FORMING THE FUTURE

STAMPING AND FORMING SYSTEMS WITH SERVODIRECT TECHNOLOGY

SCHULER

Member of the ANDRITZ GROUP

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WELCOME TO SCHULER.
STAMPING AND FORMING SYSTEMS WITH SERVODIRECT TECHNOLOGY.

Production of double parts at an automotive components supplier. Press force: 16,000 kN (1,800 US tons).

For more than 170 years, Schuler has been supplying presses and automation systems for customers in the metal forming industry. Whether in the stamping plant or the press shop, the challenges facing our machines are redefined every day. With stamping and forming systems from Schuler, you can guarantee economical production with more productivity, high machine availability, the best possible component quality and extensive services. We are experienced in forming technology, and work together with you to develop the appropriate system solutions. We rely on innovative press technology, high-performance automation components, flexible service and personal contact with the forming specialists in your company.

You too, can benefit from individual and expert advice from Schuler. Whether the challenge relates to component development, diemaking, press technology or automation systems – together we will find the appropriate solution.

Economical production of a wide range of parts.

SCHULER ONLINE

Would you like to find out more about stamping and forming systems with ServoDirect Technology?
You can find our complete range of products at www.schulergroup.com/stamping_cutting.
Simply scan the QR code using the camera of your smartphone or tablet.

AT HOME IN EVERY THE INDUSTRY.
NO TWO CHALLENGES ARE THE SAME.

Series production with a tie rod servo press, press force: 16,000 kN (1,800 US tons).

Mass-production stampings, produced on a monoblock servo press, press force: 2,500 kN (280 US tons).

Stamping and forming systems from Schuler are used successfully in a very wide range of industries. The breadth of our product range for economical series production of high-quality components meets the special requirements that exist in various industries.

This is where we exel:

- Automotive, commercial vehicle and components industries
- Electrical and electronics industry
- Construction and off-road vehicles industry
- Domestic appliance industry
- Furniture industry
- Packaging industry
- Medical technology

SEVEN GOOD REASONS.
STAMPING AND FORMING SYSTEMS WITH SERVODIRECT TECHNOLOGY.

COMMERCIALLY ORIENTED CONSULTING
From the component study and simulations through to the complete process overview – we work with our customers to arrive at the most economical solution.

HIGH EFFICIENCY
High availability with optimum productivity levels, long die life, low service and maintenance costs as well as optimized spare parts management – gives you even more efficiency.

BEST COMPONENT QUALITY
Achieving constant component quality is important. With stamping and forming systems from Schuler, you can ensure the best component quality combined with high productivity, even with complex part geometries.

GREAT FLEXIBILITY
The product range of stamping and forming systems extends from automatic blanking machines for producing a simple range of parts through to highly flexible servo presses for complex components.

MAXIMUM PROCESS RELIABILITY
Reliable and stable overall processes lay the foundation for economical work in stamping plants and press shops. You can benefit from our experience and expertise.

BEST ENERGY EFFICIENCY
An advanced energy management system makes stamping and forming systems from Schuler particularly energy efficient. Not only does this save costs, it also reduces environmental pollution.

RELIABLE SERVICE
Whether it's technical service, measures to increase performance or individual training courses – the Schuler service team is at your disposal around the clock, and around the globe.

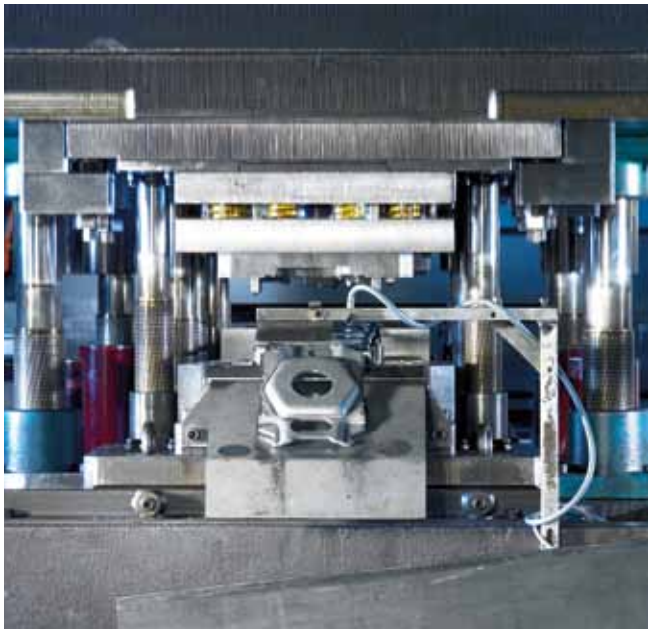
SERVODIRECT TECHNOLOGY.
PERFECTION DOWN TO THE LAST DETAIL.

Highly dynamic torque motors.

Series production with a tie rod servo press, press force: 8,000 kN (900 US tons).

The use of highly dynamic torque motors for press operation opens up totally new perspectives: maximum flexibility in production, economical production of complex part geometries and a high level of productivity with optimum part quality.

Highly dynamic Schuler roll feed units, coil feed lines, destackers and tri-axis transfer systems deliver fully automated stamping and forming systems for a wide range of applications.



Series production with a monoblock servo press, press force: 6,300 kN (700 US tons).

