



**2011 New Product Launched**  
***TECO SERVO***

***JSDA<sup>+</sup> & JSDE<sup>+</sup>***

Henry Chung  
2011.Sept.



## **1. Model Name Explanation**

- **Servo Drive Power Range - JSDA+/JSDE+**
- **Servo Motor Power Range - JSMA**

## **2. Product Specification**

- **JSDA+ Specification**
- **Comparison between JSDA+ and JSDA**
- **JSDE+ Specification**
- **Comparison between JSDE+ and JSDE**

## **3. Field Applications**

- **Applications in Taiwan**
- **Applications in China**

## JSDAP、JSDEP series

**JS D AP - 75 A 3**

TECO AC Servo Series

Servo Pack

AP: A+ Series

EP: E+ Series

Power Supply:

□ : Single/Three Phase

3 : Three Phase

A: 200V

B: 400V

Output Power Capacity:

10/15/20/30/50/75/100/150/200/300

10: 100W

75: 3kW

15: 400W

100: 4.5kW

20: 750W

150: 5.6kW

30: 1kW

200: 7.5kW

50: 2kW

300: 15kW

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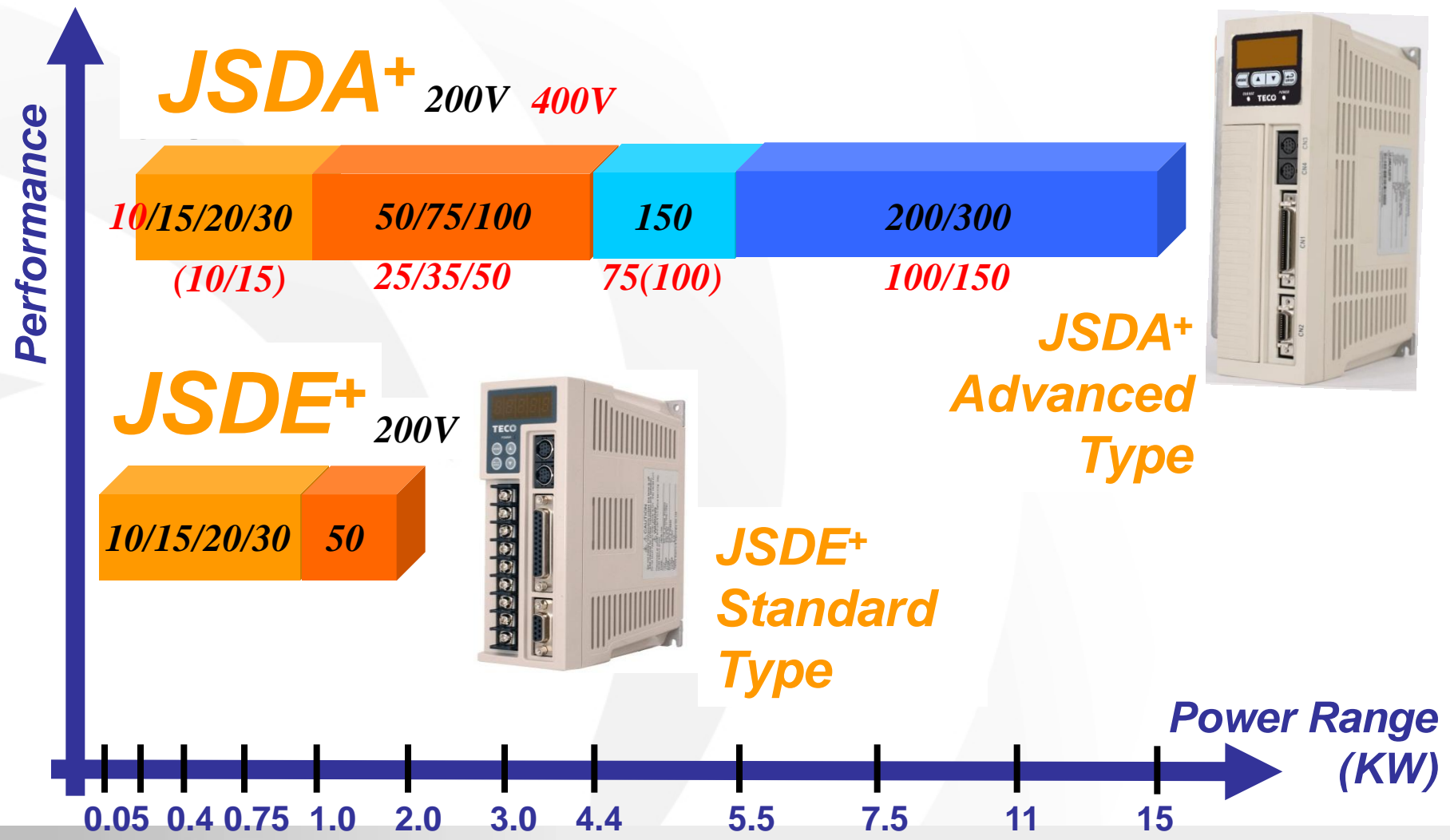
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# Servo Drive – Power Range

