CHIN FONG

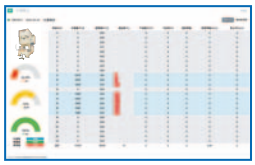
INTELLIGENT SERVO PRESS

iS1
iS2
iLS1

金豐機器工業股份有限公司
CHIN FONG MACHINE INDUSTRIAL CO., LTD.

Application Level

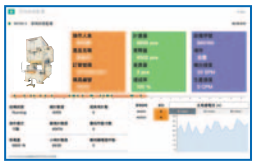
Data-Driven Decision

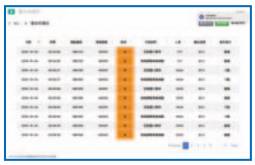

Production Board


Equipment Management Board


Efficiency Board


Statistics of Equipment Errors

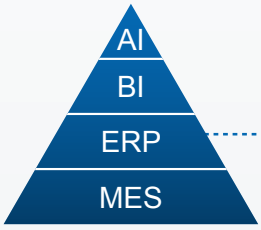

Real-Time Status Board


Error Management


Maintenance Management


Diagnostic Information Board

Agile Production



The private cloud is built inside the enterprise, and data is not publicly disclosed.

Real-time Communication Intelligence

Application Programming Interface

Network Level

Real Time Management

Big Data Analysis
Artificial Intelligence
Modeling

Real-time Data Processing

Smart Machine Box (SMB)