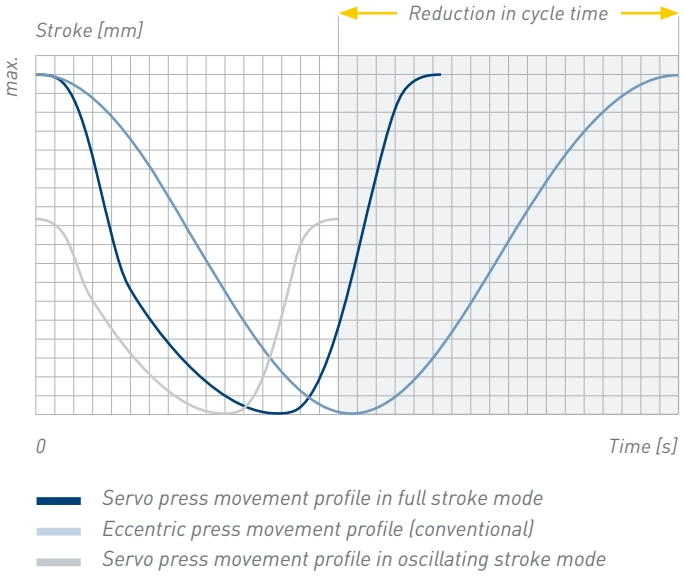
Process consulting for maximum output with optimum parts quality.

Presses with ServoDirect Technology are driven directly by torque motors. They deliver high torque values and are the right drive for dynamic stamping and forming processes. The lack of a flywheel and clutch/brake combination makes the presses flexible, energy efficient and cuts down the maintenance required.

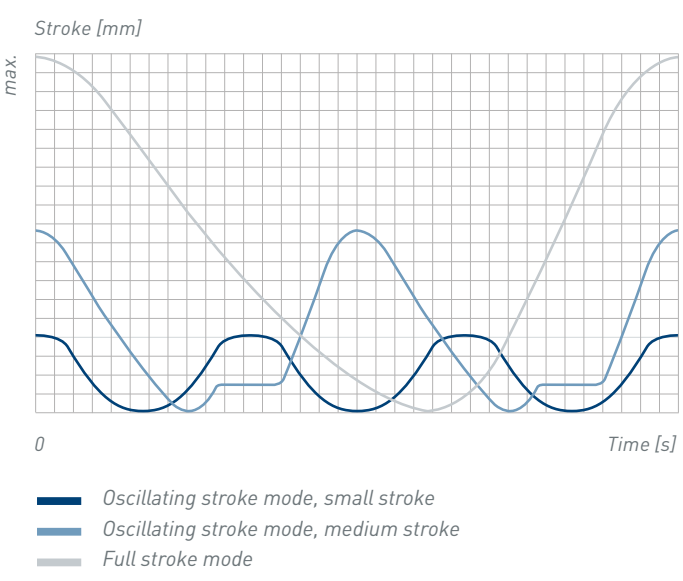
Precise harmonization of press technology with automation components, forming requirements and die operations ensures maximum efficiency in stamping and forming systems using ServoDirect Technology.

SERVODIRECT TECHNOLOGY.
SUCCESS CAN BE PROGRAMMED.

The technology for maximum efficiency: Programming the slide movement reduces cycle time with the same or lower forming speed.



Programming the slide motion reduces the cycle time while keeping the forming speed constant.



ServoDirect Technology allows the slide motion to be programmed for specific applications.

Programmable slide movement curves. The use of highly dynamic torque motors permits straightforward and rapid programming of different movement profiles in one press cycle. This means the slide kinematics can be quickly and easily adapted to the process parameters of the die and the automation system, and optimized for a high stroke rate.

Pendular stroke mode. Pendular stroke mode permits user-programmable slide stroke heights. The torque motor alternates the eccentric drive between forward in one stroke and backwards in the next stroke, producing a pendular motion that increases the stroke rate and improves energy efficiency.

Die life and component quality. The ability to optimize the forming speed in the critical area of the process can significantly increase die life. The impact of fluctuating coil quality can be reduced and therefore improve component quality.

Energy management. During the regenerative braking phase of the press cycle, energy management systems can be used as an option to store the energy released. This energy is then available once again in the subsequent motorized phase of acceleration. The result is reduced connected load and smoother current peaks.

Operators programming the slide movement curves.

THE ADVANTAGES

- Significant increase in productivity compared to conventionally driven mechanical presses
- Maximum production flexibility due to programmable stroke heights and motion sequences
- Increased part quality and die life due to optimized motion sequences
- Greatest availability for production
- Best suited for processing high-strength steels
- Lower energy costs due to efficient drive solution
- Easier maintenance compared to conventionally driven mechanical presses, because there are fewer mechanical components

SERVODIRECT TECHNOLOGY.
PROVEN PERFORMANCE.

Cylinder head gasket.

Increasing output performance. Blanking trials and experience from ongoing production have proven Servo Direct Technology from Schuler offers higher productivity compared to conventional presses.

The results so far: on average, a 70 % increase in output without die optimization, right from the first attempt.