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# Servo Motor – Power Range

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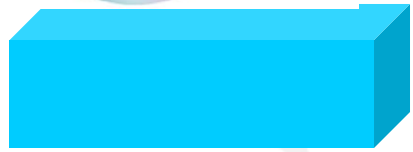
Inertia



**JSMA**

**PHH30/44/55/75**

**PMH30/44/55/75/110/150**

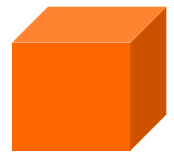


**PM□05/10/15/20/30 Middle inertia**

**ENCODER :**

**2500 / 8192 ppr**

**15 bit(ABS) / 17 bit(INC)**



**PLC03/08 Low inertia**



**PSCP5/01/04/08 Super low inertia**

Power Range  
(KW)



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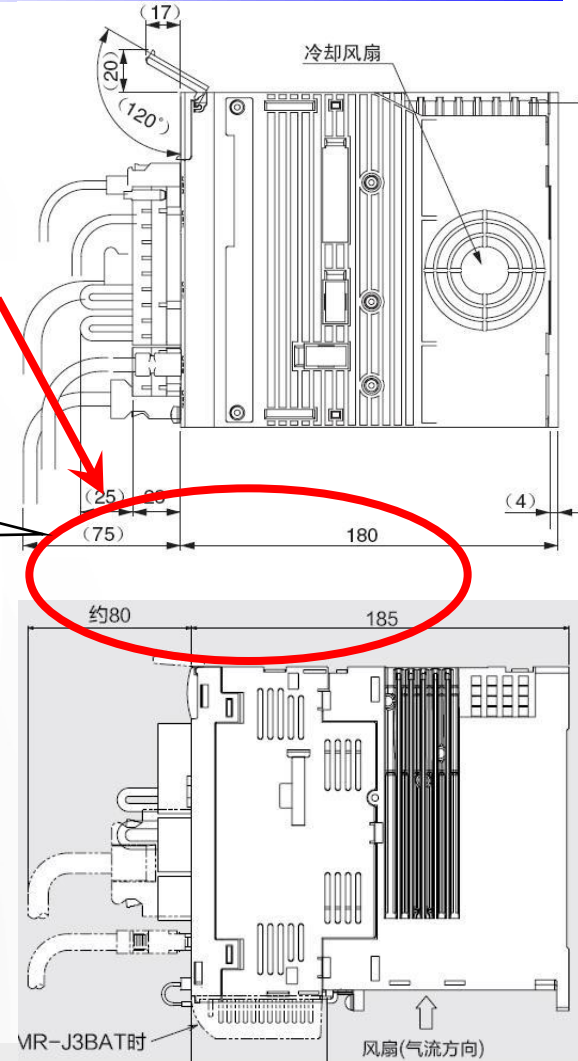
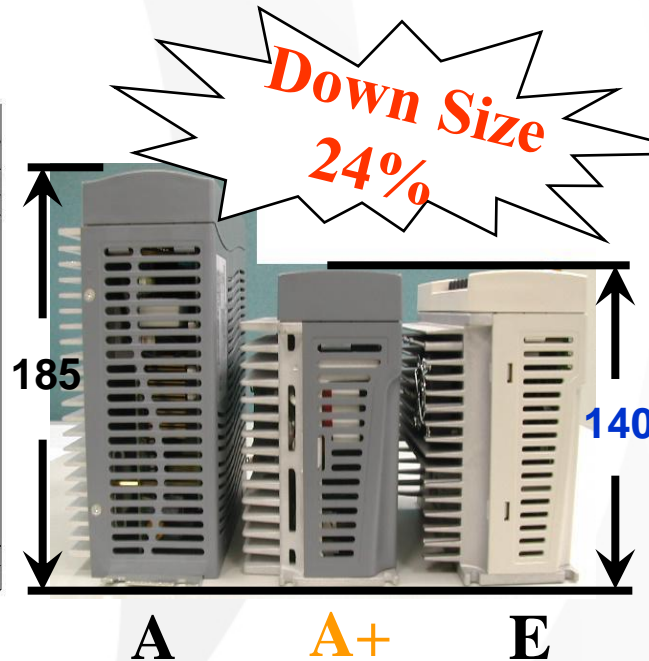
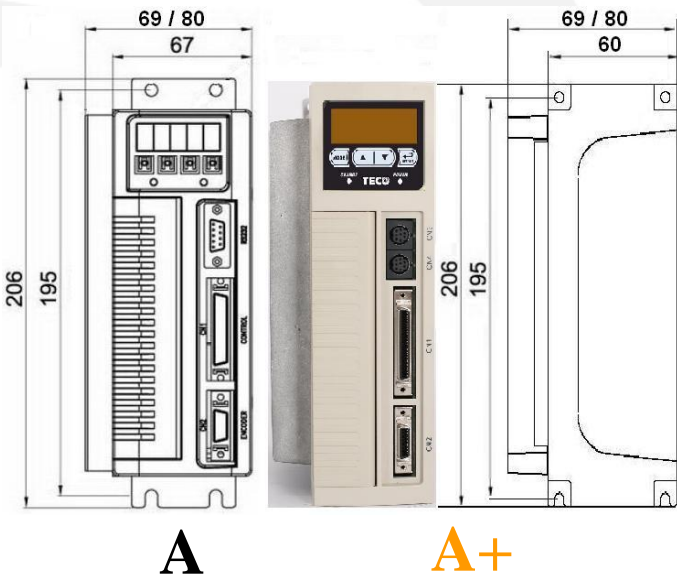
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- *JSDA+ Down Size 24% on Frame 1 (below 1kW)*

→ Lower the Depth of the drive greatly and makes building the cabinet easier



- **Drive model Auto-detecting function**
  - **15bit(abs) and 17bit(inc) encoder provides ID code to drive**
  - **Initialize and identify**

**Parameter  $On758.3 = H \underline{x} 0 0 0$**

**Where  $x$  Set as  $0$  → Enable Auto-detecting function (Default)**

**Set as  $1$  → Disable Auto-detecting function**

- **High performance**
  - *Dual Core Processor with 32bit MCU+ASIC*
  - *Frequency Characteristic 450 → 800Hz*
  - *14-bit A/D Converter Resolution*
- **User-friendly interface**
  - *Status Monitor*
  - *Fault Message*
  - *Displays indication and Diagnostics*
- **Built-in Speed/Torque/Position(32 step) control mode**
- **Control mode switching function**
- **Built-in RS422/485 Modbus protocol**

## Support Absolute and incremental Encoder

- Support 17bit incremental and 15bit absolute encoder
- **battery modules (JSSBAT)** for the absolute encoder.



