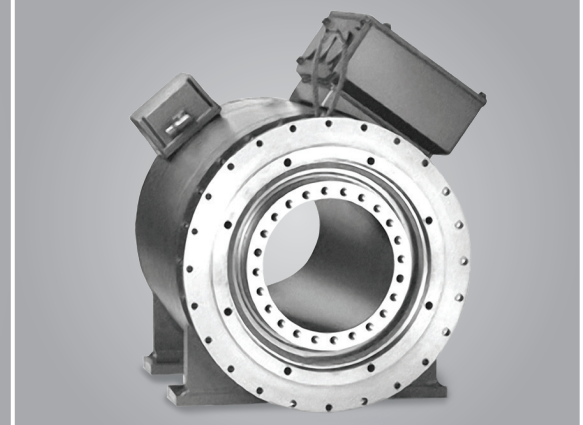
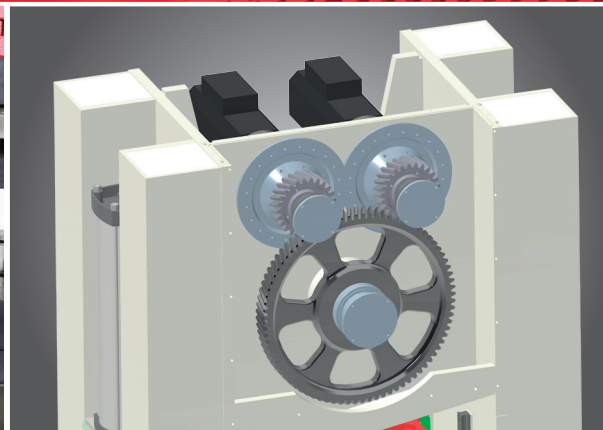
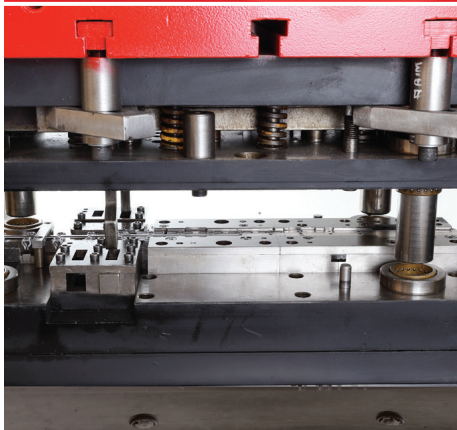




Forming Tomorrow. Today!



Servo Mechanical Presses



Electropneumatics & Hydraulics (India) Pvt. Ltd. | Machine Manufacturing Division

Electropneumatics

Electropneumatics has been providing innovative solutions for forming applications since 1972.

The extensive range of indigenous machines, products and technologies offer a perfect blend of modern technology and cost-competitiveness and cater to a variety of metal forming and allied applications.