Formed part	Operating mode	Component-specific press force	Depth of draw	Max. stroke rate conventional	Max. stroke rate servo	Increase
Flange	combined progressive	1,200 kN (135 US tons)	30 mm (1.2 in)	30	56	+ 87 %
Gas generator holder	combined progressive	1,300 kN (145 US tons)	60 mm (2.4 in)	25	40	+ 60 %
Holder	combined progressive	2,000 kN (255 US tons)	40 mm (1.6 in)	30	60	+ 100 %
Cage	combined progressive	2,400 kN (270 US tons)	50 mm (2.0 in)	30	50	+ 67 %
Cross plate	combined progressive	4,000 kN (450 US tons)	90 mm (3.5 in)	23	33	+ 43 %
Cover	combined progressive	6,900 kN (780 US tons)	40 mm (1.6 in)	15	34	+ 126 %
Center console	transfer	6,000 kN (675 US tons)	190 mm (7.5 in)	12	17	+ 42 %
Insert cup	transfer	6,600 kN (740 US tons)	130 mm (5.1 in)	8	15	+ 88 %
Carrier	transfer	7,190 kN (800 US tons)	67 mm (2.6 in)	14	30	+ 114 %
Tank filler neck	transfer	9,650 kN (1,090 US tons)	145 mm (5.7 in)	14	18	+ 29 %
Seat shell	transfer	12,600 kN (1,420 US tons)	130 mm (5.1 in)	16	24	+ 50 %
Side piece	transfer	14,750 kN (1,660 US tons)	80 mm (3.2 in)	19	29	+ 53 %

Component with welded nut.

Integration of downstream processes. Frequently, component production involves several production steps which take up time and productivity when performed one after another. Highly dynamic servomotors from Schuler make completely new production methods possible. Processes such as welding can be reliably integrated directly into the press cycle and deliver high levels of output.

This is possible by implementing user-programmable time/distance procedures as well as rest times in the press cycle. The result: economical production of complex part geometries and maximum output levels with the highest quality.

Formed part	Operating mode	Component-specific press force	Integrated process	Output
Plate	combined progressive	1,600 kN (180 US tons)	Welded nut	64
Cage	combined progressive	3,200 kN (360 US tons)	Rivet nut	70
Backing plate	combined progressive	4,800 kN (540 US tons)	Piercing nut	50
Striker plate	combined progressive	4,900 kN (550 US tons)	Thread forming	49
Connection member	combined progressive	5,000 kN (560 US tons)	Welding component	32
Carrier	combined progressive	5,800 kN (650 US tons)	Thread forming	50
Housing	combined progressive	6,000 kN (675 US tons)	Clinching	30
Cross plate	transfer	4,500 kN (500 US tons)	Punched pin	38
Plate	transfer	5,300 kN (600 US tons)	Thread forming	43
Mount	transfer	6,000 kN (675 US tons)	Welded nut	24

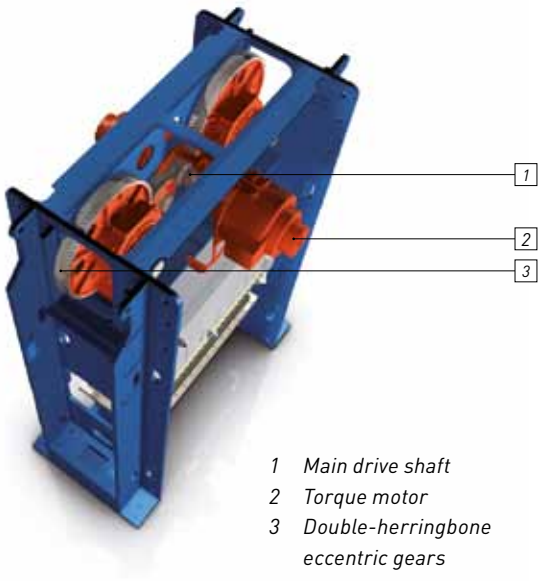
SERVO PRESSES IN MONOBLOCK DESIGN.
2,500 TO 8,000 KN (280 TO 900 US TONS).

Flexible production with servo presses in monoblock design. Press force: 4,000 kN (450 US tons).

Reliable components. The monoblock press body is implemented as a stress-free annealed welded structure. The eccentric gears have a double herringbone profile to provide axial guidance and to reduce noise. The slide roller guide is preloaded to eliminate play. This results in components that guarantee high availability of the machine.

Tryout. Starting up new dies demands the greatest flexibility. The setup speed can be varied by a handwheel. The slide can be stopped in any position and the direction of movement can be reversed if required. The quick-lift function makes it possible to move the slide to the maximum top reversing point at any moment during the setup procedure.

Setup. Different die change systems such as a tandem change cart or an extendable bed plate achieve short changeover times.



