

# Electro Press JP Series 4

JP Series 4 Electro Presses

High-Precision Servo Presses

0.5kN · 1kN · 2kN · 5kN · 10kN · 15kN  
20kN · 30kN · 50kN · 80kN · 120kN



# JP Series 4 Electro Press

## Main Features

### ■ A Variety of Models to Satisfy All Needs

Stand-alone, head, and unit types with a pressing capacity ranging from 0.5kN to 120kN are available for diverse needs in a variety of fields. In addition to the standard stroke, short and long strokes are also available. \*There are two installation methods available: side mounting or flange vertical mounting suitable for in-line production. (\*Optional depending on the model)

### ■ Clean, Energy-Saving, and Safe

Driven by the AC servo motor, the Electro Press provides a quiet and clean work environment. Consuming 80% to 90% less energy compared to pneumatic and hydraulic presses, the Electro Press can contribute to a total cost reduction as well as environmental conservation (ISO14000). To ensure safety, all Electro Presses come equipped with an area sensor (light curtain) terminal as well as a fail-safe circuit.

### ■ High Accuracy and High Function

The AC servo motor, high precision ball screw, and load cell deliver high accuracy and high function.

### ■ Various Pressing Modes & Functions

Specialized processes can easily be handled with two- or multiple-section pressing (user-programmable via a teaching pendant) and a variety of operation modes including "Constant Speed · Set Stop Position", "Constant Speed · Set Distance Mode", and more. With precise positioning and adjustment capabilities, there is no need for making or adjusting high precision dies or jigs when changing set-ups or starting up new production lines. Additionally the impact on the die is very low. The Electro Press can speed up your operations and improve productivity.

### ■ Load and Position Traceability & Complete Quality Control

The Electro Press has a variety of sensor functions for load, position, distance, and speed. In the Sensor Load mode, the sampling function checks many load values including Peak, Bottom, and Differential. The Press can be connected directly to a PC through the external interface, RS-232C; thus, all the data such as pressure curves and work results can be stored and organized in a PC (using optional software). Also, the pressure curve display on the LCD on the Electro Press or monitor box allows visual checks during operation. Furthermore, the optional load cell output (analogue data) and motor encoder output (pulse output) are available for real-time transmission of position and load data to external devices. With these functions, the Electro Press ensures traceability of products, makes quality control easier, and supports your compliance with ISO9000.

### ■ Muting Function

The stand-alone Electro Press is also available in special specifications with a muting function (which outputs a signal to deactivate the area sensor when the ram is ascending or in the stand-by position) to create a more efficient work environment.

### ■ Large LCD Screen & User-Friendly Operation

An interactive operation system is employed with the switch panel and easily-viewable large LCD. Display languages (Japanese and other major languages) and units of measure (mm/inch) are changeable.

### ■ Self Diagnosis Function

In case of a problem, an error message will be displayed so you can quickly locate and react to the problem.

## Model Name



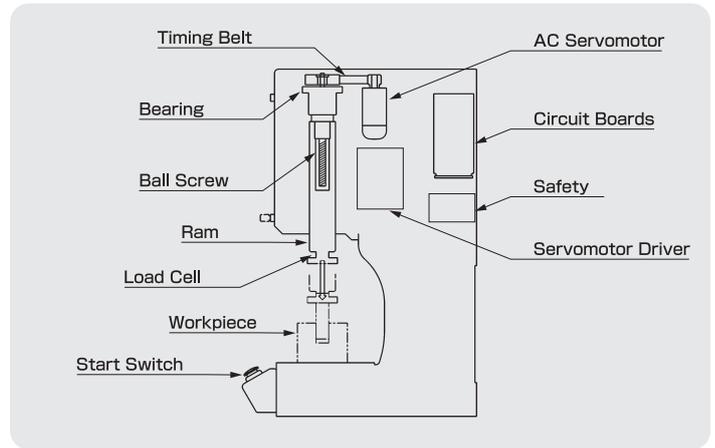
JP U - 100 4 CL e.g.) JPU-1004CL: ①Unit Type  
②10kN Pressing Capacity  
③Clean Room Type

①		② Pressing Capacity				③	
Nil	Stand-Alone Type	05	0.5kN	200	20kN	Nil	Standard
H	Head Type	10	1kN	300	30kN	L	Long Stroke
U	Unit Type	20	2kN	500	50kN	S	Short Stroke
B	Control Box	50	5kN	800	80kN	CL	Clean Room
		100	10kN	1200	120kN		
		150	15kN				