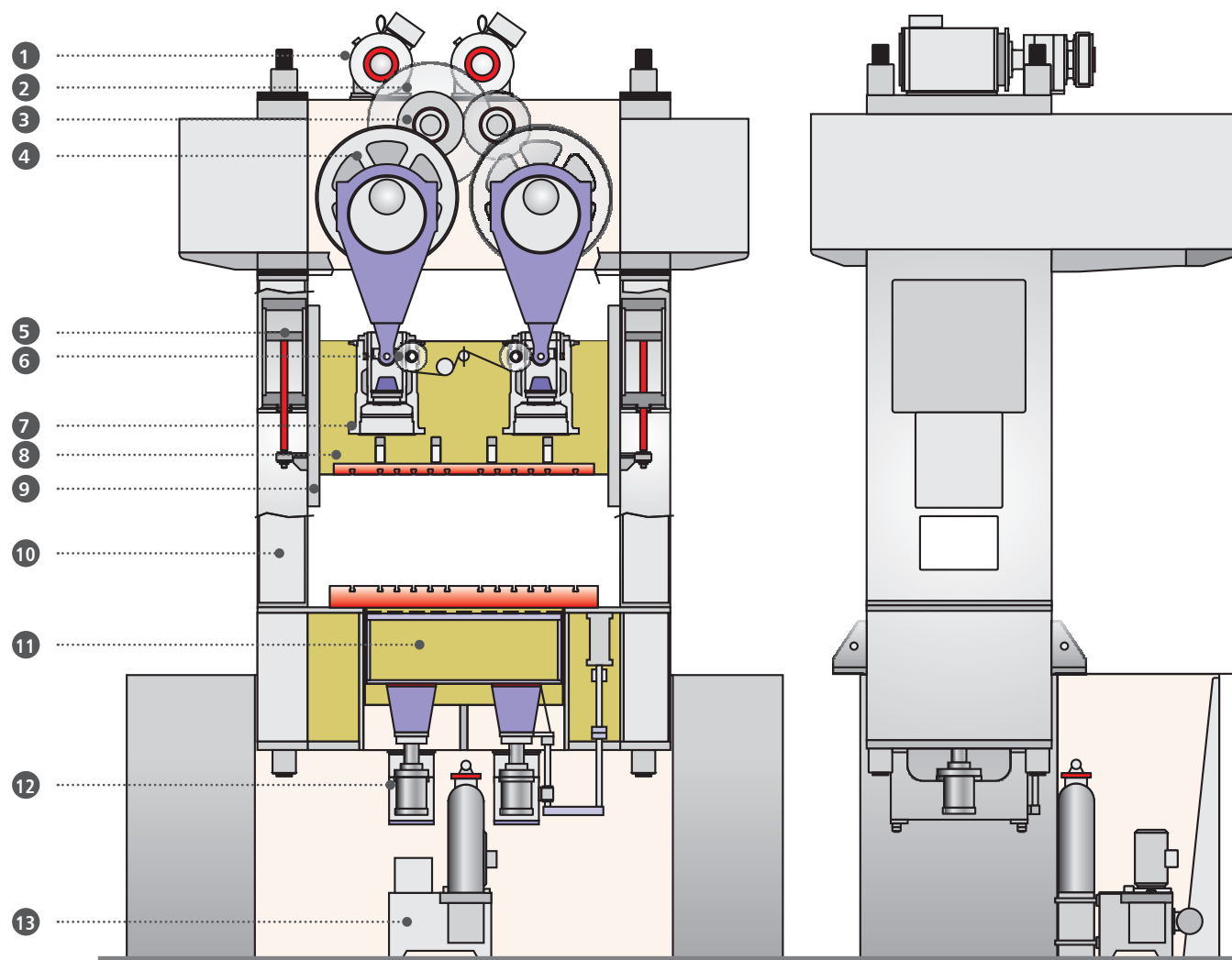
The machines shape/form metals, engineering plastics and composites, ceramics, etc. in solid, sheet, tube or powder form through stamping, cold extrusion, powder compaction, honing, bending, shearing/cutting, moulding and other methods.

Electropneumatics has its corporate office and manufacturing plant at Pune, a sales and service network throughout India and a dedicated and proficient engineering team to work out solutions for different customer needs. Electropneumatics continually enhances its technological strength through on-going research and development of new products and upgradation of existing ones.



Servo Mechanical Presses

Servo mechanical presses are the answer to today's requirement of flexibility and productivity in manufacturing. They combine the speed and reliability of eccentric drive mechanical presses and the versatility of hydraulic presses with innovative electric servo technology. The high torque, low inertia dynamic servo motors connected to the eccentric gear train replace the flywheel, clutch and brake.



