

# M MEDIUM SPEED WIRE CUT MACHINE

## 中走丝线切割加工机

### Usage and Scope of Application

WEDM take wire (Molybdenum wire or Tungsten and Molybdenum alloy wire) as electrode, working liquid as media. Electrical discharging happened between the electrode and the work piece by using of the high frequency impulse power and the high peak current to bring high heat and high energy to erode the work piece. The preconceived track of the wire is controlled by the moving of X-Y axis and U-V axis which are driven by the machine. Then the workpiece is processed. "Baoma" machines featured with beautiful shape, novel structure, superior performance, and convenient operation. Meanwhile they are of good rigidity, small cutting force, big load bearing, steady movement, and safety operation. They are suit to cut the workpiece of high precision, fairly good rigidity, high toughness, especially the cold die, extrusion die, plastic mould, gear cutter hob, precision component (including big taper, same taper, unequal cone, laid abnormity and etc.) Medium speed wire cut EDM is a new generation of EDM machines which are widely used in the fields of moulds, automobile parts, aeronautics and astronautics, electronic instrument, military, light industry, and household appliances.

With the features of "Big taper, Considerable thickness, Long travel, High efficiency, Sharp precision and New structure", we build the model of machine tools industry.



### The Main Feature of The Machine

#### Machine



- 1 **Structure of Wire Frame:** the symmetric structure for the upper and down frame to keep the tension of moly wire within the scope of normal tension. There are same quantity of arrange wire pulley, which make same tension in every point of the moly wire. So no matter thin or thick work piece, the moly wire is not easy to break down. Comparing with "C" Shape structure, which always been used in other factories' machine. Our structure short the wire travel route to avoid the vibration during the running of the wire and make sure the accuracy.
- 3 **The Working Table:** the working table with T-shape slots, we supply a standard clamp for free.
- 5 **The Machine Body:** Adopt the base of Meehanite cast iron (HT250), the cast of "Baoma" machine is made by the resin-sand technology with the influence of high temperature annealing, which makes the machine body of high load intensity and has ability to resist distortion. And the max loading of the working table is better than other Chinese machines

- 2 **The Taper Cutting Mechanism:** It's driven by two step-motors to realize U and V movement, which can make the 4 axis (X,Y,U,V) simultaneously movement.
- 4 **Guide Way and Screw:** Linear Guide way and precision Ball screw.
- 6 **The Wire Winding and Traveling System:** Wire winding drum is made of special steel, which is more stable, anti-corrosion. Emerson (U.S.A) converter control the running direction, Which can be used longer time, improve the precision, roughness and reduce the wire broken.



# M MEDIUM SPEED WIRE CUT MACHINE

## 中走丝线切割加工机

### The Main Feature of The Machine

#### Controller

- 1 **Controller Layout:** The basic framework of the BMW controller adopt professional profiles and connection fixed facilities by the technology from German, the controller has realized both elegant appearance outside and rational layout inside. The effect of sealing, electromagnetic compatibility and heat dissipation is well and the controller must be high temperature aged before being sold to make sure the components be able to work for a long time continuously.
- 2 **Computer and Monitor:** Adopt High Performance Industrial computer, P4 or better, 1G RAM, 160G Harddisk, support INTERNET, with LCD Color Monitor.
- 3 **High Frequency Power and The Internal Circuit:** Adopt the digital high frequency power, the power generator is controlled by BMXP software, which can improve the precision and the stability of the pulse signal and reduce the probability of the high frequency power failure, advance the machining efficiency and the quality of working piece. Max. Current 6A ,max efficiency  $\geq 120\text{mm}^2/\text{min}$ , surface roughness  $\leq 1.2\mu\text{m}$ . The modular design is used in the internal wiring, which can reduce the probability of the failure, and it's easy to maintain.
- 4 **The Control System:** Adopt BMXP pm-k system software, the operating platform is WINDOWSXP, the Embedded System to achieve the seamless connection of various kinds of software such as AUTOCAD. Our machine has optimizing database and the function of multi-cutting, our client can choose different combination according to different working piece to be cut.



BMW2008

### The Main Feature of The Machine

#### The Cooling System



- 1 New style of three levels filtration tank (first level: filter cotton, second level: copper mesh, third level: 5um paper filter) can prolong working solution life time and improve both working solution cleanliness and residue discharge ability, so save cost but improve work piece smooth finish ( cooperate using "Baoma" new type working solution is more friendly to operators and environment ). The capacity of the tank is 56L.
- 2 The cooling pump: Adopt Import booster pump which is able to work stably long time.