## Frame1







# JSDA+ Specification

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Frame2



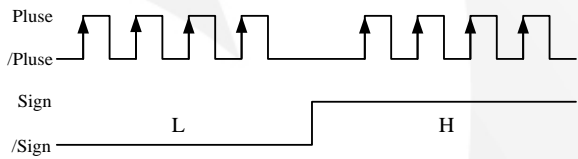
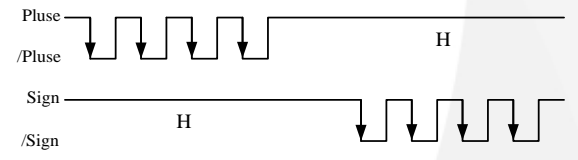
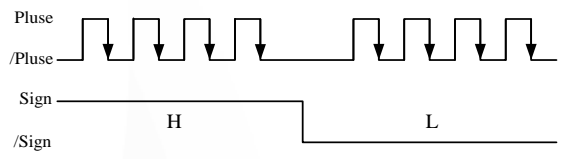
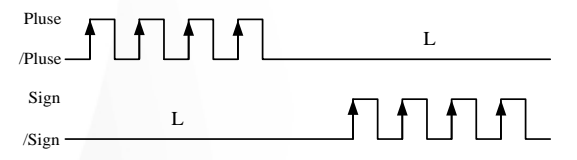
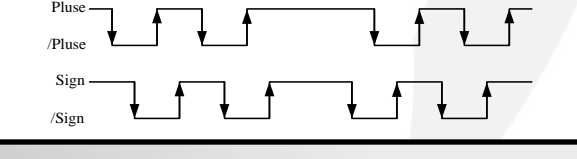

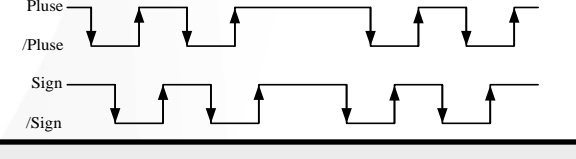

Frame3



Alarm code	Description
00	No alarm
01	Under voltage
02	Over voltage (Regeneration error)
03	Motor overload
04	Drive over current
05	Encoder ABZ signal error
06	Communication error
07	Multi-function contact setting error
08	Memory error

Alarm code	Description
09	Emergency stop
10	Motor over current
11	Position error
12	Motor over speed
13	Drive model setting error
14	Drive disable
15	Drive overheat
16	Battery error

- **Six difference types of the position pulse command**
  - **CCW and CW · Sign + Pulse · AB Phase**
- **Max. frequency of the position command**
  - **500K to 4M (high-speed differential signal) pps**

Pulse command type	Positive		Negative	
	Forward	Reverse	Forward	Reverse
• Pulse • Sign				
• CCW • CW				
• AB phase				

- **Built-in 32 step position control**
- **7 step programmable filter frequency in position pulse command mode(48KHz~6250KHz)**
- **Homing mode**
- **4 step electrical gear ratio→  $1/200 < A/B < 200$**

**Ex1. Encoder feedback: 8192ppr , and controller required 1000ppr  
Setting PN302 as 8192, and setting PN306 as 1000**

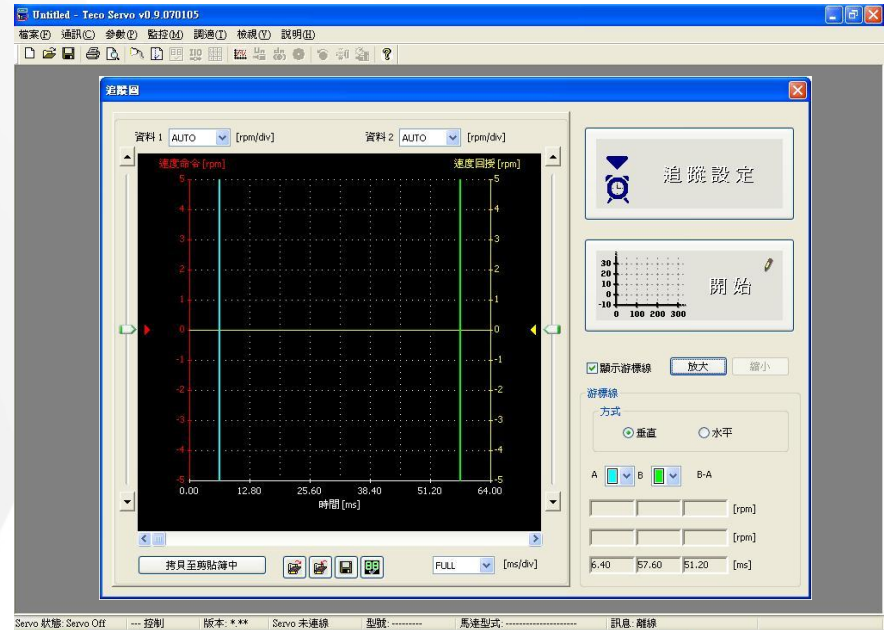
**Ex2. Encoder feedback: 2000ppr , and controller required 2500ppr  
Setting PN302 as 2000 , and setting PN306 as 2500**