1 AC servo motor

2 Bull gear

3 Intermediate gear

4 Eccentric gear

5 Counterbalance cylinder

6 Slide adjustment

7 Hydraulic overload safety

8 Slide

9 Bearing arrangement

10 Press frame

11 Cushion

12 Cushion cylinder

13 Hydraulic power pack

Basic Features

- Servo system
- Stepless programming of slide
- Auto shut height adjustment
- Online capture facility to study the slide speed/position profile
- Total production counter on HMI
- Energy management system
- Programmable motion profiles
- Automatic lubrication system
- 7" or 12" full color touch panel (HMI)
- Full torque at lower speed

Safety Features

- Counter balance cylinders
- Tonnage control safety
- Hydraulic overload protection
- Emergency stop push button
- Single phase preventer
- Phase reversal safety
- Electro mechanical safety brake

Optional Features

- Die cushion- pneumatic, hydraulic or servo electric
- Safety guards
- Servo roll feeders
- Handling system
- Automatic die height adjustment mechanism
- Automatic load monitoring mechanism
- IOT/ Industry 4.0 ready controller

Advantages

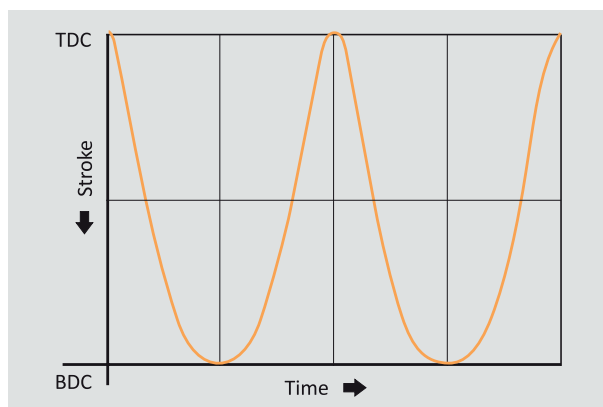


Benefits over Conventional Mechanical Presses

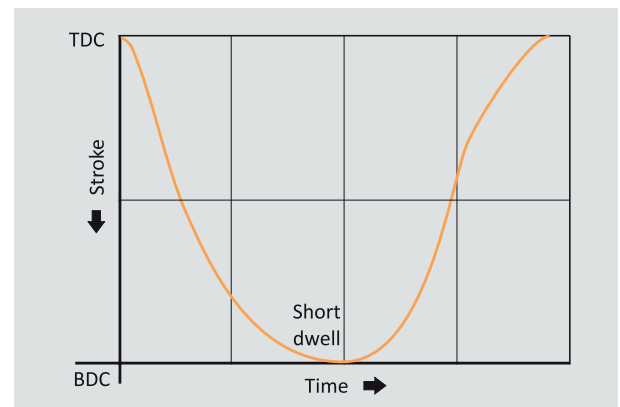
Flexibility

Servo mechanical presses give the user flexibility to

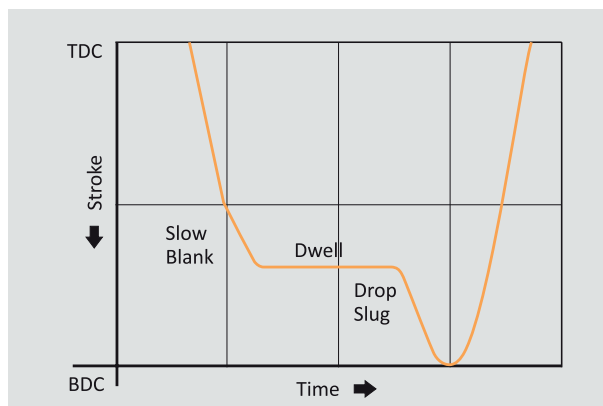
- Program desired motion profile
- Program slide speed
- Perform various processes like blanking, coining, trimming, shallow draw, tool tryout, progressive die operations on the same press
- Enable slow approach to reduce impact and vibration
- Dwell anywhere within the stroke for in-die/secondary operations
- Form high strength steels and exotic materials
- Electronic synchronisation for press to press operations