Physical / Sensing Level

Smart Networking

PLC Communication

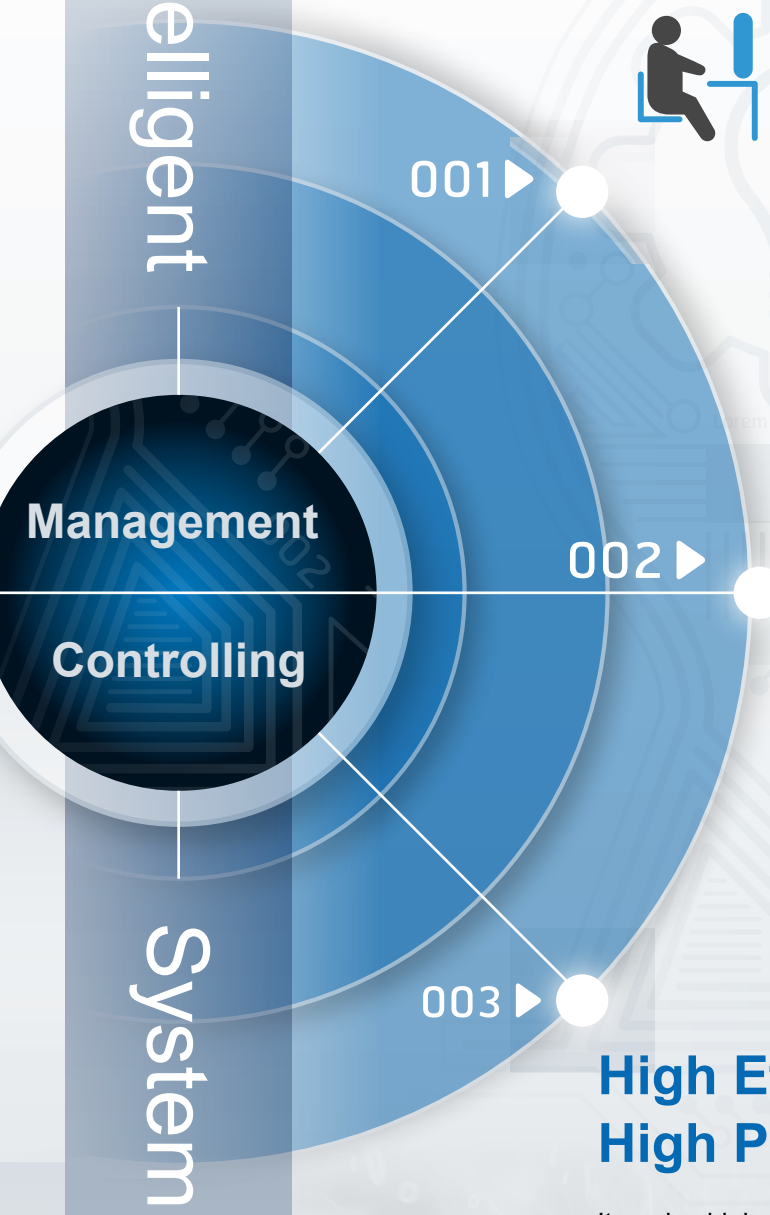
Intelligent Sensors Distribution Map

Defect Detection Module

Security Control (Face Recognition)

Machine Data Collection

Automation System Integration



Automation Platform

Through Ethernet connection, it makes plant management available to either operate peripheral equipment or monitor production lines.

All-in-One Integration

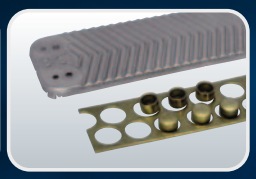
It integrates functions of press motion control technology, closed-loop drive control, into single, all-in-one control module that truly integrate all equipment into one machine.

High Efficiency and High Precision

It carries high speed CPU that enables faster data processing system capability and excellent response performance, plus functional motion curve setting and control features facilitate better operations capability in accurate, efficient and stable way.

Precision

Increase forming precision by applying servo control system.



Intelligence

Servo control system and real-time monitoring intelligent program create high-precision stamping technology.

Availability

Human machine interface make operating more user friendly.

Servo

mot

Green Design

Breakthrough the Bottleneck of Conventional Press Forming Processes

Increase Drawing Ratio

Simplified multi-stage drawing processes.
Significantly enlarge the parts drawing ratio in one-time operation.

Upgraded Precision for Bending Process

Reduce springback effectively by using retention B.D.C. function.

Fine Blanking

Set specific motion curve with appropriate die for fine blanking.

Forming Quality

Servo electronic system upgrades press capacity, increasing forming quality.

Productivity

Improved productivity as a consequence of programmable speed in conjunction with versatile motion curves.

Diversification

Free slide motion is well-suited for diverse working applications.

Press

ion

Added Value

Diversified and broaden product range through compound motion curves.

Reduce electricity consumption and noise at idle running and prolonging die life.

Environmental-Green

Servo press consumes lower electricity on stand-by mode.

Synergistic Effect of Servo Press Forming Technology

Improved Forming Capability for Press Forging

Freely setting forming speed for optimized press forging process of all kinds of material. It is suitable for perforation process of Print Circuit Board (PCB).

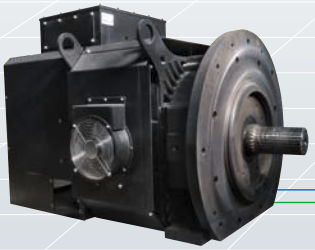
In-Die Compound Machining

Transform cutting station for specific need.