## Structure

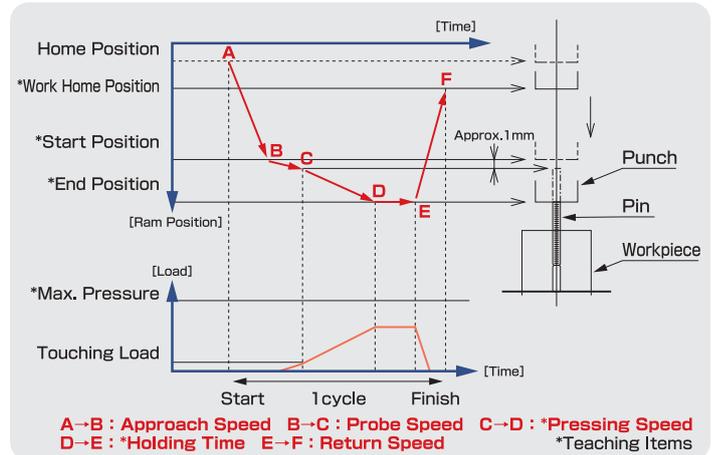
The Electro Press is driven by an AC servo motor. The rotation force produced by the AC servo motor is adjusted to a vertical direction by a high-precision ball screw; then the Press utilizes the power to apply pressure to a workpiece. The Electro Press also controls pressure and position by a load cell and an encoder.

The Electro Press is JANOME's original press machine. Unlike other types of press machines such as mechanical and hydraulic presses, it precisely controls pressure, stop position, pressing speed, and holding time according to your exact specifications.



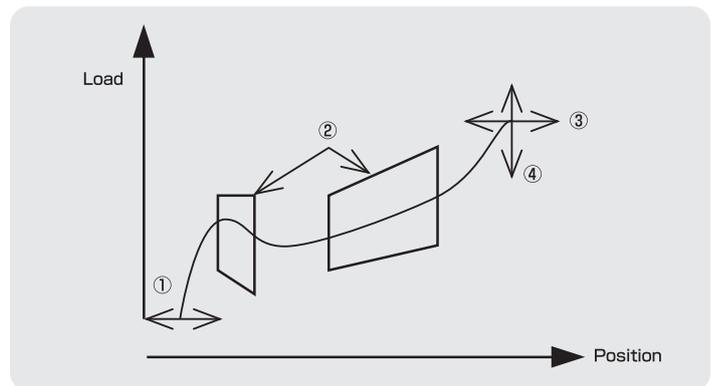
## Basic Operation

- Values can be registered interactively in the teaching mode.
- Turn the select key switch to RUN mode and press the start switches; then the Electro Press begins operation as registered. (See the diagram on the right.)
- The Electro Press can be started through an external I/O using a sequencer by turning the select key switch to External RUN mode.
- The EDIT function enables multiple-section settings to control the ram speed and stop position while descending.
- The differential function enables the Electro Press to sample the load just before a sharp increase in pressure and checks that the sampled load is within the desired range.



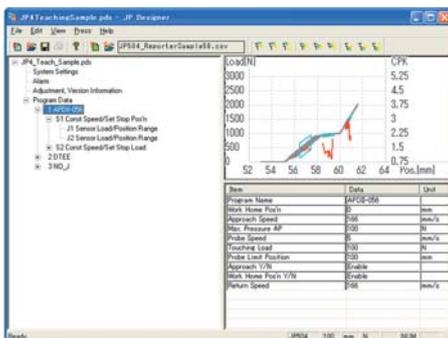
## Judgment Functions

- ① Position judgment function at the start position.
- ② Load judgment and sampling load function (peak, differential, and other load values) within the desired range.
- ③④ Load and position judgment function at the end position.