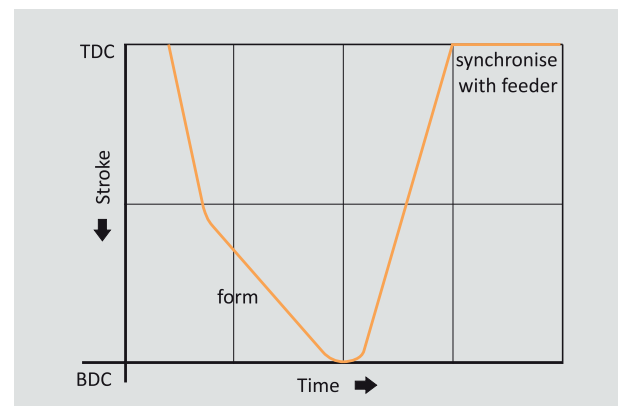
Conventional crank motion



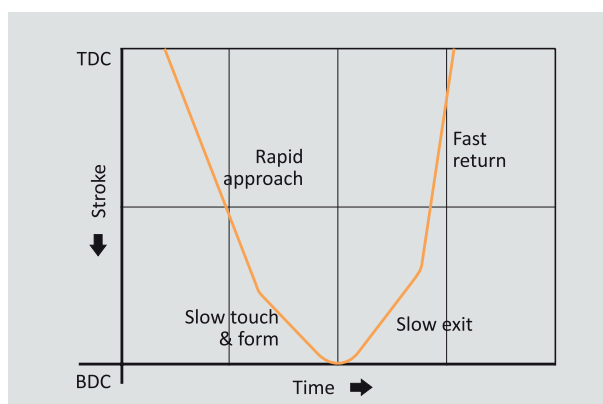
Coining



Blanking



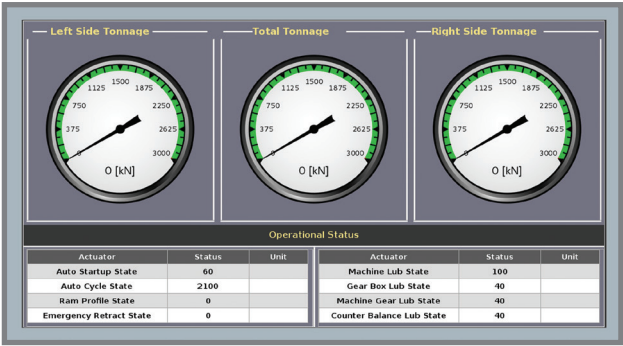
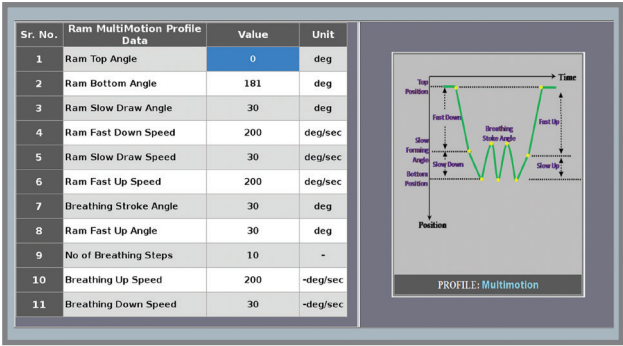
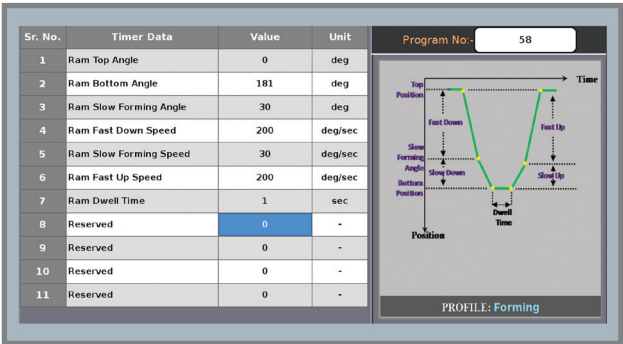
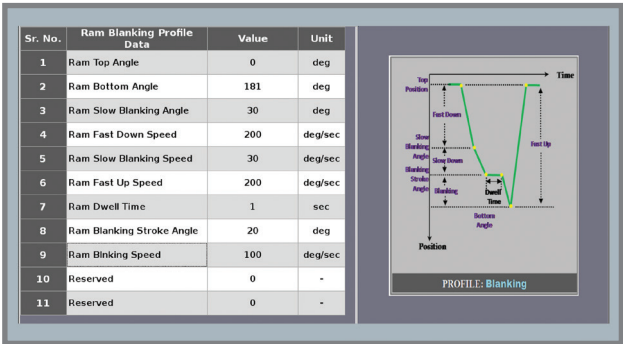
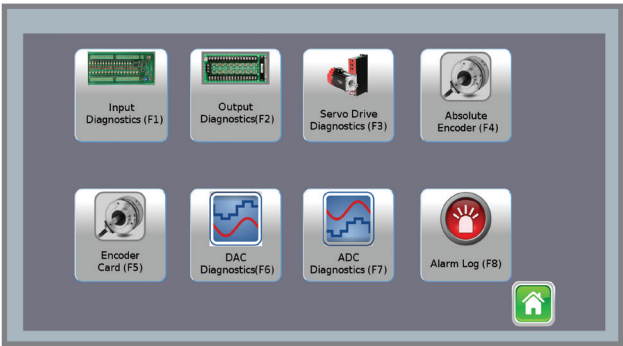
Drawing