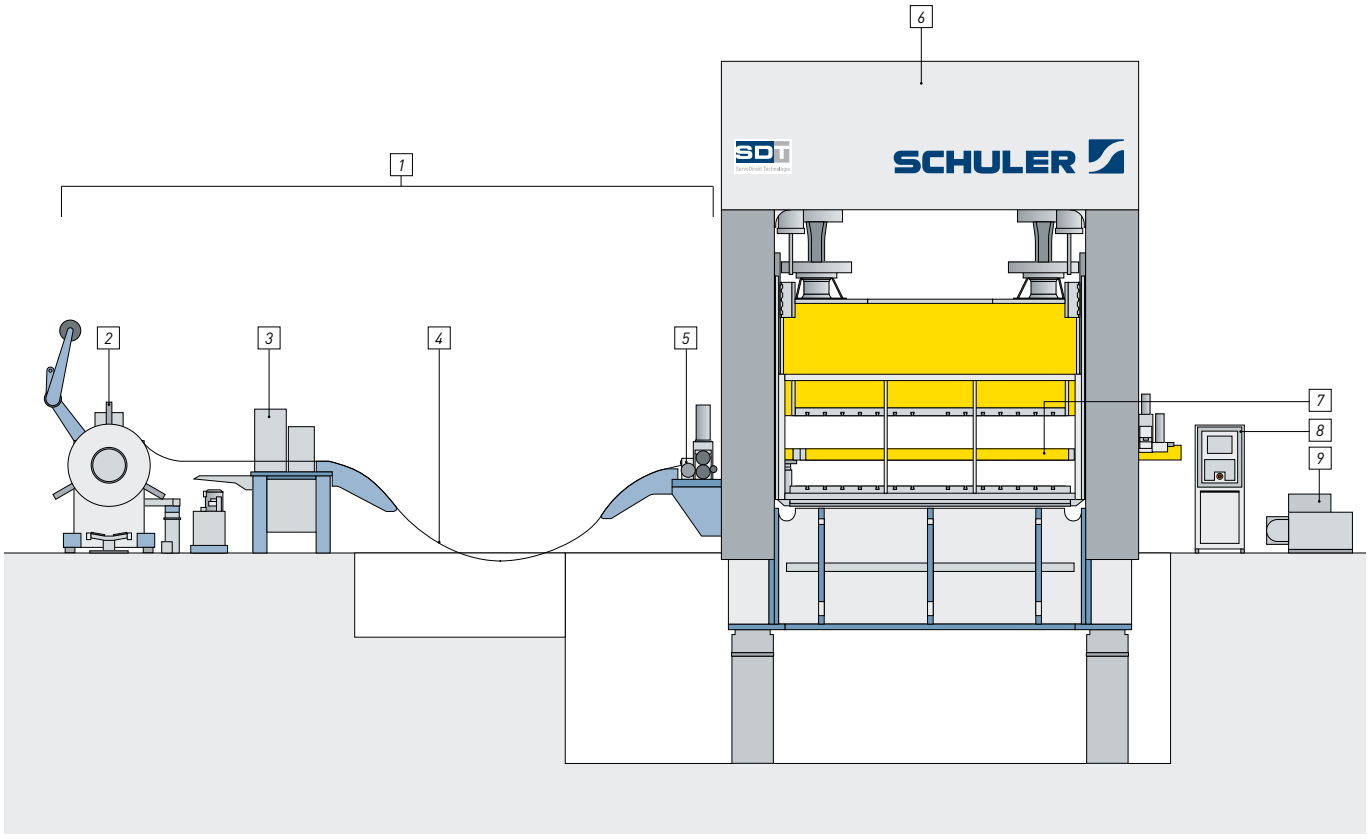
Schuler builds servo presses in a monoblock design with four different standard sizes: 2,500 kN, 4,000 kN, 6,300 kN, 8,000 kN (280, 450, 700, 900 US tons).

VIDEO

Find out more about the MSD 630 servo press in monoblock design.
Simply scan the QR code using the camera of your smartphone or tablet.
http://bit.ly/1cQ69GI

SERVO PRESSES IN MONOBLOCK DESIGN.
IN-DEPTH TECHNOLOGY.

SERVO PRESS IN MONOBLOCK DESIGN WITH COIL FEED LINE



LEGEND

1 *Coil feed line*
2 *Decoiler*
3 *Leveling machine*
4 *Loop pit*
5 *Roll feed unit*
6 *Servo press in monoblock design*
7 *Electronic, modular tri-axis transfer*
8 *Control desk*
9 *Energy accumulator*

Model	MSD 250		MSD 400	MSD 630	MSD 800
Press force [kN]	**2,500**		**4,000**	**6,300**	**8,000**
Press force [US tons]	**280**		**450**	**700**	**900**
Bolster length [mm]	**Bolster width [mm]**				
2,000 (78.7 in)	1,100 (43.3 in)				
2,500 (98.4 in)		1,100 (43.3 in)			
3,050 (120.1 in)			1,400 (55.1 in)		
4,000 (157.5 in)				1,800 (70.9 in)	1,800 (70.9 in)
Shut height [mm] [in]	550 21.7	600 23.6	700 27.6	1,000 39.4	1,000 39.4
Slide stroke [mm] [in]	32 – 160 1.3 – 6.3	40 – 200 1.6 – 7.9	60 – 300 2.4 – 11.8	80 – 400 3.2 – 15.8	80 – 400 3.2 – 15.8
Slide adjustment [mm] [in]	150 5.9	200 7.9	250 9.8	300 11.8	300 11.8
Stroke rate [rpm]*	3 – 160	3 – 140	3 – 90	3 – 60	3 – 60

All information for systems with two-conrod design. Subject to technical modifications. Metric dimensions are binding.
* Stroke rate depending on programmed stroke height and kinematics.

THE ADVANTAGES

- Short delivery times and optimized spare part management due to standardized modules
- Maximum production flexibility due to programmable stroke heights and motion sequences
- Increased part quality and die life due to motion sequences optimized to the particular forming requirements
- Shorter die tryout times using handwheel for setup and tryout functions
- Lower energy costs due to efficient drive solution

SERVO PRESSES IN TIE ROD DESIGN.
6,300 KN TO 32,000 KN (700 TO 3,600 US TONS).