# B INTELLIGENT BMXP CONTROL SYSTEM

## 智能型BMXP编控系统介绍

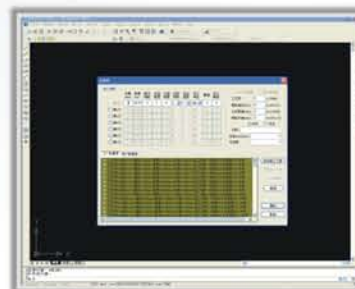
### CNC System



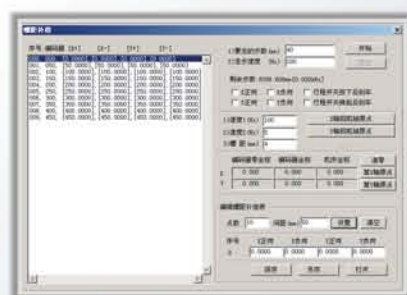
BMXP Login UI



BMXP User Interface



Database



Screw Pitch Compensation Setting

### BMXP Software Basic Functions

- Coordinate system: absolute coordinate, incremental coordinate (relative coordinate)
- Functions of coordinate transforming, zoom in and zoom out, rotating and tracking display in real time
- Functions of interpolation of straight line and circular arc;
- Function of taper processing
- Function of processing different top and bottom shape
- Functions of short circuit and wire-break handling
- Functions of memorizing when power was cut and auto-stop after processing
- Functions of auto-edge position and auto-centering
- Function of auto-adding transitional arc (Arbitrary angle)
- Function of processing backward
- Functions of menu technology and auto-programming
- Data transmission
- Functions of multi-cutting

### CNC System Configuration&Technical Performances

- CNC hardware:
  - Industrial PC: P4
  - 1024MB RAM
  - 160GB hard disk
  - 15" LCD color display
  - USB and INTERNET
- CNC software and operating platform:
  - CNC Auto-program and control function
  - The operating platform is Windows XP
- CNC system technical performance:
  - CNC 4 axes simultaneously control
  - Function of processing different top and bottom abnormalities parts
- CNC system working environment:
  - the voltage: 3-phase 380V  $\pm$  (1%~10%), 50Hz(customizing accepted)
  - Relative humidity: 40% ~ 80%
  - Cleaning environment, the dust with active gas and precipitation is not allowed; make sure there are no machines making much dust while working
  - No vibration source, no electromagnetic wave source in the rang of 20m

### BMXP System Features

- BMXP Intelligent software, which integrates the program and control and based on Windows Xp. This new designed BMXP software is the unique software for WEDM running on the condition of windows XP.
- Using the PCI slot controller card and the High-tech Industrial computer, which greatly enhanced the stability of control and greatly reduced the computer the failure rate.
- To achieve a fast and convenient computer communication network, through network technology, graphics, data and program transmission, can be directly controlled by the technical design department since the first establishment of a program.
- Embedded Control system can be smoothly connected with many design software such as AUTOCAD & etc.
- The search function of mechanical origin enable the transmission screw pitch compensation, in order to greatly improve the positioning accuracy, especially in Servo control system.
- With a large storage capacity database, which accumulated from many experiences. User can choose the suitable parameter according to deferent working conditions. Users can adjust machining parameters to establish a database at any time according to their own experience.
- The parameters of pulse power is directly controlled by the software , so as to not only improve anti-jamming capability in pulse power output, but also increase the roughness of work piece and reduce the loss of molybdenum wire.
- Pulse power of the control parameters directly from the software to control and improve the ability of pulsed power output of the interference, thereby increasing the roughness of workpiece, reducing the loss of molybdenum wire, you can choose a variety of pulse waveforms for a variety of processing conditions, improve the cutting ability of the workpiece.
- Simplifies the operation buttons on the control panel, a large number of button functions directly controlled by software to achieve.