Progressive die operation

User Friendly Interface

- User friendly interface with LCD provides all necessary data at the user's fingertips
- Provides step less programming of the slide for speed, position, acceleration and deceleration
- Programmable strokes and slide velocities enable different slide motion profiles for various critical forming applications with higher part accuracy.
- Servo motor controlled in velocity and torque limit modes for speed control and tonnage limit control of the slide
- Online capture facility to study the slide, speed and tonnage profile position

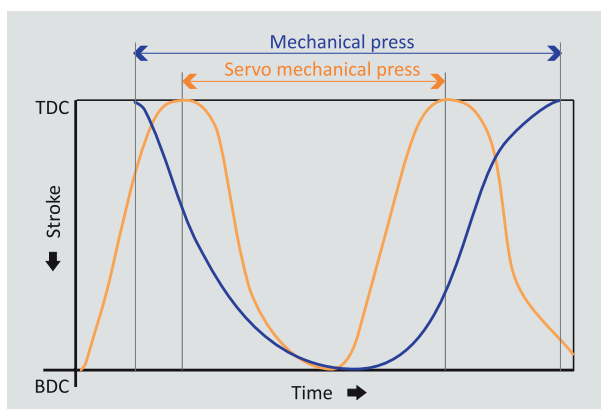


Higher Output

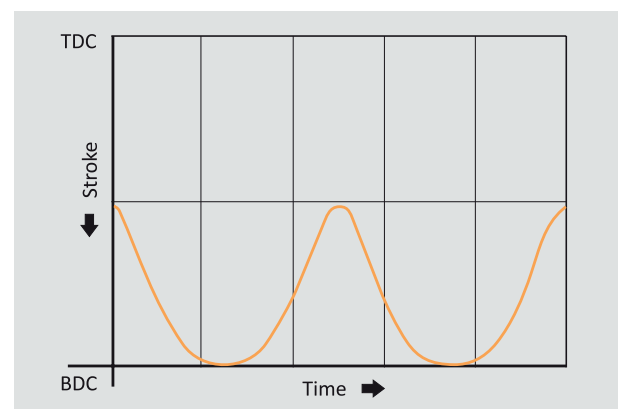
There can be considerable increase in production rate (SPM) by optimising the stroke length. The press can be operated in pendulum motion with shorter stroke length thereby increasing SPM. This ability to independently program the parameters as per the process makes servo mechanical presses highly productive.



12 stage-progressive die component



Full stroke cycle



Pendulum motion (short stroke)

Higher Quality

The quality of the part can be increased considerably in a servo press by slowing down at the time of forming. Servo mechanical press is well suited for tryout operations, where extremely slow speeds are required. The slide can be stopped at any point in the stroke and full rated force is available at even the slowest of speeds. Dynamic speed control at any position of the stroke enables effective forming of different materials.

