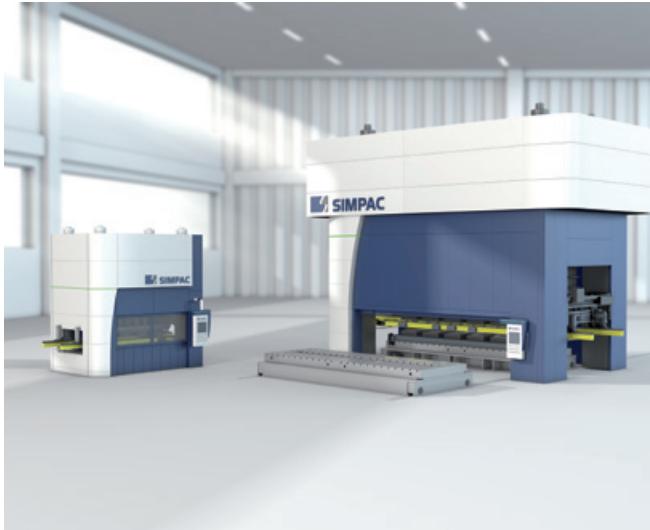




MX AND SX SERIES



Features and benefits

- Dynamic processes through the use of torque motors that provide high torque even at low speeds
- Maximum production flexibility as slide motion, slide velocity and slide strokes are freely programmable
- Significantly higher output rates compared to conventionally driven presses by means of highly dynamic torque motors and pendulum motion of the slide
- Optimum adaption of the production process to the requirements of part and die
- Motor(s), power electronics, holding brake, lubrication and press control are of German origin and guarantee a long service life and maximum dynamics
- Intelligent energy management system with capacitor banks
- Downstream processes like nut welding or thread forming can be reliably integrated into the production process by programming holding times at BDC
- Set-up features and tryout processes are time-saving and the process is safer due to the availability of the full press force even at lowest speeds

Overview

- Type: Servo presses
- Press capacity: 3,000-10,000 kN (MX) and 8,000-30,000 kN (SX)
- Part size: medium to large
- Slide kinematics: servo motion
- Application: cutting, stamping, bending, embossing, drawing, integration of downstream processes

Description

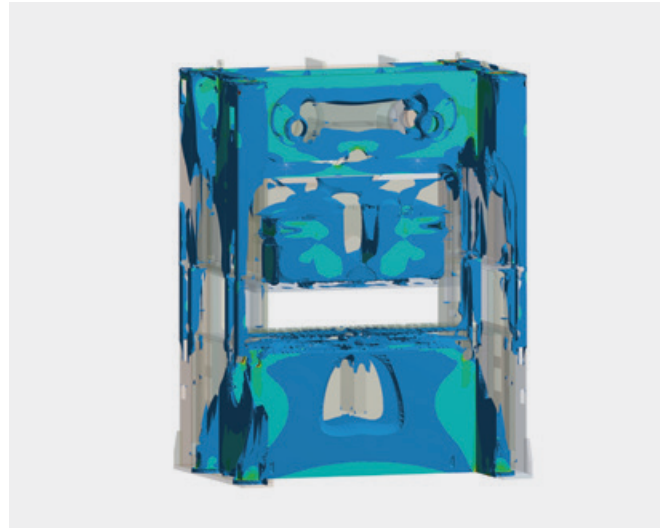
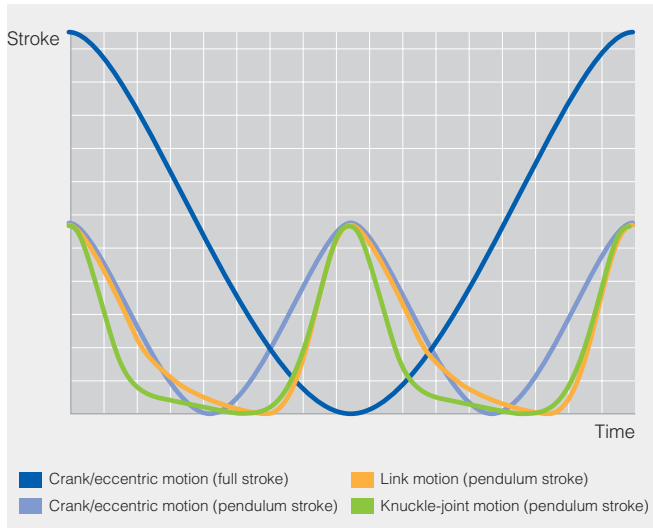
Presses with servo direct drive stand for highly dynamic forming processes and offer maximum flexibility in the production. In combination with a high stiffness value of press body and drive, they deliver consistently high part quality.

Standard equipment

- Water-cooled servo torque motor(s) and power electronics
- Electrical lifting gate with safety glass windows
- Moving bolster with mobile control panel
- Electrical slide adjustment, mechanical slide locking, pneumatic slide counterbalance
- Hydraulic unit and lubrication unit with progressive distributor
- Hydraulic overload protection
- Press force monitoring (single and sum force)
- Vibration isolation with spring dampers
- VPN interface for remote maintenance

Options

- Additional moving bolster in front-to-back or t-track arrangement (SX)
- Die change systems with retractable die clamping plate or tandem die change carts (MX)
- Press force monitoring (signature curve)
- Different press enclosure concepts for noise reduction



The highly dynamic direct drive of the MX and SX series allows in pendulum motion a significant output increase compared to conventionally driven presses.