- **Programmable I/O port :**
  - AI – 2 sets :  $\pm 10V$  input for Speed command/Torque limit
  - AO – 2 sets :  $\pm 10V$  output for 12 sorts monitor
  - DI – 12 sets : NPN/PNP programmable 31 functions
  - DO – 8 sets : NPN/PNP programmable 14 functions
- **Built-in 24V、 $\pm 15V$**
- **Frequency Dividing Ratio**

*Ex. Encoder feedback: 2000ppr, and controller required 1000ppr*

*→ JSDAP/JSDEP : Cn005 set as 1000*

- **Notch Filter : Least mechanical vibration**
- **TECO provides PC-Software → TECO SERVO**
- **PC-Software function :**





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- **Applications in Taiwan**
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		JSDA		JSDA+
<b>Main circuit R、S、T</b>		Single/Three phase	=	Single/Three phase
<b>Control circuit r、s</b>		Single phase	=	Single phase
<b>Braking function</b>		<ul style="list-style-type: none"> <li>• Built-in regenerative brake</li> <li>• Built-in dynamic brake</li> </ul>	=	<ul style="list-style-type: none"> <li>• Built-in regenerative brake</li> <li>• Built-in dynamic brake</li> </ul>
<b>Digital I/O</b>	<b>DI</b>	13 ports (NPN/PNP)	>	12 ports (NPN/PNP)
	<b>DO</b>	8 ports (NPN)	<	8 ports (NPN/ <b>PNP</b> )
<b>Analog I/O</b>	<b>AI</b>	2 ports (12/10 bits)	<	2 ports ( <b>14/12 bits</b> )
	<b>AO</b>	2 ports	=	2 ports
<b>Encoder</b>		2500 / 8192ppr	<	<b>15bit / 17bit</b>
<b>Encoder output</b>		Set as controller required directly	<	Set as controller required directly, Adjustable phase angle
<b>Communication port</b>		RS232/485	=	RS232/485
<b>Keypad</b>		Built-in 5 digit display	=	Built-in 5 digit display
<b>Frequency characteristic</b>		450Hz	<	<b>800Hz</b>
<b>ABS Function</b>		N.A.	<	<b>Yes</b>
<b>Internal position command</b>		16 step	<	<b>32 step</b>

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- **Support 2500/8192 ppr incremental encoder**
- **Built-in Speed/Torque/Position(32 step) control mode (Through DI to switch)**
- **Frequency Characteristic → 300 to 600Hz**
- **14 bits A/D Converter Resolution**
- **Frequency Dividing Ratio**
- **32 step internal position command**

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		JSDE		JSDEP
<b>Main circuit R、S、T</b>		Single/Three phase	=	Single/Three phase
<b>Control circuit r、s</b>		N.A.	=	N.A.
<b>Braking function</b>		<ul style="list-style-type: none"> <li>• Built-in regenerative brake</li> <li>• Optional braking resistor</li> </ul>	=	<ul style="list-style-type: none"> <li>• Built-in regenerative brake</li> <li>• Optional braking resistor</li> </ul>
<b>Digital I/O</b>	<b>DI</b>	6 points (NPN/PNP)	=	6 points (NPN/PNP)
	<b>DO</b>	3 points (NPN)	=	3 points (NPN)
<b>Analog I/O</b>	<b>AI</b>	2 points (12/10 bits)	<	2 points ( <b>14/12 bits</b> )
	<b>AO</b>	N.A.	=	N.A.
<b>Encoder</b>		2500 / (8192)ppr	<	2500 / 8192ppr
<b>Encoder output</b>		Set as controller required directly	<	Set as controller required directly, Adjustable phase angle
<b>Communication port</b>		RS232/485	=	RS232/485
<b>Keypad</b>		Built-in 5 digit display	=	Built-in 5 digit display
<b>Frequency characteristic</b>		300Hz	<	<b>600Hz</b>
<b>ABS Function</b>		N.A.	=	N.A.
<b>Internal position command</b>		16 step	<	<b>32 step</b>