Lower Maintenance

Servo mechanical presses are extremely low on maintenance as there are fewer rotating parts. The mechanism of flywheel and clutch is replaced by servo motors with gear box, which are less prone to maintenance.

Noise Free Environment

Servo mechanical presses are considered to be silent presses because of the silent driving unit, the servo motor and elimination of hydraulics.

Forming Stage Reduction

Many mechanical presses used for a forming application can be substituted by a single or combination of servo presses depending on the application. Thus it saves time, space and money in every way.

Increased Tool Life

The life of dies used on servo mechanical presses is considerably more than on mechanical presses because of impact and thereby, vibrations can be effectively controlled through control of slide motion using slow approach and fast return. Studies show a three-fold increase in die life.

Energy Management

While the connected motor capacity on a servo mechanical press may seem high, the actual power consumed is very low and is comparable to conventional mechanical presses. This is made possible due to Energy Management in the form of capacitive buffering. The capacitor bank is pre-charged by the mains with low power during idle or non-loaded part of the cycle and it acts as a buffer of energy. When the press goes through its actual loading cycle, energy is pulled from the capacitor bank and not from the mains. Hence, the actual power consumed is low as compared to the connected load.

One Press, Many Applications

A variety of operations can be performed in the same press with advantages such as better spring back control, good flattening/bottoming effect, fine trimmed edges and consistent repeatability. Carry out progressive die forming, warm forming, punching, blanking, forming, precision blanking, burr-free blanking, in-die assembly and more in one press.



Our Range of Servo Mechanical Presses

C-Frame

Low tonnage range
35 T to 250 T



Straight-Sided

Medium tonnage range
80 T to 400 T



Column-Tie Rod

High tonnage range
500 T to 2000 T



Applications



Electrical and Electronic components

- Stamped parts
- Contacts
- Brackets



Automobile parts

- Sheet metal parts
- Fuel tank
- Chassis components
- Exhaust system
- Clutch plates



Assembly

- Bearings
- Gears
- Seals



Appliances

- Refrigerators
- Washing machines
- Kitchen appliances



General press shop applications



General Engineering

- Bearing cups
- Pump housing

Specifications



60 T

Tonnage Capacity		35 T	60 T
Model No.		ESC1-35	ESC1-60
Suspension points	no.	1	1
Tonnage rating point	mm	3	4
Slide stroke length	mm	70	100
Throat	mm	210	250
Shut height (SDAU)	mm	220	300
Strokes per minute (no load, full stroke)	spm	80	65
Slide adjustment (motorised)	mm	50	70
Slide size (LR x FB)	mm	380 x 300	500 x 400
Bolster size (LR x FB)	mm	780 x 400	900 x 500
Bolster height from floor	mm	900	900
Die cushion capacity (optional)	T	2.2	3.5
Die cushion type	-	Pneumatic	Pneumatic
Die cushion stroke	mm	35	50
Die cushion pad size	mm	300 x 210	350 x 300

C-Frame Construction

Low Tonnage Range: 3 T to 250 T



3 T Servo
Monitoring Press

100 T

200 T

80 T	110 T	160 T	200 T	250 T
ESC1-80	ESC1-110	ESC1-160	ESC1-200	ESC1-250
1	1	1	1	1
5	5	6	6	6
110	120	130	160	180
310	350	390	430	460
320	350	400	450	550
60	55	50	40	30
80	90	100	110	120
560 x 460	630 x 520	700 x 580	850 x 650	960 x 720
1000 x 600	1140 x 680	1250 x 760	1450 x 840	1500 x 900
900	900	1000	1000	1000
4.5	6	10	12	14
Pneumatic	Pneumatic	Pneumatic	Pneumatic	Pneumatic
50	55	60	75	85
400 x 260	450 x 340	600 x 350	600 x 500	650 x 500

