	
B23K 37/02 B23K 37/04 B23K 37/047	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work . moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area . for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06 B23K 37/08	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area . for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by soldering, welding or cutting or to materials to be soldered, welded or cut. [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06 B23K 37/08	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) Carriages for supporting the welding or cutting element for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] for positioning the molten material, e.g. confining it to a desired area for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by soldering, welding or cutting or to materials to be soldered, welded or cut. [5] Articles made by soldering, welding or cutting [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06 B23K 37/08 B23K 101/00 B23K 101/02	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area . for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by soldering, welding or cutting or to materials to be soldered, welded or cut. [5] Articles made by soldering, welding or cutting [5] . Honeycomb structures [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06 B23K 37/08 B23K 101/00 B23K 101/02 B23K 101/04	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area . for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by soldering, welding or cutting or to materials to be soldered, welded or cut. [5] Articles made by soldering, welding or cutting [5] . Honeycomb structures [5]	
B23K 37/02 B23K 37/04 B23K 37/047 B23K 37/053 B23K 37/06 B23K 37/08 B23K 101/00 B23K 101/02 B23K 101/04 B23K 101/06	1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe 2-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 1-Punkt Untergruppe 2-Punkt Untergruppe	other main groups of this subclass (eye-shields for welders worn on the operator's body or carried in the hand A61F 9/00; applicable to metal-working machines other than soldering, welding, or flame-cutting machines B23Q; other protective shields F16P 1/06) . Carriages for supporting the welding or cutting element . for holding or positioning work moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence) [5] aligning cylindrical work; Clamping devices therefor [5] . for positioning the molten material, e.g. confining it to a desired area . for flash removal [5] Indexing scheme associated with groups B23K 1/00-B23K 31/00, relating to articles made by soldering, welding or cutting or to materials to be soldered, welded or cut. [5] Articles made by soldering, welding or cutting [5] . Honeycomb structures [5] . Tubular or hollow articles [5]	

Symbol	Тур	Titel	
B23K 101/14	2-Punkt Untergruppe	Heat exchangers [5]	
B23K 101/16	1-Punkt Untergruppe	. Bands or sheets of indefinite length [5]	
B23K 101/18	1-Punkt Untergruppe	. Sheet panels [5]	
B23K 101/20	1-Punkt Untergruppe	. Tools [5]	
B23K 101/22	1-Punkt Untergruppe	. Nets, wire fabrics or the like [5]	
B23K 101/24	1-Punkt Untergruppe	. Frameworks [5]	
B23K 101/26	1-Punkt Untergruppe	. Railway- or like rails [5]	
B23K 101/28	1-Punkt Untergruppe	. Beams [5]	
B23K 101/30	1-Punkt Untergruppe	. Chains, hoops or rings [5]	
B23K 101/32	1-Punkt Untergruppe	. Wires [5]	
B23K 101/34	1-Punkt Untergruppe	. Coated articles [5]	
B23K 101/36	1-Punkt Untergruppe	. Electric or electronic devices [5]	
B23K 101/38	2-Punkt Untergruppe	Conductors [5]	
B23K 101/40	2-Punkt Untergruppe	Semiconductor devices [5]	
B23K 101/42	2-Punkt Untergruppe	Printed circuits [5]	
B23K 103/00	Hauptgruppe	Materials to be soldered, welded or cut [5]	
B23K 103/02	1-Punkt Untergruppe	. Iron or ferrous alloys [5]	
B23K 103/04	2-Punkt Untergruppe	Steel alloys [5]	
B23K 103/06	2-Punkt Untergruppe	Cast-iron alloys [5]	
B23K 103/08	1-Punkt Untergruppe	. Non-ferrous metals or alloys [5]	
B23K 103/10	2-Punkt Untergruppe	Aluminium or alloys thereof [5]	
B23K 103/12	2-Punkt Untergruppe	Copper or alloys thereof [5]	
B23K 103/14	2-Punkt Untergruppe	Titanium or alloys thereof [5]	
B23K 103/16	1-Punkt Untergruppe	. Composite materials [5]	
B23K 103/18	1-Punkt Untergruppe	. Dissimilar materials [5]	
B23K 103/20	2-Punkt Untergruppe	Ferrous alloys and aluminium or alloys thereof [5]	
B23K 103/22	2-Punkt Untergruppe	Ferrous alloys and copper or alloys thereof [5]	
B23K 103/24	2-Punkt Untergruppe	Ferrous alloys and titanium or alloys thereof [5]	