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# TECO Servo Applications

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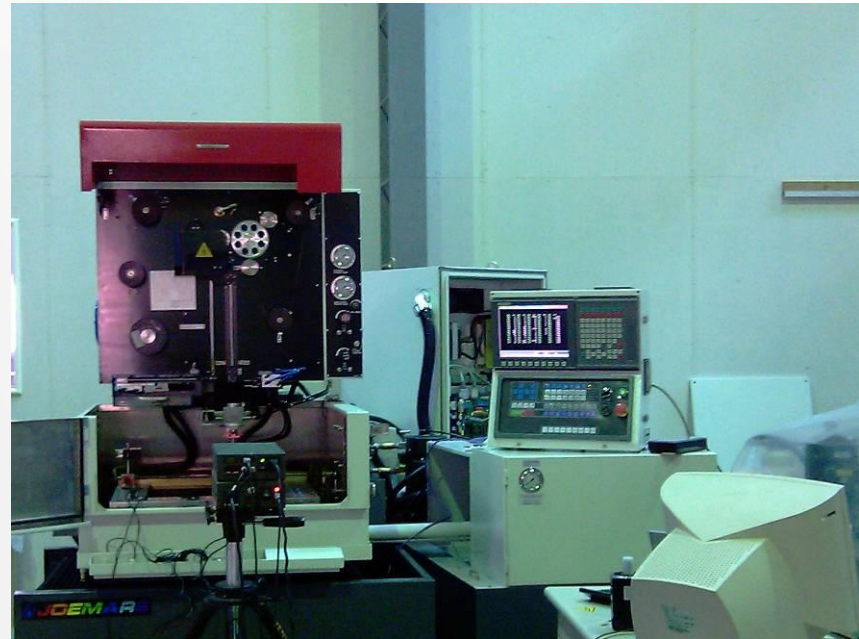
Industries	Application
Metal Cutting Machine & CNC	CNC Electric Discharge Machines 、 CNC Wire Cut Machines 、 CNC Engraving Machines (Metal 、 Wood 、 Glasses 、 Plastic) 、 CNC Grinding Machines (Surface 、 Cylindrical-external) 、 CNC Lathes 、 CNC Lathes With Milling Turret 、 CNC Milling Machines 、 CNC Drilling Machines 、 Tool Turret For Lathe 、 Index Table
Industrial Sewing Machine & Textile Machine	Industrial Sewing Machines 、 Computerized Flat Knitting Machines 、 Lace and Band Crochet Machines 、 Circular Knitting Machines 、 Spinning Frame 、 Hosiery Machine
Plastic Machine	All-Electric Plastic Injection Molding Machines 、 Hybrid Plastic Injection Molding Machines 、 Pet Stretch Blow Molding Machines 、 Plastic Blow Molding Machine 、 Plastic Bag Sealing and Cutting Machine
Electrical Component Equipment	PCB Drilling Machine 、 PCB Routing Machine 、 PCB Measuring Machine 、 LCD Panel Test Machine 、 LED Die Bonding 、 Wire Bonding 、 Full Automatic Dispensing System
Automation Equipment	Robot For Injection Molding Machine 、 Automatic Feeding Equipment for Rod 、 Automatic Winding Machines
Printing and binding machine	PCB Printing Machine 、 Automatic Labeling Machines



# Wire Cutting Machine

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- Controller : PC-Based system
- Control mode : **position control**
- Drive : JSDAP-15A
- Motor : JSMA-PSC08A5