### Compare BMXP Intelligent System with Other Normal Control System

SN	BMXP	Normal
01	Running platform: WINDOWS XP	Running platform: DOS or WINDOWS 98
02	The search function of mechanical origin enable the transmission screw pitch compensation, in order to greatly improve the positioning accuracy, especially in Servo control system	NO THIS FUNCTION
03	Use the pci connection control card, which computing speed is much faster and easy to find the universal main board to repair it These improved the stable of the computer and reduce the failure rate	Outdated Main board with old ISA ;These configuration computer has been out of date, difficult to find pare parts to repair it
04	Internet, large capacity flash U disc can be used on the controller	Not very good for use internet Only can be use the small capacity flash disc (Max 1G)
05	The BMXP can be used directly in AutoCAD	Can read DXF file. Program with HF or YH(Chinese software)
06	With a large storage capacity database, which accumulated from many experiences. User can choose the suitable parameter according to deferent working conditions. Also can adjust machining parameters to establish a database at any time according to their own experience	There is no database. All the parameters have been set by manufacturer, which can not be changed
07	Simplify the control button on the control panel, which you can control most of function though the computer	Touch control button
08	The high frequency and display controlled by software and control card to reduce the failure rate	Except the control card, There is a separated PCB card IP card to make digital display and control, easy broken

BMXP Intelligent System not only improve the Baoma WEDM, but also a revolution to the control software of WEDM, including improve the machining precision, it's advanced in China



# BM CLOSED-LOOP CONTROL WIRE CUT EDM

## BM系列闭环控制中走丝线切割加工机

(Equipped Japanese YASKAWA Servo Control)

### ► The Characteristic of Closed-loop Control Wire Cut Edm:

- 1. The cast of machine body adopt the resin-sand technology with the influence of high temperature annealing, which makes the machine body has ability to resist distortion
- 2. The travel parts of the machine adopt high quality ball screw and linear guide way
- 3. The structure of wire frame adopt the symmetric structure for the up and down frame to keep the tension of moly-wire within the scope of normal tension
- 4. Adopt BMXP system software, the operating platform is WINDOWSXP, the Embedded System to achieve the seamless connection of various kinds of software
- 5. Data exchange and remote control is realizable under the powerful network function of XP system
- 6. The system has the function of pitch correct, which can improve the position accuracy effectively
- 7. Adopt large-capacity database, users can call and store the data at any time
- 8. The wire moving is controlled by transducer, which adopts unlimited adjustment
- 9. The processing components involve godet mechanism, the best roughness  $Ra \leq 1.2\mu m$  (the roughness can be decreased greatly by using the BM working solution)
- 10. Adopt import remote control jog equipment, rapid traverse 6000mm/min
- 11. Adopt Japanese YASKAWA or Panasonic servo control system
- 12. The cooling system is equipped with a large capacity water tank with three layers filter
- 13. The machine is equipped with central lubricating system

We supply a complete range of specifications of EDM Wire Cut Machines, we can make by orders from BM320 TO BM300X200

Big taper 90°  
Large thickness 1M  
Long travel 2M × 1.2M  
High efficiency 150mm<sup>2</sup>/min  
Good finishing  $Ra \leq 1.2 \mu m$

BM400  
BM500  
BM630

Small Taper CLOSED-LOOP WEDM



BM400  
BM500  
BM630

Big Taper CLOSED-LOOP WEDM



BM800  
BM100 × 70  
BM100 × 80

Big Taper CLOSED-LOOP WEDM



BM120 × 100

Long Travel CLOSED-LOOP WEDM





# BM CLOSED-LOOP CONTROL WIRE CUT EDM

## BM系列闭环控制中走丝线切割加工机

(Equipped Japanese YASKAWA Servo Control)

### Machine Model

ITEM	A	B	C	D	E	F	I
Max. Cutting Thickness(mm)	300	500	300	500	300	500	1000
Max. Cutting Taper (thick <= 100mm )	0°	0°	± 3°	± 3°	± 30°	± 30°	± 3°

