

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.

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| 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)} |

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| 7/16 | <ul style="list-style-type: none"> for preventing short circuits or other abnormal discharges {by altering machining parameters using adaptive control} | 2300/12 | <ul style="list-style-type: none"> Positive and negative pulsed electrochemical machining |
| 7/18 | <ul style="list-style-type: none"> for maintaining or controlling the desired spacing between electrode and workpiece | 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 |
| 7/20 | <ul style="list-style-type: none"> for programme-control, e.g. adaptive (programme-control systems in general G05B 19/00) | 2300/22 | <ul style="list-style-type: none"> Circuits using or taking into account line impedance to shape the discharge pulse |
| 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) | 2400/00 | Moving mechanisms for tool electrodes |
| 7/24 | <ul style="list-style-type: none"> Electrode material | 2400/10 | <ul style="list-style-type: none"> for rotating the electrode |
| 7/26 | <ul style="list-style-type: none"> Apparatus for moving or positioning electrode relatively to workpiece; Mounting of electrode | 2500/00 | Holding and positioning of tool electrodes |
| 7/265 | <ul style="list-style-type: none"> {Mounting of one or more thin electrodes} | 2500/20 | <ul style="list-style-type: none"> Methods or devices for detecting wire or workpiece position |
| 7/28 | <ul style="list-style-type: none"> Moving electrode in a plane normal to the feed direction, e.g. orbiting | 2600/00 | Machining conditions |
| 7/30 | <ul style="list-style-type: none"> Moving electrode in the feed direction (B23H 7/32 takes precedence) | 2600/10 | <ul style="list-style-type: none"> Switching of machining conditions during machining |
| 7/32 | <ul style="list-style-type: none"> Maintaining desired spacing between electrode and workpiece {, e.g. by means of particulate material} | 2600/12 | <ul style="list-style-type: none"> Switching from rough cutting to finish machining |
| 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 | | |