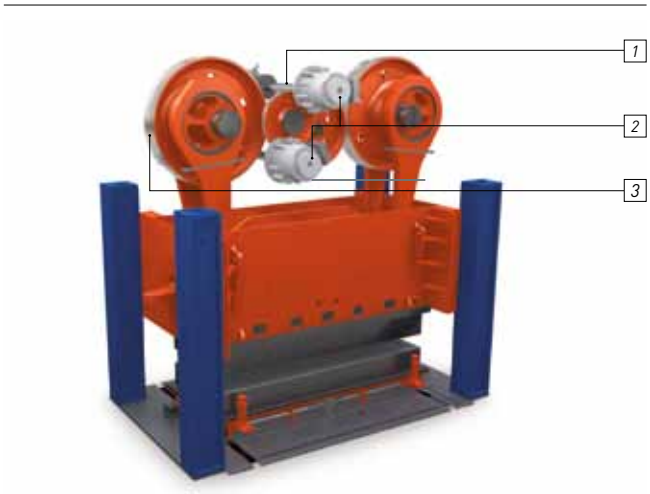
Servo press in tie rod design at a domestic appliance manufacturer. Press force: 16,000 kN (1,800 US tons).

Highest line availability. The simulation software developed by Schuler allows optimum tuning of slide motion properties and automation parameters – for the highest process reliability. The design of all components has been optimized using FEM calculations. The press bodies are built as welded structures and annealed to reduce stress.

Reduction in setup times. Tryout functions using handwheel function:

- Die closing movement with variable setup speed
- Intermittent movement with reversing movement when required
- Spotting function with selectable die force
- Quick-lift function for rapid die opening

Die change systems: Moving bolsters in front-to-back or T-track configuration for semi or fully automatic setup to ensure rapid setup times.



1 Main drive shaft
2 Torque motor
3 Double-herringbone eccentric gears

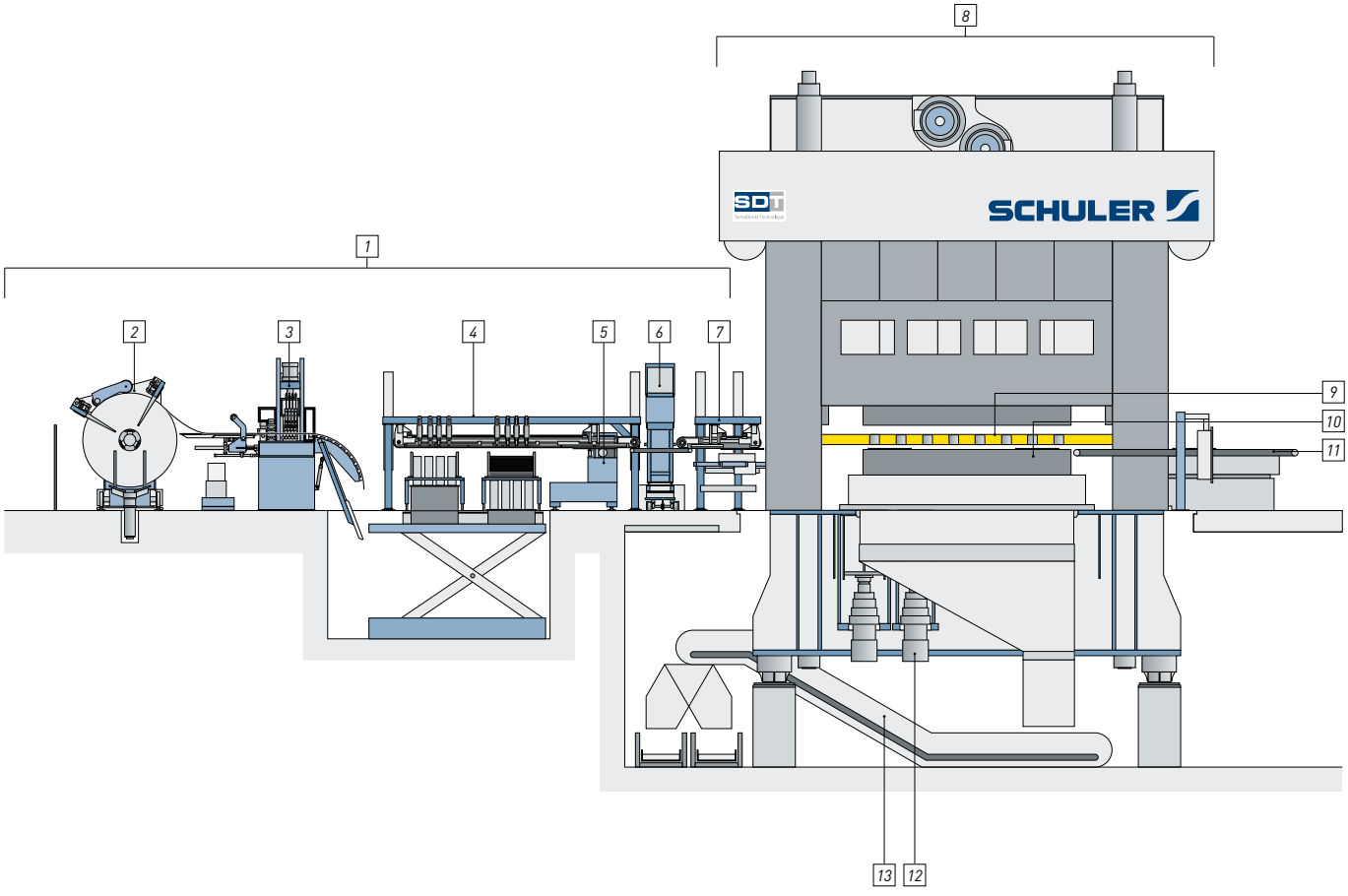
Schuler builds servo presses in tie rod design, with forces from 6,300 to 32,000 kN (700 to 3,600 US tons).