### Specification and Parameters

Parameters/Specification	BM320	BM400	BM500	BM630	BM800	BM100 × 70	BM100 × 80	BM120X100	BM150X100	BM150X130	BM160X160	BM200X120
Table Travel Size X × Y(mm)	250x320	320x400	400x500	500x630	630x800	700x1000	800x1000	1000x1200	1000x1500	1300x1500	1600x1600	1200x2000
Table Dimension L × W(mm)	380x525	415x635	500x785	600x900	660x1100	760x1400	820x1400	1090x1600	1090x1700	1400x1900	1950x1950	1330x2440
Max. Cutting thickness(mm)	300 / 500	300 / 500	500	500	500 / 800	500 / 800	500 / 800	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000
Max. Cutting Taper	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6°	0° /6°	0° /6°	0° /6°
Roughness(um)	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	Ra(one cutting)≤ 2.5 Ra(multi-cutting)≤ 1.2	≤2.5 ≤2.5	≤2.5 ≤2.5	< 2.5 < 2.5	≤2.5 ≤2.5	≤2.5 ≤2.5
Precision(mm)	≤0.012	≤0.012	≤0.012	≤0.012	≤0.012	≤0.012	≤0.012	≤0.02	≤0.02	≤0.02	≤0.02	≤0.02
Screw and Guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway
Load of table(Kg)	300	400	500	800	3000	5000	5000	5000	6000	6000	6000	6000
Machine Weight(Kg)	1600	1700	2000	2300	4500	6500	6700	7000	7500	7800	10000	12000

### Universal Parameters

Max. machining speed(mm <sup>2</sup> /min)	150
Max. working current (A )	6
Wire diameter (mm)	Φ0.15 ~ Φ0.20
Working Liquid	Working solution BM-4,BM-2,BM-1
Working reservoir capacity (L)	56
Power supply	3N ~ 380V/50Hz
Power consumption (KVA)	3
Wire Frame	Adjustable



▶ Controller  
Equipped Industrial  
Computer with LCD



BMW2008 CLOSED-LOOP WEDM Controller





# B 2008 MEDIUM SPEED WIRE CUT EDM

## 2008型中走丝线切割加工机 (Equipped Step Motor Control)

### ► The Characteristic of MEDIUM SPEED Wire Cut EDM

- 1. The cast of machine body adopt the resin-sand technology with the influence of high temperature annealing, Which makes the machine body has ability to resist distortion
- 2. The travel parts of the machine adopt high quality ball screw and linear guide way
- 3. The structure of wire frame adopts the symmetric structure for the up and down frame to keep the tension of Moly-wire within the scope of normal tension
- 4. Adopt BMXP pm-k system software; the operating platform is WINDOWSXP, the Embedded System to achieve the seamless connection of various kinds of software
- 5. Data exchange and remote control is realizable under the powerful network function of XP system
- 6. Adopt large-capacity database, user can call and to store the data at any time
- 7. The wire moving is controlled by transducer, which adopts unlimited adjustment
- 8. The processing components involve godet mechanism, the best roughness  $Ra \leq 1.5 \mu m$   
(The roughness can be decreased greatly by using the BM working solution)
- 9. The cooling system is equipped with a large water tank with three levels filtration

Big taper 90°  
Large thickness 1M  
Long travel 2M x 1.2M  
High efficiency 150mm<sup>2</sup>/min  
Good finishing  $Ra \leq 1.5 \mu m$

We supply a complete range of specifications of EDM Wire Cut Machines,  
we can make by orders from DK7725 TO DK77200 x 300

**DK7763**  
Big Taper WEDM



**DK77100**  
Long Travel WEDM



**DK7763**  
Small Taper WEDM



**DK7732**  
Small Taper WIRE CUT EDM



**DK7732**  
Big Taper WIRE CUT EDM



**DK7740**  
Small Taper WIRE CUT EDM



**DK7740**  
Big Taper WIRE CUT EDM



**DK7750**  
Small Taper WIRE CUT EDM



**DK7750**  
Big Taper WIRE CUT EDM



**DK7770/80**  
Small Taper WIRE CUT EDM



**DK7770/80**  
Big Taper WIRE CUT EDM





# B2008 MEDIUM SPEED WIRE CUT EDM

## 2008型中走丝线切割加工机(Equipped Step Motor Control)

### Machine Model

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### Specification and Parameters