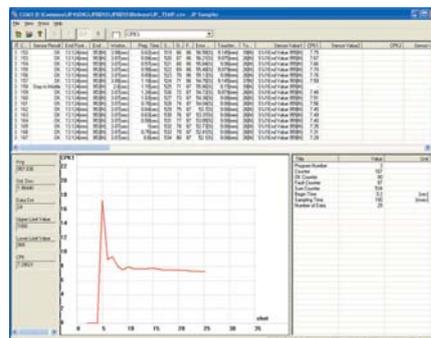


## PC Software (JP TaS System)

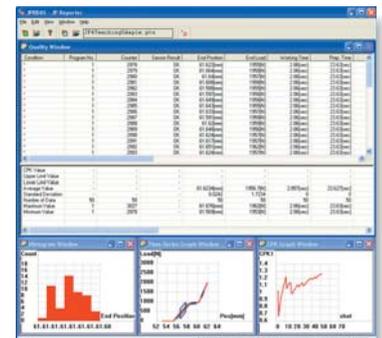
- **JP Designer**
  - Allows teaching data creation and sensor mode settings. Also retrieves the data from the Electro Press onto a PC for changing settings, making backups, or printing.
- **JP Sampler**
  - Retrieves quality and time series data from the Electro Press at each cycle and saves it onto a PC as a sampling file (text format).
- **JP Reporter**
  - Analyzes and reports on CPK or results displaying the data retrieved from the Electro Press using the JP Sampler.