VIDEO

Find out more about servo presses in tie rod design.
Simply scan the QR code using the camera of your smartphone or tablet.
http://bit.ly/1fDx3Cb

SERVO PRESSES IN TIE ROD DESIGN.
IN-DEPTH TECHNOLOGY.

SERVO PRESS IN TIE ROD DESIGN WITH COIL FEED LINE AND DESTACKER



LEGEND

1 *Material feed*
2 *Decoiler*
3 *Leveling machine*
4 *Destacker*
5 *Roll feed unit*
6 *Coil or blank lubricating unit*
7 *Transfer and centering station*
8 *Servo press in tie rod design*
9 *Electronic, modular tri-axis transfer*
10 *Combined progressive or transfer die*
11 *Outfeed belt*
12 *Hydraulic, modular drawing cushion*
13 *Scrap handling system*

Model	TSD 630 TSC 630	TSD 800 TSC 800		TSD 1000 TSC 1000	TSD 1100 TSC 1100	TSD 1250 TSC 1250		TSD 1600 TSC 1600		TSD 2000 TSC 2000	TSD 2500 TSC 2500	TSD 3200 TSC 3200
Press force [kN]	**6,300**	**8,000**		**10,000**	**11,000**	**12,500**		**16,000**		**20,000**	**25,000**	**32,000**
Press force [US tons]	**700**	**900**		**1,100**	**1,200**	**1,400**		**1,800**		**2,250**	**2,800**	**3,600**
Bolster length [mm]	**Bolster width [mm]**											
4,000 **(157.5 in)**	1,600 (63.0 in)	1,800 (70.9 in)										
4,600 **(181.1 in)**		1,800 (70.9 in)	2,200* (86.6 in)	1,800 (70.9 in)								
5,000 **(196.9 in)**					2,200* (86.6 in)							
5,100 **(200.8 in)**					2,200* (86.6 in)	1,800 (70.9 in)	2,200* (86.6 in)	1,800 (70.9 in)				
6,000 **(236.2 in)**									2,500* (98.4 in)			
6,100 **(240.2 in)**						1,800 (70.9 in)	2,200* (86.6 in)	1,800 (70.9 in)	2,500* (98.4 in)	2,500* (98.4 in)	2,500* (98.4 in)	2,500* (98.4 in)
7,000 **(275.6 in)**										2,500* (98.4 in)	2,500* (98.4 in)	2,500* (98.4 in)
Shut height [mm] **[in]**	900 35.4	1,100 43.3	1,100 43.3	1,100 43.3	1,200 47.2	1,100 43.3	1,200 47.2	1,100 43.3	1,300 51.2	1,400 55.1	1,400 55.1	1,400 55.1
Slide stroke [mm] **[in]**	100–350 3.9–13.2	120–450 4.7–17.7	120–500 4.7–19.7	120–450 4.7–17.7	150–600 5.9–23.6	120–450 4.7–17.7	150–600 5.9–23.6	150–450 5.9–17.7	200–600 7.9–23.6	200–700 7.9–27.6	230–700 9.1–27.6	230–700 9.1–27.6
Slide adjustment [mm] **[in]**	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8	300 11.8
Stroke rate [rpm] **TSD** **TSC**	3–70	3–60 3–50	3–50	3–50	3–45 3–36	3–45 3–38	3–40 3–34	3–40 3–32	3–36	3–34	3–30	3–30

All information for systems with two-conrod design. Subject to technical modifications. Metric dimensions are binding.
* Four-conrod design ** Stroke rate depending on programmed stroke height and kinematics.

THE ADVANTAGES

- Maximum production flexibility due to user-programmable stroke heights and motion sequences
- Significant output boost compared to conventional mechanical presses
- Increased part quality and die life due to motion sequences optimized to the particular forming requirements
- Best suited for processing high-strength steels by installation technology resistant to cutting impact
- Highest availability due to long service life and low maintenance requirements
- Shorter die testing times due to setup and try-out functions

KNUCKLE-JOINT PRESSES WITH SERVO DRIVE.
2,500 TO 15,000 KN (280 TO 1,700 US TONS).

Knuckle-joint press with servo drive at an automotive components supplier. Press force: 8,000 kN (900 US tons).

High system stiffness. In combination with the slide movement that is characteristic of the knuckle-joint, the very rigid press concept makes it possible to manufacture ready-to-install precision parts. Each machine permits economical blanking, drawing, embossing, punching and calibrating in one operating sequence, while the various stations can also be combined with one another.

Optimized overall process. User-programmable servo-motors allow knuckle-joint kinematics to be exactly adapted to the requirements of the specific components. In addition, all components of the press peripherals such as coil feed, transfer, drawing cushion and ejector are optimally integrated into the overall process. The results: increased production quantities, higher component quality and longer die life.