Parameters / Specification	DK7725	DK7732	DK7740	DK7750	DK7763	DK7770	DK7780	DK77100	DK77100X150	DK77130X150	DK77160X160	DK77120X200
Table Travel Size X × Y(mm)	250x320	320x400	400x500	500x630	630x800	700x1000	800x1000	1000x1200	1000x1500	1300x1500	1600x1600	1200x2000
Table Dimension L × W (mm)	380x525	415x635	500x785	600x900	660x1100	760x1400	820x1400	1090x1600	1090x1700	1400x1900	1950x1950	1330x2440
Max. Cutting thickness(mm)	300 / 500	300 / 500	500	500	500 / 800	500 / 800	500 / 800	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000	500 / 800 / 1000
Max. Cutting Taper	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6° /60°	0° /6°	0° /6°	0° /6°	0° /6°
Roughness(um)	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	Ra(once cutting)≤2.5 Ra(Multi-cutting)≤1.5	≤2.5	≤2.5	≤2.5	≤2.5	≤2.5
Precision(mm)	≤0.015	≤0.015	≤0.015	≤0.015	≤0.015	≤0.015	≤0.015	≤0.02	≤0.02	≤0.02	≤0.02	≤0.02
Screw and guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway	High quality ball screw and linear guideway
Load of table(Kg)	300	400	500	800	3000	5000	5000	5000	6000	6000	6000	6000
Machine Weight(Kg)	1600	1700	2000	2300	4500	6500	6700	7000	7500	7800	10000	12000

### Universal Parameters

Max. machining speed(mm2/min)	150
Max. working current (A )	6
Wire diameter (mm)	Φ0.15 ~ Φ0.20
Working Liquid	Working solution BM-4,BM-2,BM-1
Working reservoir capacity (L)	56
Power supply	3N ~ 380V/50Hz
Power consumption (KVA)	3
Wire guide frame	adjustable



Head Company Exhibition Hall

### Controller Optional

Equipped Industrial  
Computer with LCD



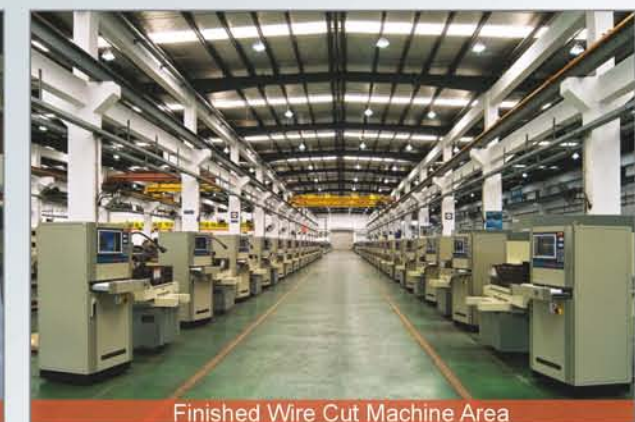
BMW2008 Medium Speed Controller  
with LCD and Industrial Computer



XKG-BM51 Singlechip Controller



Wire Cut Machine Detection



Finished Wire Cut Machine Area



# B

## BIG TRAVEL, MULTI SPINDLE PARTICULAR EDM

### 大行程、多头等多种专用定制机床

#### ► Long Travel、Multipoint Various Special Customized Machine

Our company has great ability of R&D and production, to fit different customers' requirements for machining, we develop and produce various size of long travel WEDM, such as the biggest travel wire cut machine in China: 2600x1600x1000、2000x1600x1000、1600x1600x800、1500x1300x500, and some specially multiple spindle machine , Special gear cutting machine BM1800(double spindle), these products features by High Speed, high precision , automatically, heavy bearing, professional, which have reached advanced level in China and in the world, our products are widely used in military and aerospace.