JP Designer



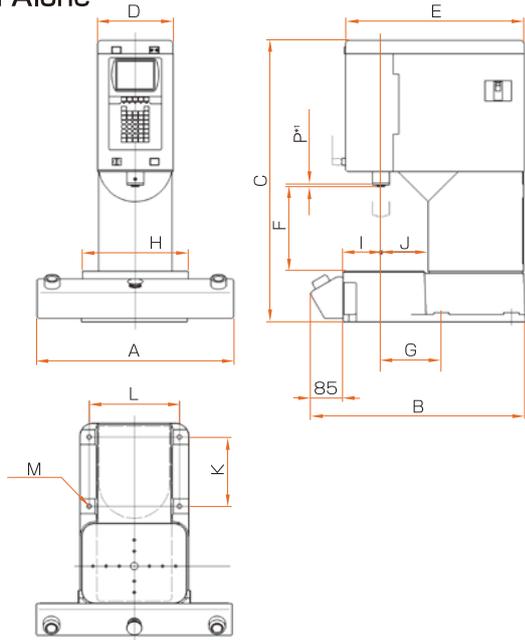
JP Sampler



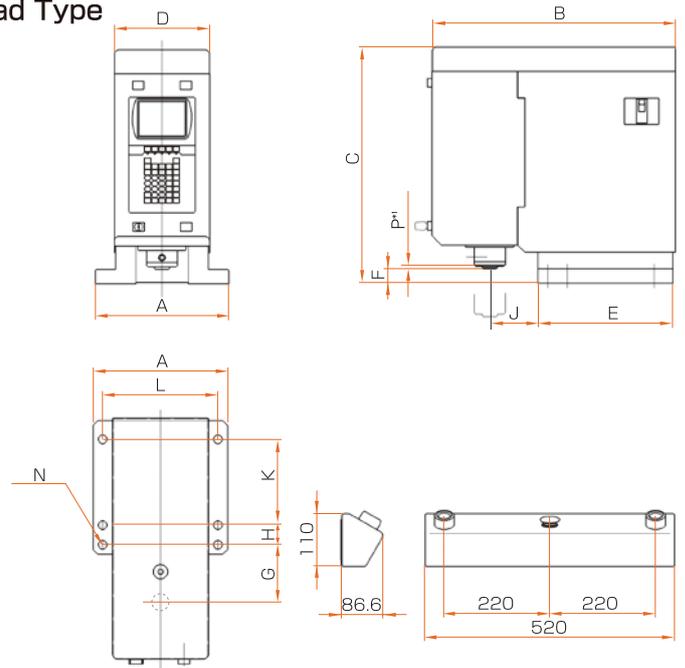
JP Reporter

# External Dimensions 0.5kN·1kN·2kN·5kN·10kN·15kN

## Stand-Alone Type

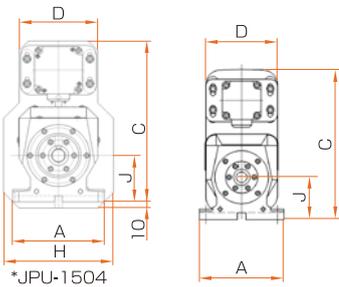


## Head Type

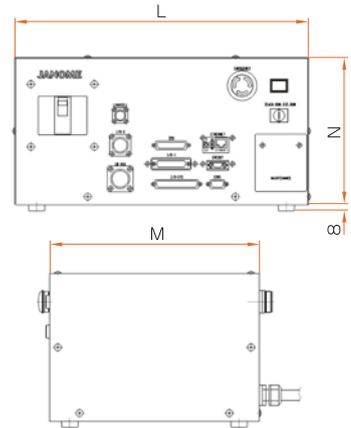
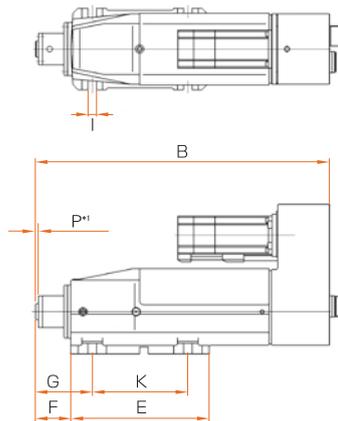


## Unit Type

### Body



### Control Box



[ ] : Clean-room type ( ) : Long-stroke type

Unit: mm

Stand-Alone	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*
JP-054,104 204	520	567	750 [755]	200	472	225	160	280 [284]	100 [102]	125	185	240	4-φ12	—	5
JP-504,1004	520	585	875 (950) [880]	200	505	275	160	325 [329]	115 [117]	130	185	230	4-φ12	—	5
JP-1504	520	585	875 (950)	200	505	275	160	325	115	130	185	230	4-φ12	—	4

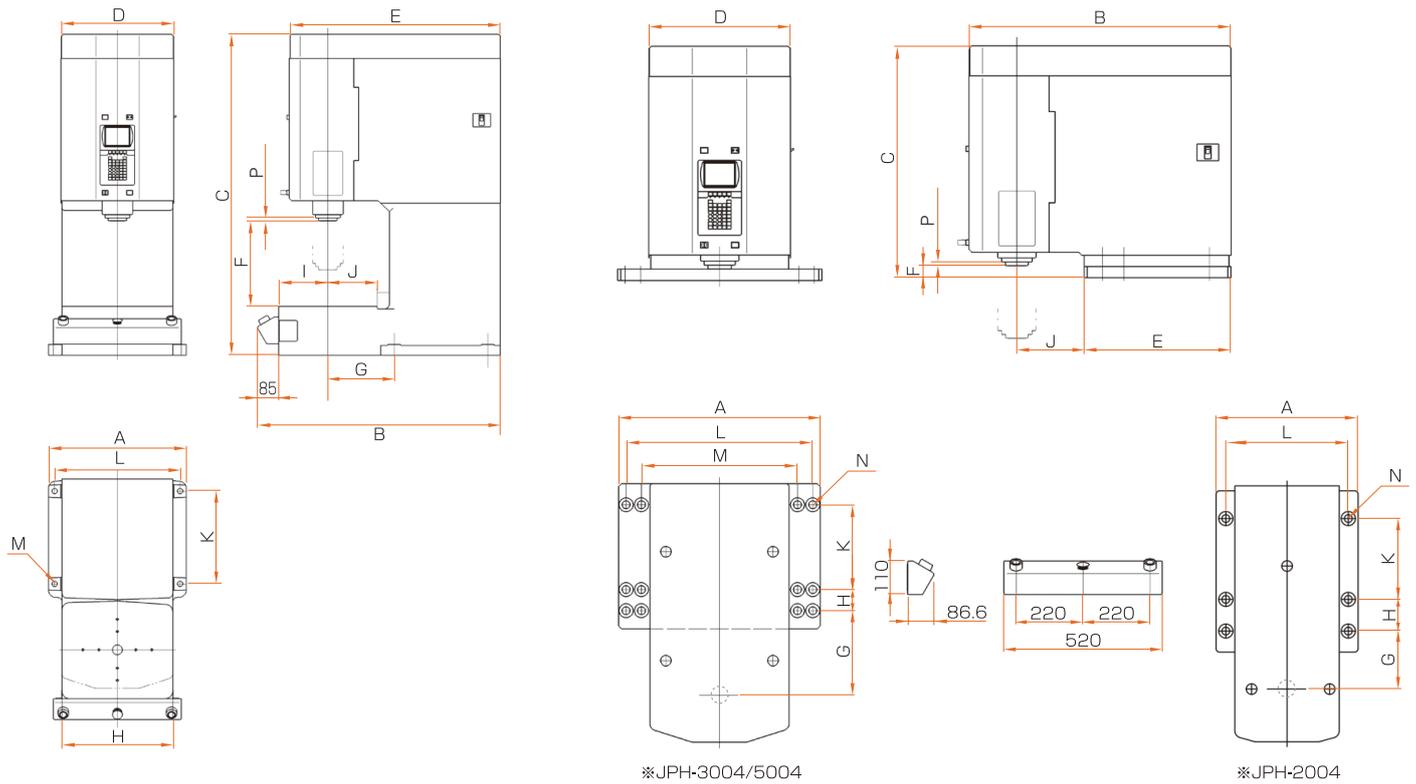
Head	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*
JPH-054,104 204	282	472	470 [475]	200	255	80	152	—	—	124	180	240	—	4-φ18	5
JPH-504,1004	280	505	495 (570) [500]	200	280	30	120	41	—	100	180	240	—	6-φ18	5
JPH-1504	280	505	495 (570)	200	280	30	120	41	—	100	180	240	—	6-φ18	4

Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*
JPU-054,104 204	118	415	213	100	195	50	80	—	12	60	135	398	280	198	5
JPU-504,1004	146	495 (570)	250	125	300 (375)	50	80	—	13	75	200 (275)	398	280	198	5
JPU-1504*	146	497 (570)	260	125	300 (375)	50	80	175	13	75	200 (275)	398	280	198	4

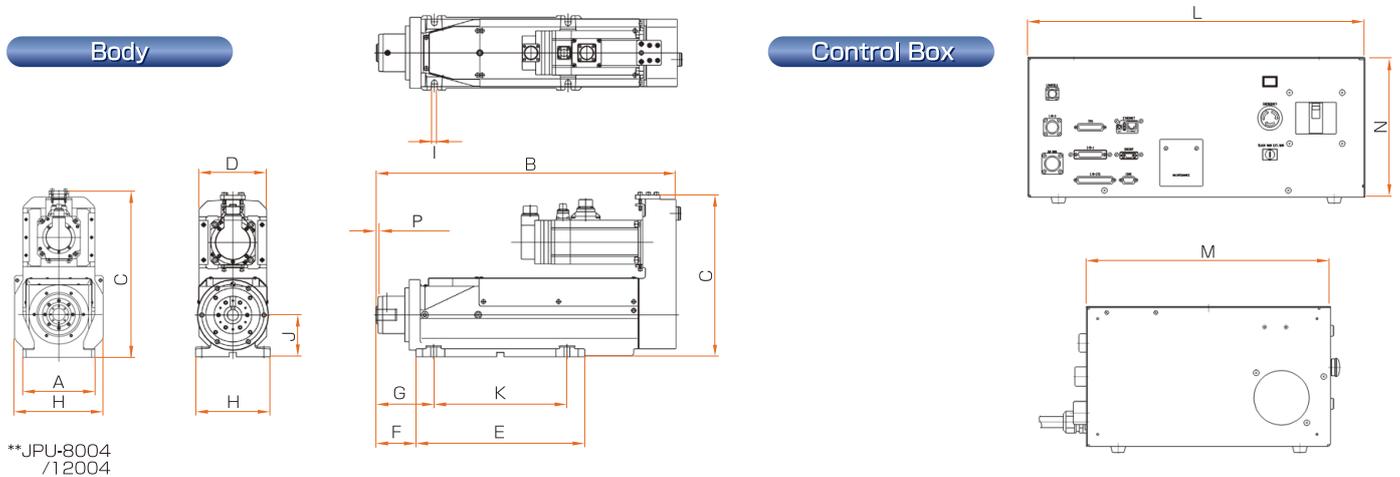
\*1 Ram retraction amount during homing (reference values)  
● Please contact us for more details.

■ Stand-Alone Type

■ Head Type



■ Unit Type



[ ] : Clean-room type ( ) : Long-stroke type

Unit: mm

Stand-Alone	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*1
JP-2004	520	813	1,236	298	729	350	195	376	150	150	319	336	4-φ18	—	10
JP-3004 JP-5004	560	985	1,315	458	858	350	270	450 [454]	200 [202]	200 [202]	380	510	4-φ22	—	10

Head	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*1
JPH-2004	400	729	726	298	459	10	165	90	—	105	230	345	—	6-φ22	10
JPH-3004, 5004	660	858	765	458	480	—	280	70	—	220	280	610	510	12-φ26	10

Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P*1
JPU-2004	—	675 (955)	367	152	380 (580)	90	130	168	13	95	300 (500)	398	330	198	10
JPU-3004 JPU-5004	—	775 (1,065)	508	220	435 (620/610)	100	150	220 (230)	18	132	340 (500)	550	398	230	10
JPU-8004**	220	775 (1,065)	512	220	435 (610)	100	150	270	18	132	340 (500)	550	398	230	7
JPU-12004**	260	935	580	270	530	110	165	290	22	150	420	550	550	230	15

\*1 Ram retraction amount during homing (reference values)

● Please contact us for more details.