# Wire Cutting Machine

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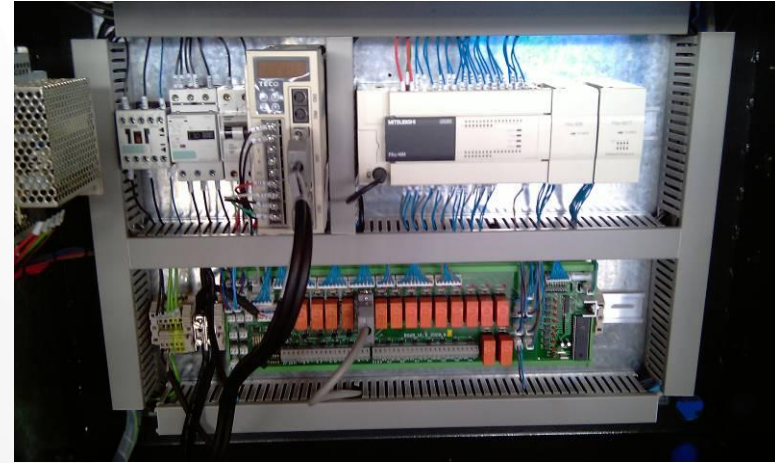
- Controller : PC-Based system
- Control mode : **speed control**
- Drive : JSDEP-15A
- Motor : JSMA-PSC04AB





# Bar Feeder Machine

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- Controller : Mitsubishi PLC with analog module
- Control mode : **Torque control**
- Drive : JSDEP-15A
- Motor : JSMA-PSC04AB

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# Robot

Location : Shenzhen

Replace : Sanyo

Joint	SERVO Motor	Drive Model
J1	750W 3000RPM	30A ( with battery )
J2	750W 3000RPM (with brake)	30A ( with battery )
J3	400W 3000RPM (with brake)	20A ( with battery )
J4	100W 3000RPM	15A ( with battery )
J5	100W 3000RPM (with brake)	15A ( with battery )
J6	100W 3000RPM	15A ( with battery )

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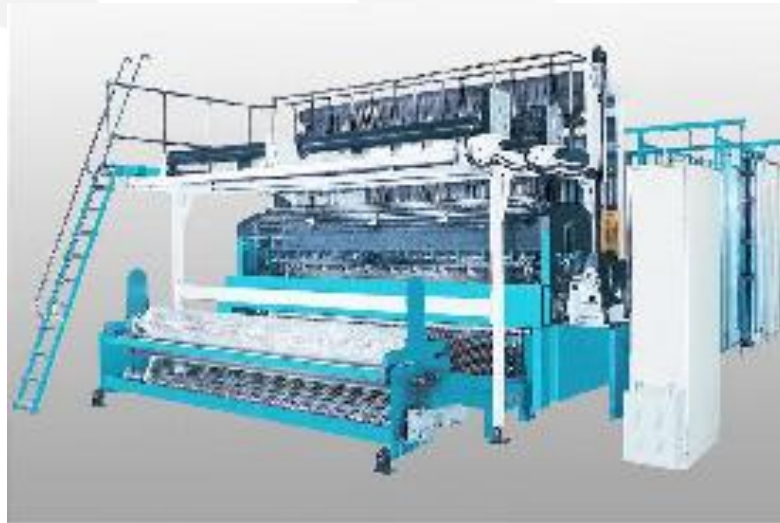




# Warp Knitting Machine

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**Location : Changzhou**  
**Replace : Mitsubish J3**  
**Motor : 400W&750W ABS(6-axis)**





# Capacitor Winding Machine

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**Location : Shenzhen**

**Replace : Panasonic A5**

**Motor : 400W with 2500 ppr incremental encoder**





# LED glue dispenser

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**Location : Shenzhen**

**Replace : Panasonic A5, Mitsubish MR-E**

**Motor : 100W 2500 ppr INC**





# Plasma Welding Machine

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**Location : Tianjin**

**Replace : Panasonic A4**

**Motor : 750W(X-axis,Y-axis), 400W(Z-axis)**





***Q&A***  
***Thank You!!***