Human Machine Interface

- Touching Screen
- Indicator Light
- Pushbutton Switch

Servo Press - Electric and Control Architecture

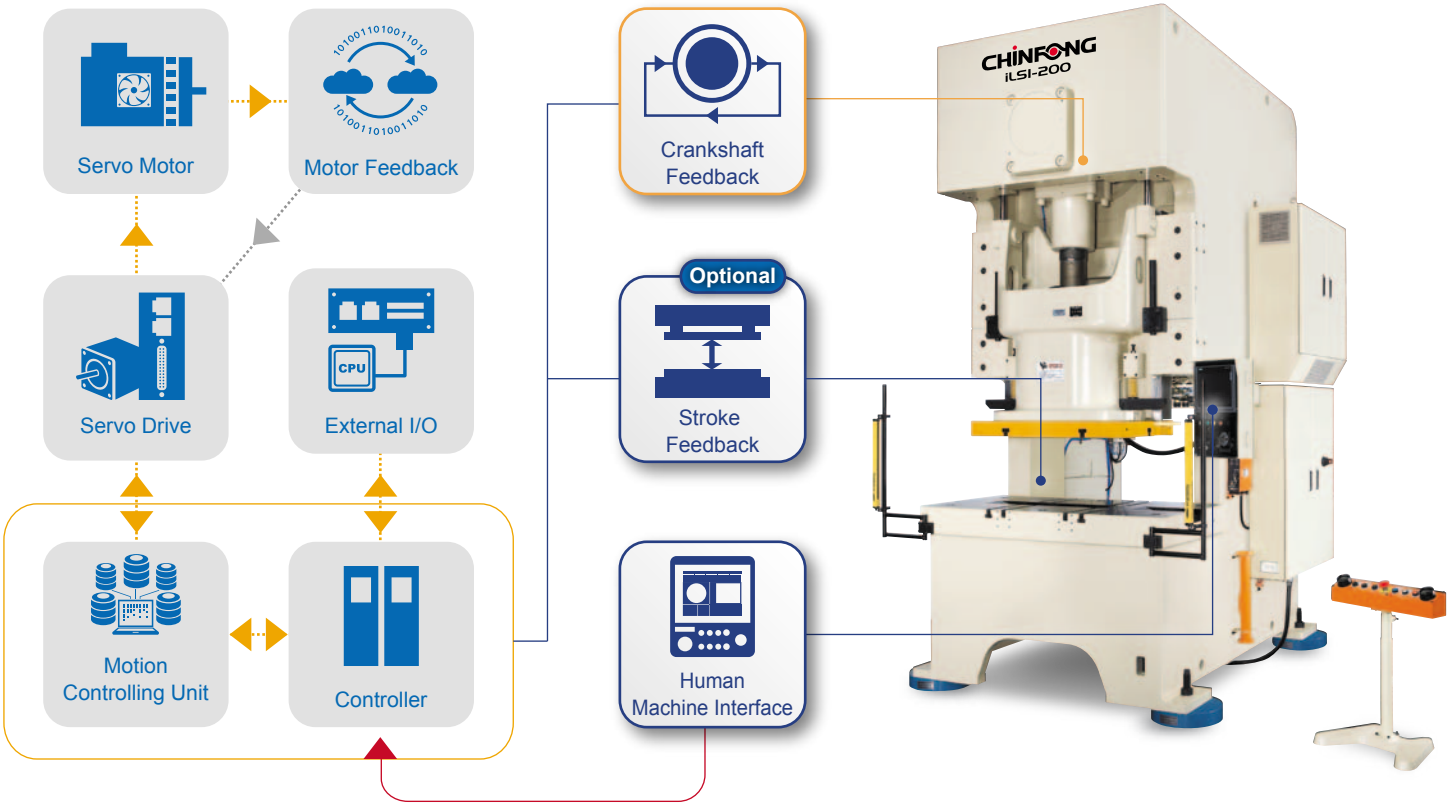


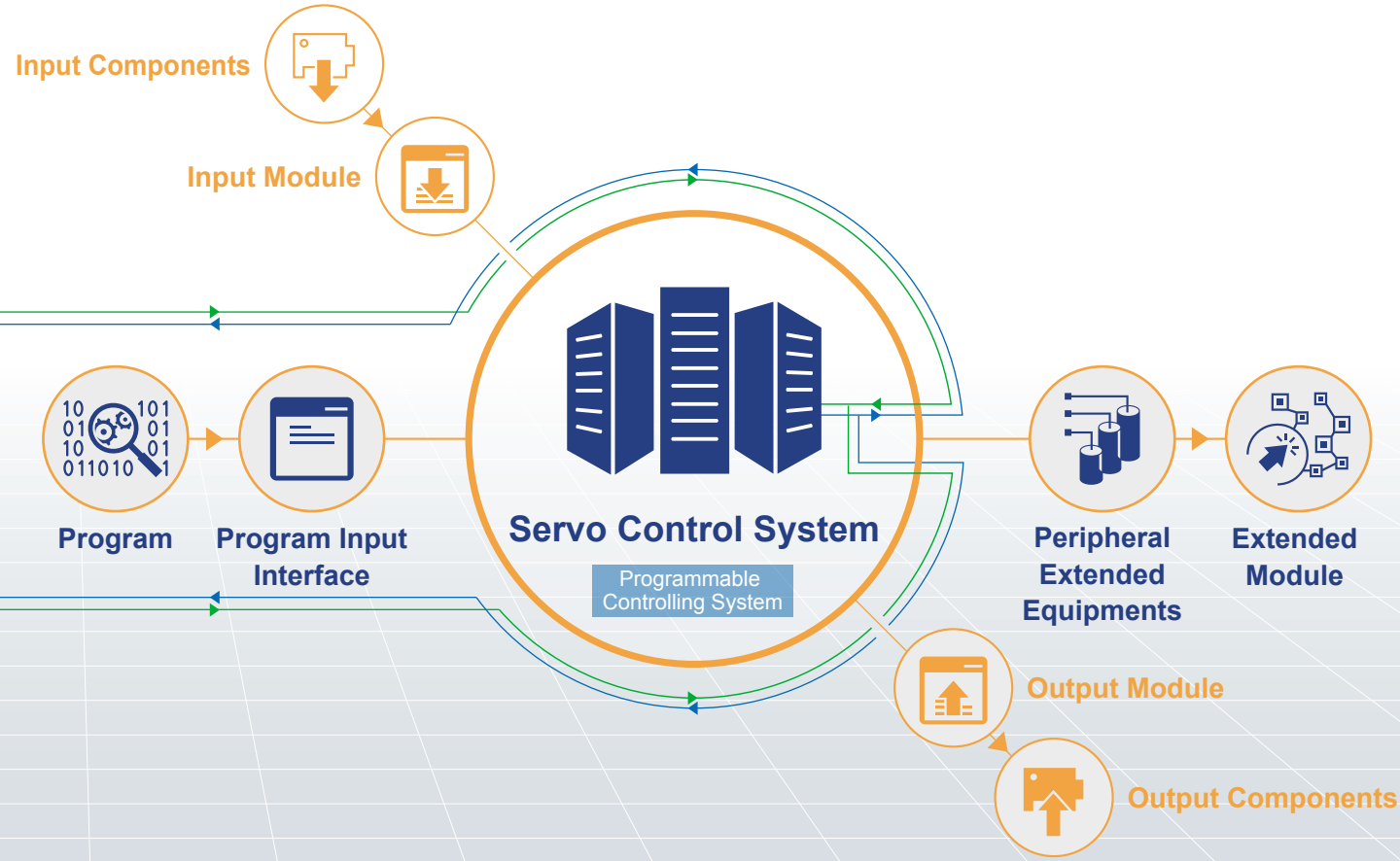
Servo Components

- Servo Driven System
- Servo Motor

Control System

Powerful servo electronic system serves as foundation of achieving high precision, high stability and multi-segment curve setting.





PLC Programmable Controlling System

Employ Monitor System In PC or Human Machine Interface	Data can be displayed and operateed on PC or human machine interface (HMI) where data is inputed via port of PLC server.	**Expansion Accessible**	Enable flexible I/O module expansion and extension RAM capacity in terms of actual requirement.
Operating Reliability	Microproccessor and optical coupler are applied to core component and signal proccessing respectively, leading to noice reduction and improving the reliability.	**Operation Monitoring System**	Real-time monitoring system is used to monitor main motor and I/O status. HMI displays alarm signal, with historical database inquiry and troubleshooting references.
Convenient Maintenance and Installation	Hosting control panel can display various status of ON/OFF setting connected to devices, such as solenoid switches and push-buttons, switches and indicator and so forth, through I/O LED, being able to facilitate fault detection and troubleshooting.	**Stamping Database Building and Management**	Memorize it in real-time, retrieve it at any time-create and manage stamping operation database easily by inputting critical operation and process parameters, such as slide motion speed, stroke length and material for different dies, into system built-in database, providing handy aids to plant management and result in significant production efficiency improvement.