Specifications



80 T Servo Transfer Press



100 T

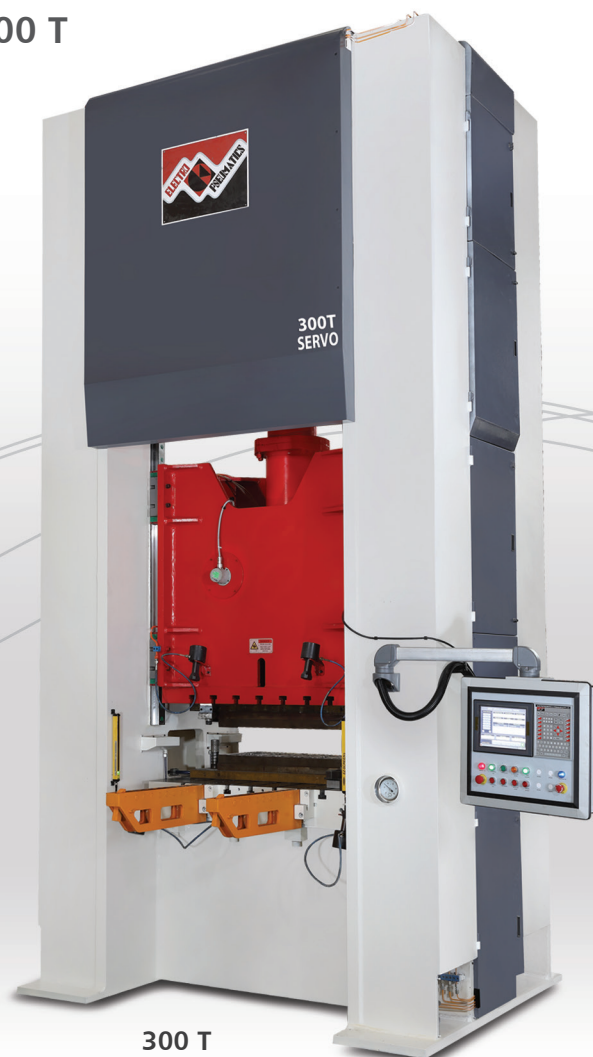
Tonnage Capacity		80 T	110 T	160 T
Model No.		ESS1-80	ESS1-110	ESS1-160
Suspension points	no.	1	1	1
Tonnage rating point	mm	5	5	6
Slide stroke length	mm	110	120	130
Shut height (SDAU)	mm	320	350	400
Strokes per minute (no load, full stroke)	spm	60	55	50
Slide adjustment (motorised)	mm	80	90	100
Slide size (LR x FB)	mm	700 x 460	800 x 520	900 x 580
Bolster size (LR x FB)	mm	900 x 600	1000 x 680	1150 x 760
Bolster height from floor	mm	900	900	1000
Die cushion capacity (optional)	T	4.5	6	10
Die cushion type	-	Pneumatic	Pneumatic	Pneumatic
Die cushion stroke	mm	50	55	60
Die cushion pad size	mm	400 x 260	450 x 340	600 x 350