Due to the individual programming of the slide movement, the forming process can be optimally adapted to the requirements of die and part.

In addition to the free programming of the slide movement, the press operator can select between three predefined slide movement curves, which can either be chosen in full or in pendulum mode:

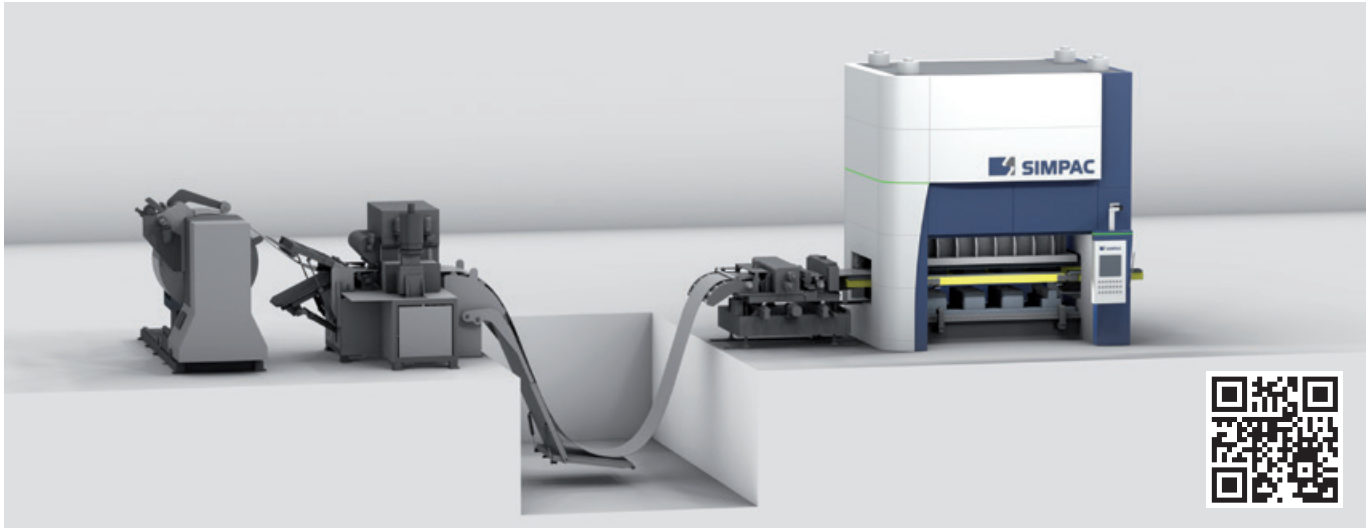
- For stamping and cutting: crank/eccentric motion
- For drawing: link motion
- For embossing and for thick or high-strength materials: knuckle-joint motion

Both, press body and press drive have high stiffness values and are specially designed for highly dynamic processes:

- The very solid, low-stress annealed press bodies are FEM-calculated and optimized by so-called "hot-spot analysis" in areas which are subject to higher loads
- The low-mass direct drive system has powerful water-cooled torque motors
- Depending on the specific requirements of the customer, the motors of the SX series are available in three different performance classes
- The power electronics can be variably adapted to the individual installation site of the presses



MX AND SX SERIES



Technical specifications

Model	MX-300	MX-400	MX-600	MX-800	MX-1000
Press capacity in kN	3,000	4,000	6,000	8,000	10,000
Stroke rate* in 1/min	3-90	3-80	3-70	3-60	3-60
Slide stroke in mm	250	300	350	350	350
Slide adjustment in mm	150	200	250	250	300
Die height** in mm	550	600	800	800	900
Slide dimensions in mm	2,600 x 1,000	2,500 x 1,300 3,200 x 1,300	3,200 x 1,500 4,000 x 1,500	3,200 x 1,500 4,000 x 1,500	3,200 x 1,500 4,000 x 1,500
Bolster dimensions in mm	2,700 x 1,100	2,500 x 1,300 3,200 x 1,300	3,200 x 1,500 4,000 x 1,500	3,200 x 1,500 4,000 x 1,500	3,200 x 1,500 4,000 x 1,500

*Depending on programmed stroke length, slide kinematics, part dimension and existing die limitations

**Slide stroke down, adjustment up (SDAU) | All models in 2-point design | Subject to technical modifications



Technical specifications

Model	SX-800 4P	SX-1000 2P 4P	SX-1250 2P 4P	SX-1600 2P 4P	SX-2000 4P	SX-2500 4P	SX-3000 4P
Press capacity in kN	8,000	10,000	12,500	16,000	20,000	25,000	30,000
Stroke rate* in 1/min	3-55	3-50	3-45	3-40	3-38	3-34	3-34
Slide stroke in mm	500	500	500/600	500/600	800	800	800
Slide adjustment in mm	400	400	400	400	400	400	400
Die height** in mm	1,100	1,100	1,200	1,400	1,500	1,500	1,500
Slide and bolster dimensions in mm	4,600 x 1,800	5,100 x 1,800	5,100 x 1,800 6,100 x 1,800	6,100 x 1,800	6,100 x 2,500	6,100 x 2,500	6,100 x 2,500
	4,600 x 2,200	5,100 x 2,500	5,100 x 2,500 6,100 x 2,500	6,100 x 2,500	7,300 x 2,500	7,300 x 2,500	7,300 x 2,500

*Depending on programmed stroke length, slide kinematics, part dimension and existing die limitations

**Slide stroke down, adjustment up (SDAU) | 2P = 2-point design, 4P = 4-point design | Subject to technical modifications