Advantages of Servo Press

1

Overcome Intractable Materials Forming difficulties, such as stamping process of magnesium and titanium alloy products.

2

Composite Processes of forming, threading and riveting in a single cycle made possible when accommodating proper die.

3

Select and adopt the optimal slide motion curve according to various production requirements of versatile products consequently Improve Production Efficiency.

4

When incorporating with automation system, Free-setting Forming Velocity and Motion Curve in accordance with each stage's process conditions.

5

Improve product stability and precision, and prolong die life to realize Low Noise, Low Vibration Processes.

Human Machine Interface – Intelligent Curve

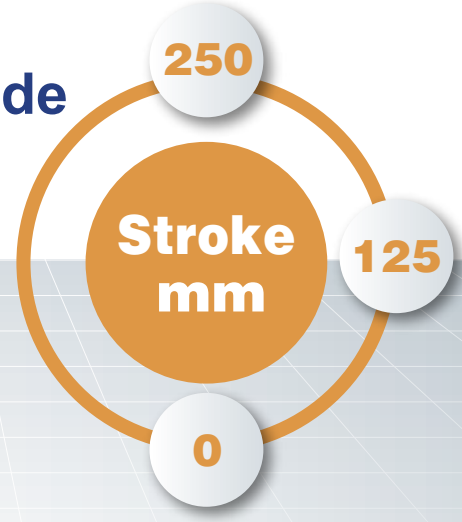
User Friendly Touch-panel Interface

Forming process with minimum drawing and bending stages requirement, which Improve Production Efficiency, Parts Quality Stability and Precision.

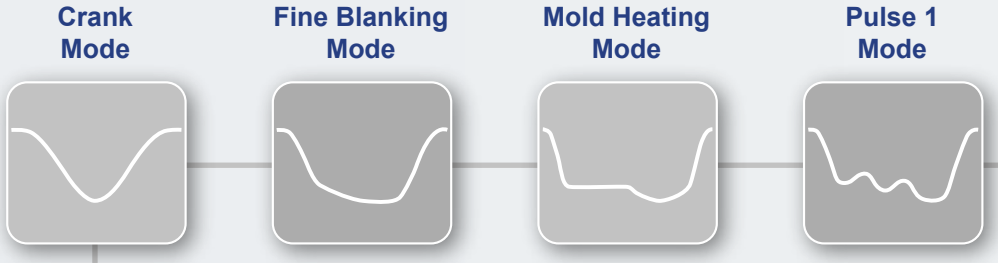
Build-in Multiple Intelligent Working Curves

