

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SHAPING

B23 MACHINE TOOLS; METAL-WORKING NOT OTHERWISE PROVIDED FOR

(NOTES omitted)

B23H WORKING OF METAL BY THE ACTION OF A HIGH CONCENTRATION OF ELECTRIC CURRENT ON A WORKPIECE USING AN ELECTRODE WHICH TAKES THE PLACE OF A TOOL; SUCH WORKING COMBINED WITH OTHER FORMS OF WORKING OF METAL (processes for the electrolytic or electrophoretic production of coatings, electroforming, or apparatus therefor [C25D](#); processes for the electrolytic removal of material from objects [C25F](#); manufacturing printed circuits using precipitation techniques to apply the conductive material to form the desired conductive pattern [H05K 3/18](#))

NOTE

This subclass covers the working of metal described as "electroerosion"

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	Electrical discharge machining, i.e. removing metal with a series of rapidly recurring electrical discharges between an electrode and a workpiece in the presence of a fluid dielectric	5/02	• Electrical discharge machining combined with electrochemical machining
		5/04	• Electrical discharge machining combined with mechanical working
1/02	• Electric circuits specially adapted therefor, e.g. power supply, control, preventing short circuits or other abnormal discharges	5/06	• Electrochemical machining combined with mechanical working, e.g. grinding or honing
1/022	• . {for shaping the discharge pulse train (B23H 1/024 takes precedence)}	5/08	• . Electrolytic grinding
1/024	• . {Detection of, and response to, abnormal gap conditions, e.g. short circuits (preventing short circuits or other abnormal discharges by altering machining parameters using adaptive control B23H 7/16)}	5/10	• Electrodes specially adapted therefor or their manufacture (B23H 1/04 , B23H 3/04 take precedence)
1/026	• . {Power supply protection, e.g. detection of power switch breakdown}	5/12	• Working media
1/028	• . {for multiple gap machining}	5/14	• Supply or regeneration of working media
1/04	• Electrodes specially adapted therefor or their manufacture (B23H 9/00 takes precedence)	7/00	Processes or apparatus applicable to both electrical discharge machining and electrochemical machining
1/06	• . Electrode material	7/02	• Wire-cutting
1/08	• Working media	7/04	• . Apparatus for supplying current to working gap; Electric circuits specially adapted therefor
1/10	• Supply or regeneration of working media	7/06	• . Control of the travel curve of the relative movement between electrode and workpiece
3/00	Electrochemical machining, i.e. removing metal by passing current between an electrode and a workpiece in the presence of an electrolyte	7/065	• . . {Electric circuits specially adapted therefor}
3/02	• Electric circuits specially adapted therefor, e.g. power supply, control, preventing short circuits	7/08	• . Wire electrodes
3/04	• Electrodes specially adapted therefor or their manufacture (B23H 9/00 takes precedence)	7/10	• . . Supporting, winding or electrical connection of wire-electrode
3/06	• . Electrode material	7/101	• . . . {Supply of working media}
3/08	• Working media	7/102	• . . . {Automatic wire threading}
3/10	• Supply or regeneration of working media	7/104	• . . . {Wire tension control}
5/00	Combined machining	7/105	• . . . {Wire guides}
		7/107	• . . . {Current pickups}
		7/108	• . . . {Used wire disposal devices}
		7/12	• Rotating-disc electrodes
		7/14	• Electric circuits specially adapted therefor, e.g. power supply {(B23H 3/02 takes precedence)}