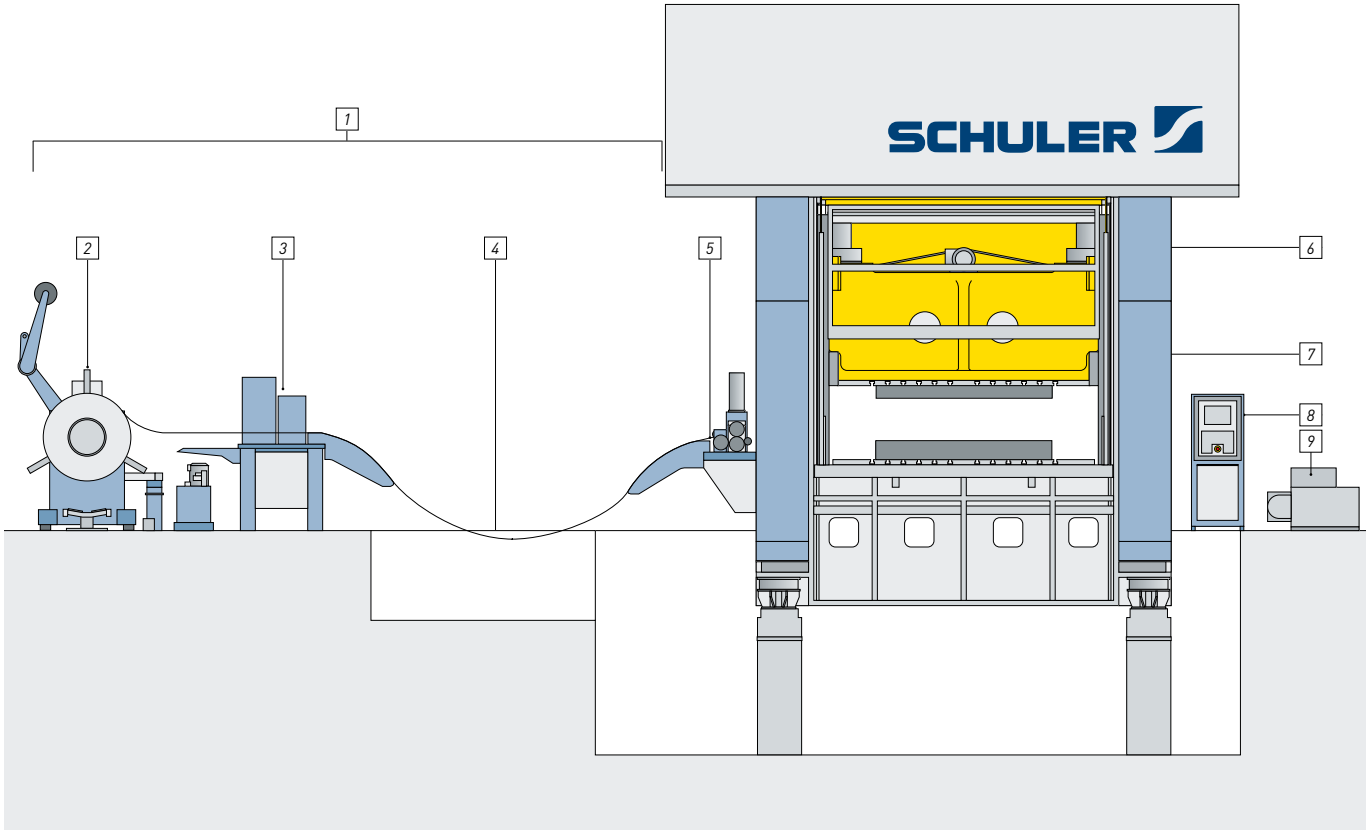
Knuckle-joint system.

VIDEO

Find out more about knuckle-joint presses with servo drive.
Simply scan the QR code using the camera of your smartphone or tablet.
http://bit.ly/1doAB6o

KNUCKLE-JOINT PRESSES WITH SERVO DRIVE.
IN-DEPTH TECHNOLOGY.

KNUCKLE-JOINT PRESS WITH SERVO DRIVE AND COIL FEED LINE



LEGEND

1 *Material feed*
2 *Decoiler*
3 *Leveling machine*
4 *Loop pit*
5 *Roll feed unit*
6 *Knuckle-joint press with servo drive*
7 *Combined progressive or transfer die*
8 *Control*
9 *Energy accumulator*

Model	MSK 250	MSK 400	MSK 630	MSK 800	MSK 1000	MSK 1500
Press force [kN]	**2,500**	**4,000**	**6,300**	**8,000**	**10,000**	**15,000**
Press force [US tons]	**280**	**450**	**700**	**900**	**1,100**	**1,600**
Bolster length [mm]	**Bolster width [mm]**					
2,000 (78.7 in)	1,000 (39.4 in)					
2,500 (98.4 in)		1,100 (43.3 in)				
3,500 (137.8 in)			1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)
Shut height [mm] [in]	600 23.6	700 27.6	800 31.5	800 31.5	800 31.5	800 31.5
Slide stroke [mm] [in]	40 – 160 1.6 – 6.3	50 – 200 2.0 – 7.9	75 – 300 3.0 – 11.8	75 – 300 3.0 – 11.8	75 – 300 3.0 – 11.8	75 – 300 3.0 – 11.8
Slide adjustment [mm] [in]	150 5.9	150 5.9	200 7.9	200 7.9	200 7.9	200 7.9
Stroke rate [rpm]	3 – 160	3 – 120	3 – 80	3 – 70	3 – 60	3 – 50

All information for systems with two-conrod design. Subject to technical modifications. Additional sizes are available on request.
Metric dimensions are binding.
* Stroke rate depending on programmed stroke height and kinematics.