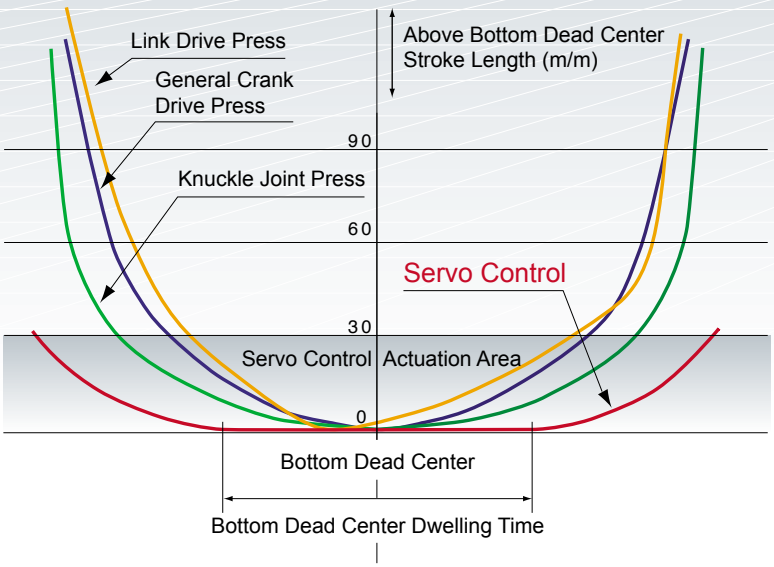
6

Variable Slide Stroke and Speed



Diversified Intelligent Machining Technology





Motion Diagram of Servo Drive Press

- Free setting for slide motion speed satisfies versatile forming conditions and requirements.
- Flexibility of forming motion diagram setting and optimization to overcome forming process difficulties of intractable shapes and materials.
- Flexible B.D.C. dwelling time setting reduces spring-back in extrusion, bending and compound process forming applications.

Pulse 2 Mode | **Drawing Mode** | **Pendulum Mode** | **Coining Mode** | **Forging Mode**

(Link Servo is non-applicable)

Achieve energy-saving at intermittent mode while incorporating transfer robots by decelerated motion instead of completely T.D.C. stop.

Only 1 % of electricity consumption on stand-by mode compared with forming, working energy is even capable at low speed.

Significantly increase material utilization ratio by setting and controlling motion curves.

Auto control system effectively increases production and lower demand for labor.

Decelerated motion speed while upper die is reaching parts avoid noise and vibration even in heavy thickness material perforating applications.

iS1-D

iS1-C

Straight Side Single Crank Direct Drive Servo Press

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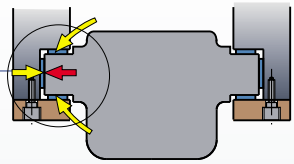
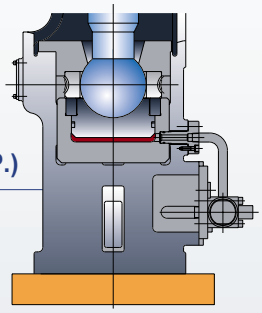
Box Type 6-point Gibs



- One piece, full-length, box type gibs assure actuated slide guiding.
- Force is delivered vertically, minimizing lateral thrust and, consequently, reducing off-center loading and friction in the gibs.

Highly Responsive Hydraulic Overload Protector (H.O.L.P.)



- Rapid Response Overload.
- Instant Oil Pressure Unloading.

Transmission Component Machining

All major friction components such as crankshaft, transmission shaft, gear are heat-treated and grinded, delivering high wear resistance and stability for heavy load and long time operation.

Specifications

Specifications \ Type		iS1-80		iS1-110		iS1-160		iS1-200		iS1-260	
		D	C	D	C	D	C	D	C	D	C
Capacity	Ton	80		110		160		200		260	
Rated Tonnage	mm	5		5		6		6		6	
Stroke Length	mm	180		200		220		250		250	
Stroke Per Min.	S.P.M.	~80		~70		~60		~50		~45	
Die Height	mm	350		350		400		450		500	
Slide Adjustment	mm	80		90		100		110		120	
Slide Area (L.R.xF.B.)	mm	700x460		800x520		900x580		1000x650		1100x700	
Bolster Area (L.R.xF.B.)	mm	900x600	1170x600	1000x700	1280x700	1150x760	1450x760	1250x850	1570x850	1350x900	1700x900
Side Window	mm	600x460	-	700x500	-	760x560	-	850x610	-	900x660	-
Bolster Thickness	mm	100		120		150		160		180	
Max. Upper Die Weight	kg	345		450		700		800		800	
Slide Adj. Motor	kWxP	0.4x4		0.4x4		0.75x4		0.75x4		1.5x4	
Working Height	mm	830		840		915		1010		1100	
Air Pressure	kg/cm^2	5		5		5		5		5	

iS2

Straight Side Double Crank Direct Drive Servo Press

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Servo press replace flywheel and clutch & brake with servo motor. Through one-stage or two-stage reduction gear ratio, the servo motor can directly actuate the rotation of crankshaft and move the slide up and down.