7/16	<ul style="list-style-type: none"> for preventing short circuits or other abnormal discharges {by altering machining parameters using adaptive control} 	2300/20	<ul style="list-style-type: none"> Relaxation circuit power supplies for supplying the machining current, e.g. capacitor or inductance energy storage circuits
7/18	<ul style="list-style-type: none"> for maintaining or controlling the desired spacing between electrode and workpiece 	2300/22	<ul style="list-style-type: none"> Circuits using or taking into account line impedance to shape the discharge pulse
7/20	<ul style="list-style-type: none"> for program control, e.g. adaptive 	2400/00	Moving mechanisms for tool electrodes
7/22	<ul style="list-style-type: none"> Electrodes specially adapted therefor or their manufacture (B23H 7/08, B23H 7/12, B23H 9/00 take precedence) 	2400/10	<ul style="list-style-type: none"> for rotating the electrode
7/24	<ul style="list-style-type: none"> Electrode material 	2500/00	Holding and positioning of tool electrodes
7/26	<ul style="list-style-type: none"> Apparatus for moving or positioning electrode relatively to workpiece; Mounting of electrode 	2500/20	<ul style="list-style-type: none"> Methods or devices for detecting wire or workpiece position
7/265	<ul style="list-style-type: none"> {Mounting of one or more thin electrodes} 	2600/00	Machining conditions
7/28	<ul style="list-style-type: none"> Moving electrode in a plane normal to the feed direction, e.g. orbiting 	2600/10	<ul style="list-style-type: none"> Switching of machining conditions during machining
7/30	<ul style="list-style-type: none"> Moving electrode in the feed direction (B23H 7/32 takes precedence) 	2600/12	<ul style="list-style-type: none"> Switching from rough cutting to finish machining
7/32	<ul style="list-style-type: none"> Maintaining desired spacing between electrode and workpiece {, e.g. by means of particulate material} 		
7/34	<ul style="list-style-type: none"> Working media 		
7/36	<ul style="list-style-type: none"> Supply or regeneration of working media 		
7/38	<ul style="list-style-type: none"> Influencing metal working by using specially adapted means not directly involved in the removal of metal, e.g. ultrasonic waves, magnetic fields or laser irradiation 		
9/00	Machining specially adapted for treating particular metal objects or for obtaining special effects or results on metal objects (heat treatment by cathodic discharge C21D 1/38)		
9/001	<ul style="list-style-type: none"> {Disintegrating} 		
9/003	<ul style="list-style-type: none"> {Making screw-threads or gears} 		
9/005	<ul style="list-style-type: none"> {Machining elongated bodies, e.g. rods} 		
9/006	<ul style="list-style-type: none"> {Cavity sinking (B23H 9/14 takes precedence)} 		
9/008	<ul style="list-style-type: none"> {Surface roughening or texturing} 		
9/02	<ul style="list-style-type: none"> Trimming or deburring {(B23H 9/003 takes precedence)} 		
9/04	<ul style="list-style-type: none"> Treating surfaces of rolls 		
9/06	<ul style="list-style-type: none"> Marking or engraving 		
9/08	<ul style="list-style-type: none"> Sharpening 		
9/10	<ul style="list-style-type: none"> Working turbine blades or nozzles 		
9/12	<ul style="list-style-type: none"> Forming parts of complementary shape, e.g. punch-and-die 		
9/14	<ul style="list-style-type: none"> Making holes 		
9/16	<ul style="list-style-type: none"> using an electrolytic jet 		
9/18	<ul style="list-style-type: none"> Producing external conical surfaces or spikes (B23H 9/08 takes precedence) 		
11/00	Auxiliary apparatus or details, not otherwise provided for		
11/003	<ul style="list-style-type: none"> {Mounting of workpieces, e.g. working-tables} 		
11/006	<ul style="list-style-type: none"> {Electrical contacts or wires (B23H 7/10 takes precedence)} 		
2200/00	Specific machining processes or workpieces		
2200/10	<ul style="list-style-type: none"> for making bearings 		
2200/20	<ul style="list-style-type: none"> for making conical bores 		
2200/30	<ul style="list-style-type: none"> for making honeycomb structures 		
2300/00	Power source circuits or energization		
2300/10	<ul style="list-style-type: none"> Pulsed electrochemical machining 		
2300/12	<ul style="list-style-type: none"> Positive and negative pulsed electrochemical machining 		