## Specifications

Item		Model	JP/JPH/JPU-054 (CL)	JP/JPH/JPU-104 (CL)	JP/JPH/JPU-204 (CL)	JP/JPH/JPU-504 (L/CL)	JP/JPH/JPU-1004 (L/CL) JPU-1004S
		Pressing Capacity*1	Maximum		0.5kN	1kN	2kN
Setting Range			5N - 500N	10N - 1kN	20N - 2kN	50N - 5kN	100N - 10kN
Increments			1N	1N	1N	1N	1N
Minimum Sensing Capacity			1N	2N	4N	10N	20N
Ram Stroke	Maximum		80mm	80mm	80mm	100mm (Long-stroke:150mm)	100mm (Long-stroke:150mm) (Unit short-stroke:25mm)
	Increments		0.001mm	0.001mm	0.001mm	0.001mm	0.001mm
Ram Speed	Pressing		35mm/sec	35mm/sec	35mm/sec	35mm/sec	35mm/sec
	Approaching·Ascending (Max)*2		166mm/sec	166mm/sec	166mm/sec	166mm/sec	166mm/sec
	Increments		0.01mm/sec	0.01mm/sec	0.01mm/sec	0.01mm/sec	0.01mm/sec
Holding Time	Maximum (At Max.Load)*3		999.9sec	999.9sec	999.9sec	999.9sec	50sec
	Setting Range		0 - 999.9sec	0 - 999.9sec	0 - 999.9sec	0 - 999.9sec	0 - 999.9sec
	Increments		0.1sec	0.1sec	0.1sec	0.1sec	0.1sec
Repeatability*4			±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm
Load Precision*1			50N or more ±5N	100N or more ±10N	200N or more ±20N	500N or more ±50N	1kN or more ±100N
Max .Jig Weight Hanging on Ram Tip			0.5kg	1kg	2kg	5kg	10kg
Power Consumption			300W	300W	300W	850W	850W
Power Supply	Three-Phase		180 - 250V	180 - 250V	180 - 250V	180 - 250V	180 - 250V
	Single-Phase						
Dimensions W×D×H (Not including protrusion parts)	Stand-Alone Type		520×567×750mm			520×585×875mm (Long:520×585×950mm)	
	Head Type		282×472×470mm			280×505×495mm (Long:280×505×570mm)	
	Unit Type*5		118×415×213mm			146×495×250mm (Long:146×570×250mm) (Short:146×420×250mm)	
	Control Box		398×280×198mm			398×280×198mm	
Weight	Stand-Alone Type		100kg			160kg (Long:170kg)	
	Head Type		80kg			100kg (Long:110kg)	
	Unit Type		17kg			35kg (Long:42kg) (Short:32kg)	
	Control Box		13kg			13kg	

## Common Specifications

Common Specifications		
Operation Mode	Constant Speed - Set Stop Position/Constant Speed - Set Stop Load/Constant Speed - Set Distance Mode Constant Load - Timed Pressure/Constant Load - Set Stop Position/Constant Load - Set Distance Mode 2-Section Pressing (PP, DD, LL, PL, DL, LP, LD) 3 to 100-Section Pressing (User-oriented settings using a teaching pendant)	
Sensor Mode	Sensor Position - At Start/Sensor Load - Position Range/Sensor Load - In Distance Range Sampling (Load) - Position Range/Sampling (Load) - In Distance Range *There are 7 load sampling items: Peak, Bottom, Differential (N/sec), Peak to Peak, Top, Valley, and Differential 2 (N/mm). Sensor Speed - In Time Range/Sensor Speed - Position Range/Sensor Speed - In Distance Range Sampling (Speed) - In Time Range/Sampling (Speed) - Position Range/Sampling (Speed) - In Distance Range *There are 6 speed sampling items: Peak, Bottom, Differential, Peak to Peak, Top, and Valley. Sensor Distance - At End/Sensor Position - At End/Sensor Load - At End/Sensor Time - At End/Sensor Load - Holding	
Encoder	Incremental or Absolute (Optional)	
Screen Display	Unit of Pressure/Measure	N, kgf, Lbf/mm, inch
	Display Language	Japanese, English, French, Spanish, Italian, German, Korean, Chinese (Simplified characters only)
External Interface*6	RS-232C 1ch (9-pin male connector) COM1	
External Input/Output	I/O-SYS Inputs 17, Outputs 16 (37-pin female connector) *NPN/PNP can be chosen before shipment.	
Power Switch for I/O	Built-in 24VDC Power Supply (Available for I/O control up to 2A) Switching the internal/external power supply can be done using the dip switch on the maintenance panel. (Factory default: external power supply)	
Number of Programs	100 programs	
Program Providing System	Installed before shipment.To upgrade the program, download a new one from a PC to the internal flash ROM via the COM1.	
Drive & Control Method	AC Servomotor, 32-bit CPU	
Working Ambience	Ambient Temperature	0 - 40°C
	Relative Humidity	20 - 90%, Non-condensing
	Ingress Protection (IP) Rating	IP40