Features

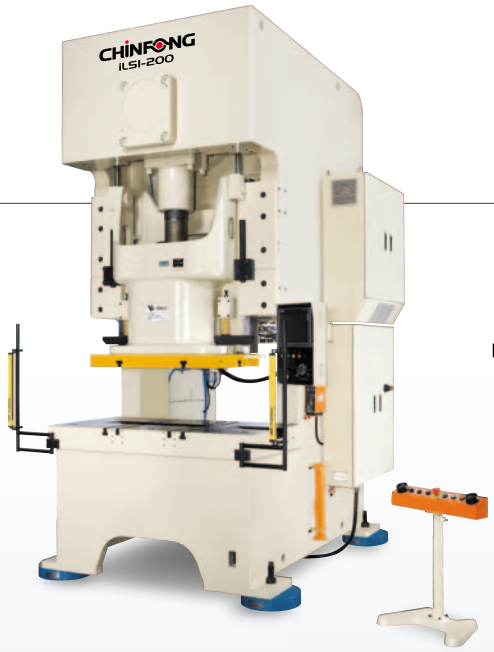
- Low reduction ratio means while stamping, the motor needs greater torque and low rotational speed.
- Under the pendulum mode, the motor has the same stamping capacity.
- The slide motion curve is performing the simple sinusoid motion curve when the motor is at the constant speed.

Specifications

Specifications / Type		iS2-160	iS2-200	iS2-300	iS2-400	iS2-500
Capacity	Ton	160	200	300	400	500
Rated Tonnage	mm	6	6	6	6	6
Stroke Length	mm	220	250	300	300	350
Stroke Per Min.	S.P.M.	~60	~50	~40	~40	~40
Die Height	mm	450	500	600	650	700
Slide Adjustment	mm	100	110	120	120	120
Slide Area (L.R.xF.B.)	mm	1650x600	1950x700	2300x850	2400x1100	2400x1100
Bolster Area (L.R.xF.B.)	mm	1950x800	2250x900	2600x1100	2700x1200	2700x1300
Side Window	mm	800x400	900x450	1100x550	1200x600	1300x650
Bolster Thickness	mm	150	160	190	190	220
Max. Upper Die Weight	kg	1000	1200	2000	2500	3000
Slide Adj. Motor	kWxP	0.75x4	1.5x4	1.5x4	1.5x4	2.2x4
Working Height	mm	950	1000	1150	1200	1300
Air Pressure	kg/cm^2	5	5	5	5	5

iLS1-C

Intelligent Link Drive Single Point Servo Press



TAIWAN EXCELLENCE 2013

Realizing

- Intelligent motion curve.
- Improved stability of stamping product.
- Improved component drawing.
- User-friendly operation panel.

Adopting

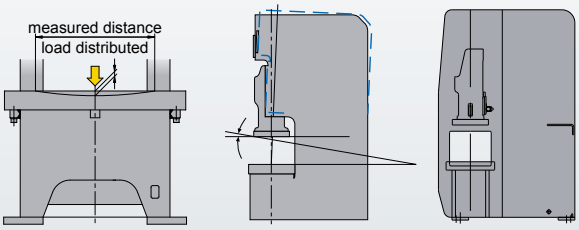
- High precision servo system.
- Wide slide design.
- Intelligent pulse mode.
- High precision gear transmission mechanism.
- Widen bed.
- Mini touching human machine interface.

Super Rigid Steel Frame

- Optimal rigid frame.
- Increase product precision.
- Prolong die life.

High Rigidity

High rigidity and low deflection can reduce frame deflection resulted from stamping.
Finite element analysis (FEA) of main components, such as frame, crankshaft, link, slide and etc., carries out optimal design by collecting data of force and deflection for every component.