Straight-Sided Construction

Medium Tonnage Range: 80 T to 400 T



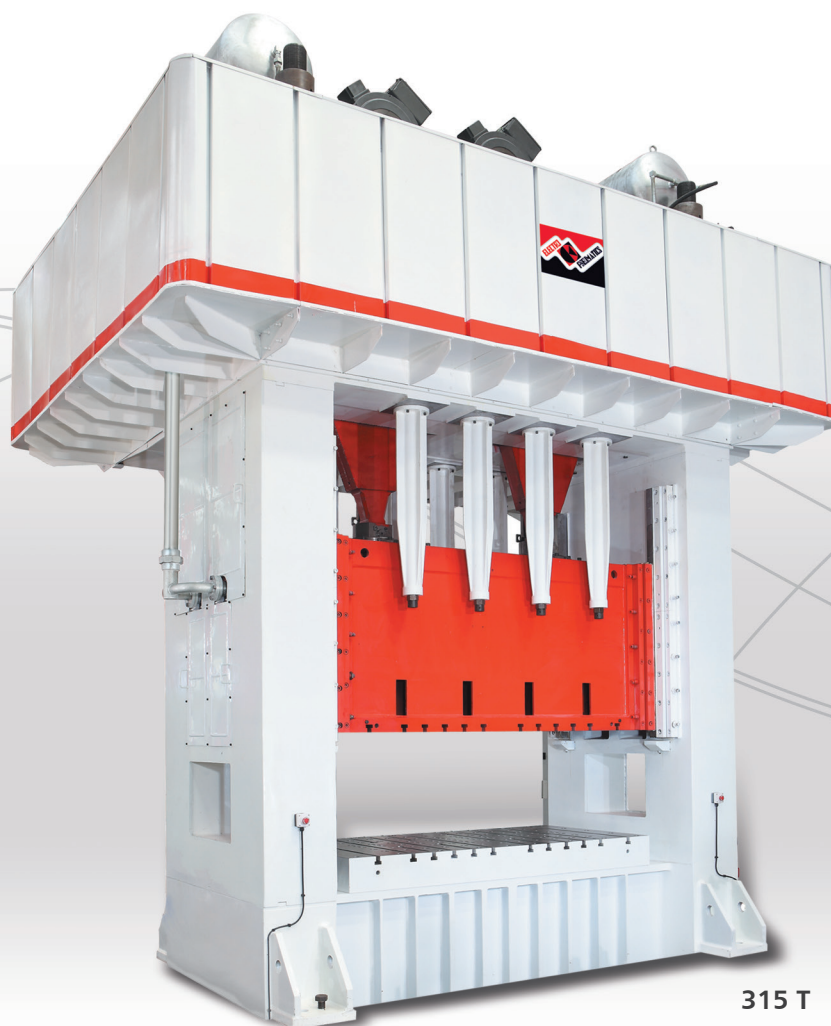
200 T



300 T

200 T	250 T	315 T		400 T	
ESS1-200	ES1-250	ESS1-315S	ESS2-315L	ESS2-400S	ESS2-400L
1	1	1	2	2	
6	6	6	13	6.5	13
160	180	250	300	300	400
450	550	550	600	650	700
40	30	30	25	20	
110	120	125	200	150	200
1000 x 650	1300 x 720	1300 x 800	2300 x 1100	2300 x 1100	
1300 x 850	1500 x 900	1500 x 1000	2500 x 1300	2500 x 1300	
1000	1000	1100	900	900	
12	14	14	30	40	
Pneumatic	Pneumatic	Pneumatic		Pneumatic	
75	85	120	140	140	190
600 x 500	650 x 500	650 x 560	1500 x 850	1500 x 850	

Specifications



315 T

Tonnage Capacity		500 T		630 T	
Model No.		EST2-500S	EST2-500L	EST2-630S	EST2-630L
Suspension points	no.	2		2	
Tonnage rating point	mm	6.5	13	6.5	13
Slide stroke length	mm	350	500	400	500
Shut height (SDAU)	mm	650	800	750	850
Strokes per minute (no load, full stroke)	spm	20		16	
Slide adjustment (motorised)	mm	150	250	250	350
Slide size (LR x FB)	mm	2600 x 1200		2600 x 1400	
Bolster size (LR x FB)	mm	2800 x 1400		2800 x 1600	
Bolster height from floor	mm	900		900	
Die cushion capacity (optional)	T	80		100	
Die cushion type	-	Hydraulic		Hydraulic	
Die cushion stroke	mm	165	240	190	240
Die cushion pad size	mm	1800 x 900		1800 x 900	

Column Construction

High Tonnage Range: 500 T to 1250 T



800 T

800 T		1000 T		1250 T	
EST2-800S	EST2-800L	EST2-1000S	EST2-1000L	EST2-1250S	EST2-1250L
2		2		2	
6.5	13	6.5	13	6.5	13
450	600	450	600	450	600
800	950	800	1000	800	1000
16		15		15	
350	350	400		400	
2900 x 1600		2900 x 1600		3200 x 1800	
3100 x 1800		3100 x 1800		3400 x 2000	
900		900		900	
100		120		120	
Hydraulic		Hydraulic		Hydraulic	
220	280	220	280	220	280
2000 x 1100		2000 x 1100		2200 x 1200	

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