**DK7732**

Double-end CNC Wire-cut EDM



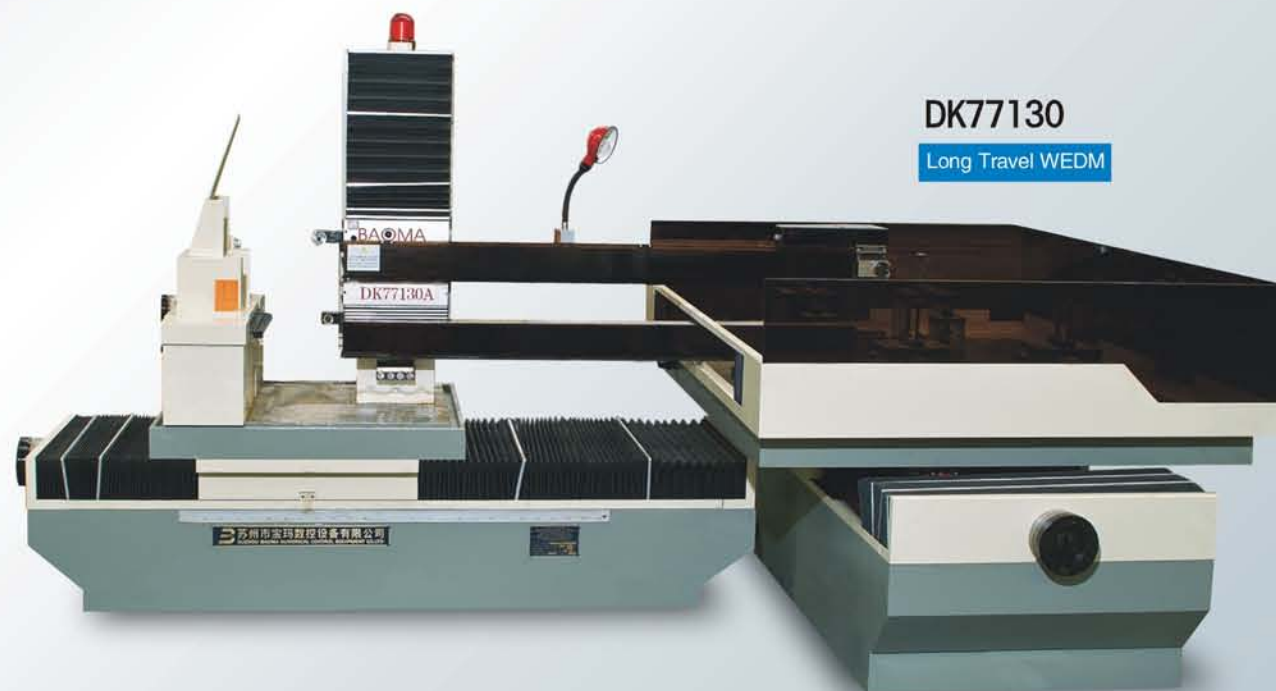
**DK77-H**

Eco-Friendly WEDM



**DK77130**

Long Travel WEDM



**DK77120**

Long Travel CLOSED-LOOP WEDM

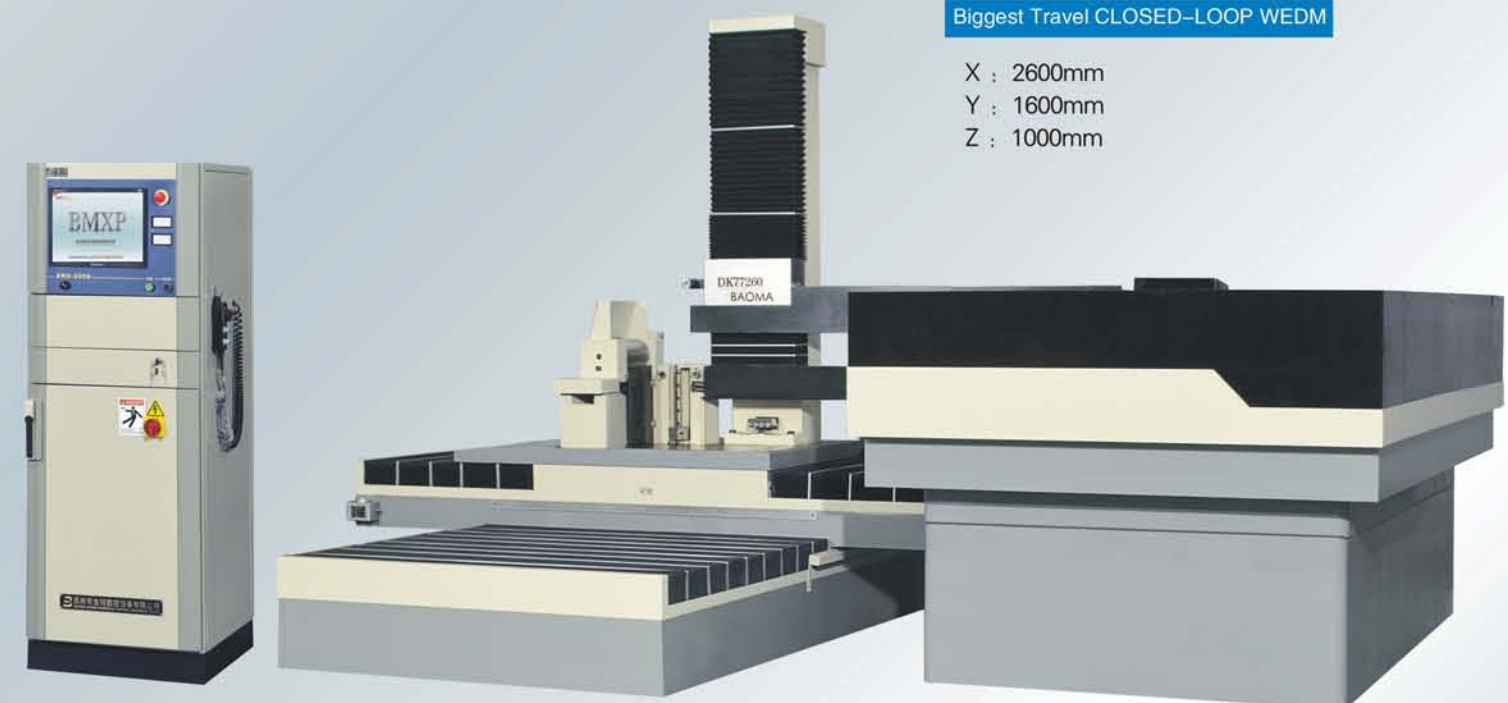
X : 2000mm  
Y : 1200mm  
Z : 1000mm



**DK77260**

Biggest Travel CLOSED-LOOP WEDM

X : 2600mm  
Y : 1600mm  
Z : 1000mm





M

MEDIUM SPEED WIRE CUT MACHINE

中走丝线切割加工机

Parts

NO.	Name	Specification	Manufacturer
01	X,Y ball screw		QiShan refrigerating equipment company Or Nanjing technology
02	X,Y precise guideway	Steel Linear guideway	Taiwan or Nanjing technology assembling company
03	Cast	Resin Sand Technology	SUZHOU STK FOUNDRY CO.,LTD
04	X,Y step motor	90BF006	Changzhou Baocheng motor electrical company
05	X,Y servo motor	AC servo	Japanese YASKAWA or Panasonic
06	U,V step motor	45BF005- II	Changzhou Baocheng motor electrical company
07	Driving controller	Transducer	American EMERSON
08	Controller	Industrial computer P4	Intel chipset
09	Relay		French Schneider Electric
10	Door switch		Jiuchuan electrical company