Free Preset

Motion Speed | **Idle Time** | **Operating Start Angle** | **Forming Start Angle**

Specifications

Specifications	Type	iLS1-110		iLS1-160		iLS1-200		iLS1-260	
		C		C		C		C	
		S	H	S	H	S	H	S	H
Capacity	Ton	110		160		200		260	
Rated Tonnage	mm	5		6		6		6	
Stroke Length	mm	180	110	200	130	200	150	250	180
Stroke Per Min.	S.P.M.	~65	~100	~50	~85	~45	~70	~40	~60
Die Height	mm	350	385	400	435	450	475	450	485
Slide Area (L.R.xF.B.)	mm	800×520		900×580		1000×650		1100×700	
Bolster Area (L.R.xF.B.)	mm	1280×700		1450×760		1570×850		1700×900	
Bolster Thickness	mm	120		150		160		180	
Slide Adjustment	mm	90		100		110		120	
Slide Adj. Motor	kWxP	0.4x4		0.75x4		0.75x4		1.5x4	
Die Cushion									
Capacity	Ton	8		10		14		14	
Pad Area	mm	500×300		540×350		640×470		700×470	
Stroke Length	mm	80		80		100		100	

iLS1-D

Intelligent Link Drive Single Point Servo Press

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Safety Light Curtain

Optical sensor allow emergency stop for safety reason.

Motorized Grease Pump

Regularly lubricate pumps and fault detector to maintain operation smoothly.

Human Machine Interface

Human-centered design and user-friendly operation.

Safety Brake Device

Driven by press-designated high efficient servo drive, able to stabilize slide motion and press capacity.

Free-setting of motion curve is available for fine blanking, including blanking, bending, drawing, compressing and etc., improving production efficiency.

Specifications

Specifications \ Type		iLS1-110		iLS1-160		iLS1-200		iLS1-260	
		D		D		D		D	
		S	H	S	H	S	H	S	H
Capacity	Ton	110		160		200		260	
Rated Tonnage	mm	5		6		6		6	
Stroke Length	mm	180	110	200	130	200	150	250	180
Stroke Per Min.	S.P.M.	~65	~100	~50	~85	~45	~70	~40	~60
Die Height	mm	350	385	400	435	450	475	450	485
Slide Area (L.R.xF.B.)	mm	800×520		900×580		1000×650		1100×700	
Bolster Area (L.R.xF.B.)	mm	1000×700		1150×760		1250×850		1350×900	
Bolster Thickness	mm	120		150		160		180	
Side Window	mm	750×500		800×560		900×610		950×660	
Slide Adjustment	mm	90		100		110		120	
Slide Adj. Motor	kWxP	0.4x4		0.75x4		0.75x4		1.5x4	
Die Cushion									
Capacity	Ton	8		10		14		14	
Pad Area	mm	500×300		540×350		640×470		700×470	
Stroke Length	mm	80		80		100		100	

Standard Functions / Accessories

- Operation Mode Selection
  Off / Inching / Safety One Stroke / Continuous
- Safety Braking System
- Hydraulic Overload Protector (H.O.L.P)
- Motorized Slide Adjusting Device
- Motorized Grease Pump
- Circulating Forced Oil Lubrication Device
- Slide & Die Balance Device
- Servo Control System & HMI Operation Panel
- Energy Storage Device
- Electronic Rotary Cam Switch (6 spare channel)
- Misfeed Detection Consent
- Digital Die Height Indicator (unit: 0.1mm)
- Overrun Detecter
- Air Ejector
- Air Source Receptacle
- Portable 2-hand Pushbutton T-stand
- Safety Block with Plug

Optional Function / Accessories

- Pneumatic Die Cushion
- Die Pin-hole Tap
- Extended Module of Electronic Rotary Cam Switch (8 spare channel)
- Slide Knock-out Device
- Automatic Slide Adjusting Device
- Safety Light Curtain
- Power Receptacle (Single phase, 110V / 220V power source wiring by user)
- Anti-vibration Press Mounts
- Die Area Light
- Air Ejector (Additional)
- Air Source Receptacle (Additional)
- Automation Peripherals
- Quick Die Change System
- Electrical Hand Wheel
- HMI Load Monitor
- Intelligent Forming Produtivity Management System

Mechanical power press manufacturer

INNOVATION, SERVICE, COMMITMENT

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