Item		Model	JP/JPH/JPU-1504 (L)	JP/JPH/JPU-2004 JPU-2004 (L/CL)	JP/JPH/JPU-3004 (CL) JPU-3004L	JP/JPH/JPU-5004 (CL) JPU-5004L	JPU-8004 (L/CL)	JPU-12004
Pressing Capacity*	Maximum		15kN	20kN	30kN	50kN	80kN	120kN
	Setting Range		150N - 15kN	200N - 20kN	300N - 30kN	500N - 50kN	800N - 80kN	1.2kN - 120kN
	Increments		1N	1N	10N	10N	10N	10N
	Minimum Sensing Capacity		30N	40N	60N	100N	160N	240N
Ram Stroke	Maximum		100mm (Long-stroke:150mm)	200mm (Unit Long Stroke:400mm)	200mm (Unit Long-Stroke:400mm)	200mm (Unit Long-Stroke:400mm)	200mm (Long-Stroke:400mm)	200mm
	Increments		0.001mm	0.001mm	0.001mm	0.001mm	0.001mm	0.001mm
Ram Speed	Pressing		20mm/sec	35mm/sec	35mm/sec	35mm/sec	35mm/sec	35mm/sec
	Approaching/Ascending(Max.)*5		100mm/sec	200mm/sec(166mm/sec)	300mm/sec(200mm/sec)	300mm/sec(200mm/sec)	200mm/sec(133mm/sec)	200mm/sec(150mm/sec)
	Increments		0.01mm/sec	0.01mm/sec	0.01mm/sec	0.01mm/sec	0.01mm/sec	0.01mm/sec
Holding Time	Maximum (At Max.Load)*5		60sec	15sec	10sec	10sec	10sec	20sec
	Setting Range		0 - 999.9sec	0 - 999.9sec	0 - 999.9sec	0 - 999.9sec	0 - 999.9sec	0 - 999.9sec
	Increments		0.1sec	0.1sec	0.1sec	0.1sec	0.1sec	0.1sec
Repeatability*4			±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm
Load Precision*1			1.5kN or more ±150N	2kN or more ±200N	3kN or more ±300N	5kN or more ±500N	8kN or more ±800N	12kN or more ±1.2kN
Max.Jig Weight Hanging on Ram Tip			15kg	20kg	90kg	100kg	100kg	120kg
Power Consumption			850W	1.6kW	3kW	5kW	5kW	11kW
Power Supply	Three-Phase		180 - 250V	180 - 250V	180 - 250V	180 - 250V	180 - 250V	180 - 250V
	Single-Phase			-	-	-	-	-
Dimensions W×D×H (Not including protrusion parts)	Stand-Alone Type		520×585×875mm (Long:520×585×950mm)	520×813×1,236mm	560×985×1,315mm		-	-
	Head Type		280×505×495mm (Long:280×505×570mm)	400×729×726mm	660×858×765mm		-	-
	Unit Type*5		175×497×270mm (Long:175×572×270mm)	168×675×367mm (Long:168×955×367mm)	220×775×508mm (Long:230×1,065×508mm)		270×775×510mm (Long:270×1,065×512mm)	290×935×580mm
	Control Box		398×280×198mm	398×330×198mm	550×398×230mm		550×398×230mm	550×550×230mm
Weight	Stand-Alone Type		160kg (Long:170kg)	550kg	1,050kg		-	-
	Head Type		100kg (Long:110kg)	360kg	650kg		-	-
	Unit Type		35kg (Long:42kg)	77kg (Long:110kg)	160kg (Long:200kg)		160kg (Long:200kg)	300kg
	Control Box		13kg	14kg	40kg		40kg	45kg

**[Note]**

\*1) Load display accuracy is ±1% within the above ranges, over 10% of the maximum pressing capacity. (Check the load value and calibration amount periodically.)