11	Transformer	250W/650W/1000W	WuxiJingyi
12	DRO( digital readout)	Two axis	Guangzhou SINO

Our Company reserves the right to change manufacturers when purchase the same quality parts



Precise Ball Screw



Import Transducer



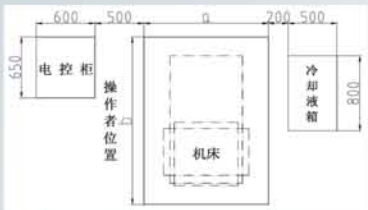
DRO Digital Readout

Standard Packing List

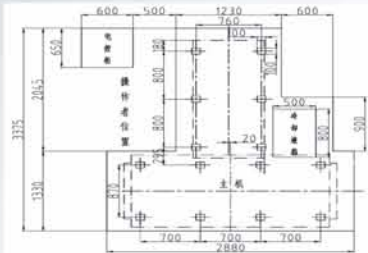
No	Item	Unit	Quantity
01	Main machine body	Set	1
02	Controller	Set	1
03	Computer	Set	1
04	Water tank	Set	1
05	Pump motor and cable line	Set	1
06	Water supply pipe	Piece	2
07	Power supply cable	Piece	1
08	Handle wheel	Piece	1
09	Wire tension tool	Piece	1
10	Strength magnet	Piece	4
11	Anchor bolts	Piece	4
12	Pedestal	Piece	4
13	Dismantle tool for wheels	Piece	1
14	Cross Screwdriver 6"	Piece	1
15	Straight Screwdriver 6"	Piece	1
16	Open end wrench 17"	Piece	1
17	Guide Pulley	Piece	2
18	Traverse Pulley	Piece	2

Installation Layout:

Item	Width(mm)	Length(mm)
DK7725	940	1516
DK7732	940	1516
DK7740	1070	1676
DK7750	1100	1960
DK7763	1400	2040
DK7770	1570	2085
DK7780	1630	2205



DK7725 — DK7780



DK77100