\*2) Maximum approach speed will vary depending on conditions. The value in ( ) is the default speed.

\*3) Settable time will vary depending on conditions.

\*4) Repeatability is guaranteed only in the case that the machine body remains at a constant temperature.

(The ±0.005mm value is achieved with a constant temperature.)

\*5) The installation method for the unit type under 30kN pressing capacity is a standard side mounting or an optional vertical flange mounting.

(For JPU-2004/12004/JPU-2004L~8004L, both the side and vertical flange mountings are standard.)

(For JPU-5004/8004, side mounting only. For JPUF5004/8004, vertical flange mounting only.)

\*6) Interface options

Encoder output interface : Output A/B phase - 2,000 pulse/1 revolution, Z phase - 1 pulse/1 revolution

Load cell output interface : Output current DC4 - 20mA

(Optional load cell output, I/O-1, and Ethernet cannot be used for muting specifications.)

**<Standard Accessories>**

Stand-Alone Type : I/O-S connector, I/O-SYS connector (Note: Cables are not included.)

Operation manual (CD-ROM)

Head Type : I/O-S connector, I/O-SYS connector, Switch box short connector (Note: Cables are not included.)

Operation manual (CD-ROM)

Unit Type : Short connector

I/O-S connector, I/O-SYS connector, Switch box short connector (Note: Cables are not included.)

3 connection cables between the body and control box (3m)

Operation manual (CD-ROM)

**<Optional Devices>**

- Switch box (with a 2m, 3m or 5m cable) - Main unit to control box connector cord (5m)

- Teaching pendant (with a 5m cable) - I/O-SYS cable (2m, 3m or 5m cable)

- Monitor box for the unit type

- Specialist PC software (JP TaS System) complies with Windows® 7/ Windows® 8.1/ Windows® 10

● All patents granted in Japan and the U.S.A.

● Specifications may be modified without prior notice to improve product quality.

# Clean-Room Electro Press

## ■ A World First Clean Room Class 10 (0.3 $\mu$ m)\* Compliant Press Machine!

- ① The special airtight structure prevents dust emissions.
- ② Special external conductive coating prevents static electricity.
- ③ Low dust grease is used on the inside of the sliding ram; additionally a special antistatic accordion hose covers the outside of the ram.
- ④ Large and small exhaust pipe connectors are included for use with a variety of types and capacities of exhaust equipment. (Not available for all models)
- ⑤ The body (not including the control box) can be used in both clean room and general environments.
- ⑥ All plates and screws exposed to the outside are made of stainless-steel.

## ■ What's Clean Class 10?

Clean Class 10 is defined by Federal Standard 209D as a particulate count that shall not exceed a total of 10 particles of a size of 0.5 $\mu$ m or greater per cubic foot of air.



		JP-054·104·204·504·1004CL	JP-2004CL	JP-3004·5004CL	JP-8004CL
Outlet Flow	Stand-Alone/Head Type	300 NL/min	500 NL/min		
	Unit Type	250 NL/min	300 NL/min		500 NL/min
	Control Box	200 NL/min	200 NL/min	250 NL/min	250 NL/min
Exhaust Pipe Diameter	Stand-Alone/Head Type	External: $\phi$ 12 (One-touch connector) Internal: $\phi$ 19 (Fixed by a hose band)	Internal: $\phi$ 25 (Fixed by a hose band)		
	Unit Type	External: $\phi$ 10 (One-touch connector) External: $\phi$ 16 (One-touch connector)	Internal: $\phi$ 19 (Fixed by a hose band)		
	Control Box	External: $\phi$ 10 (One-touch connector) External: $\phi$ 16 (One-touch connector)	Internal: $\phi$ 19 (Fixed by a hose band)		

[Note] 15kN and 120kN models are not available in clean room type.

You can examine our products at our showrooms in Japan, Taiwan, Thailand, USA, and Germany. Please feel free to contact us for any inquiry.

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# JANOME

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Distributor