THE ADVANTAGES

- Significant increase in productivity compared to conventionally driven knuckle-joint presses
- Maximum production flexibility due to programmable stroke heights and motion sequences
- High system stiffness for tight component tolerances and reduced cutting impact
- Drawing, bending, cleaning, blanking and calibrating operations in one press cycle
- Reliable repeat accuracy, even with fluctuating material thicknesses and strengths
- Excellently suited for processing high-strength steels
- Optimum of integration slide movement to the automation
- Shorter die start-up times by precise setup using handwheel
- Long die service life
- Compact and durable design for investment value

KNUCKLE-JOINT PRESSES WITH SERVO DRIVE.
PRECISION BLANKING WITH PSK/PSK PLUS.

PRECISION BLANKING WITH PSK SERVO KNUCKLE-JOINT PRESS

Greater cutting penetration, less breakthrough. The quality requirements for stamped products are rising. Components with a higher cutting penetration, up to 60 – 70% before breakthrough, are required more and more frequently. Particularly in the components industry, standards for safety relevant parts or technical components are continuously increasing.

Progress in vehicle development with more performance and less consumption from cars are leading to minimum tolerances in stampings and definitely raising the bar for component suppliers.

With the PSK knuckle-joint press, you can reliably meet a requirement profile of this kind.

PRECISION BLANKING PLUS WITH SERVO KNUCKLE-JOINT PRESS PSK PLUS

High productivity, excellent quality. Today's, manufacturers companies are pressured to meet high commercial requirements. Stamping companies will only remain competitive if they can achieve unit costs that are competitive on the market. This calls for efficient production of high-precision parts in combined progressive or transfer dies.

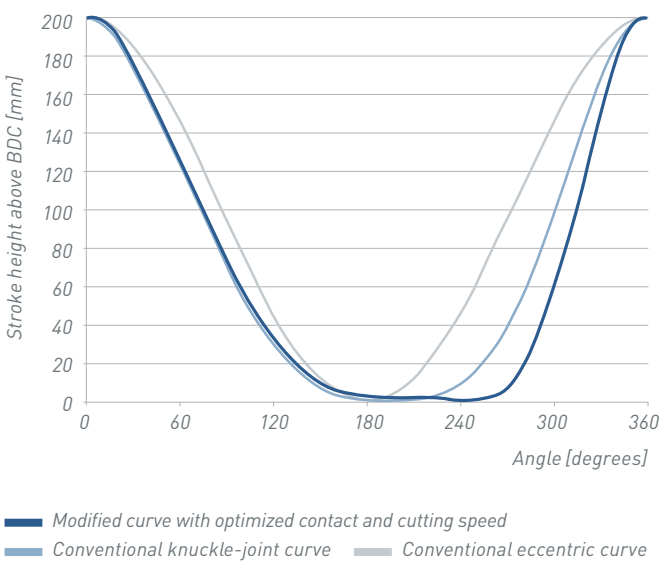
By minimizing rework, expensive process steps can be eliminated and also reduce handling costs. Schuler's PSK PLUS knuckle-joint press with additional functions offers the precision stamping and forming system to respond flexibly to such market requirements.

This new concept offers maximum precision and efficiency rolled into one – and opens up an entirely new performance class for you.

Normal blanking	Precision blanking	*Precision blanking PLUS*	Fine blanking
Conventional blanks with straight cut proportion of up to 30%	*Precision blanks with higher quality requirements*	*High-precision blanks by additional functions in the press*	*Fine blanks with straight cut proportion of 100%*

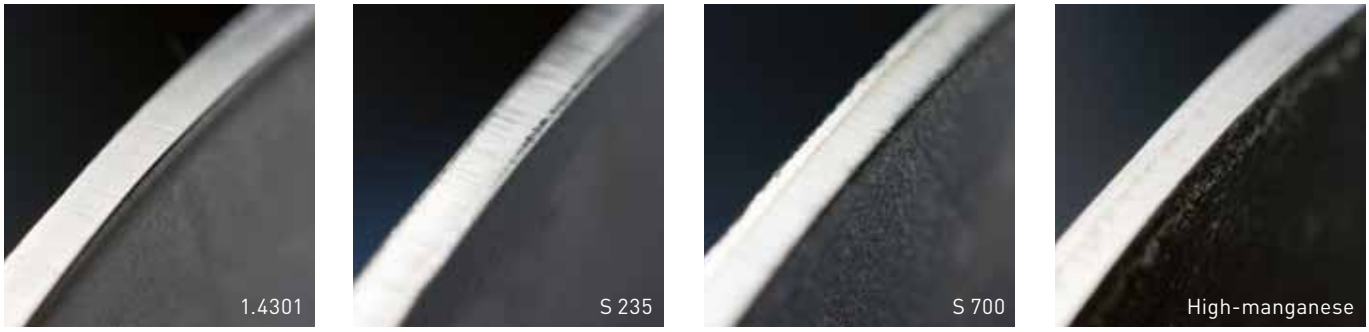
Blanking process

Knuckle-joint press with servo drive for precision stamping and forming processes. Press force: 6,300 kN (700 US tons).



Example of a modified curve with optimized contact and cutting speed.

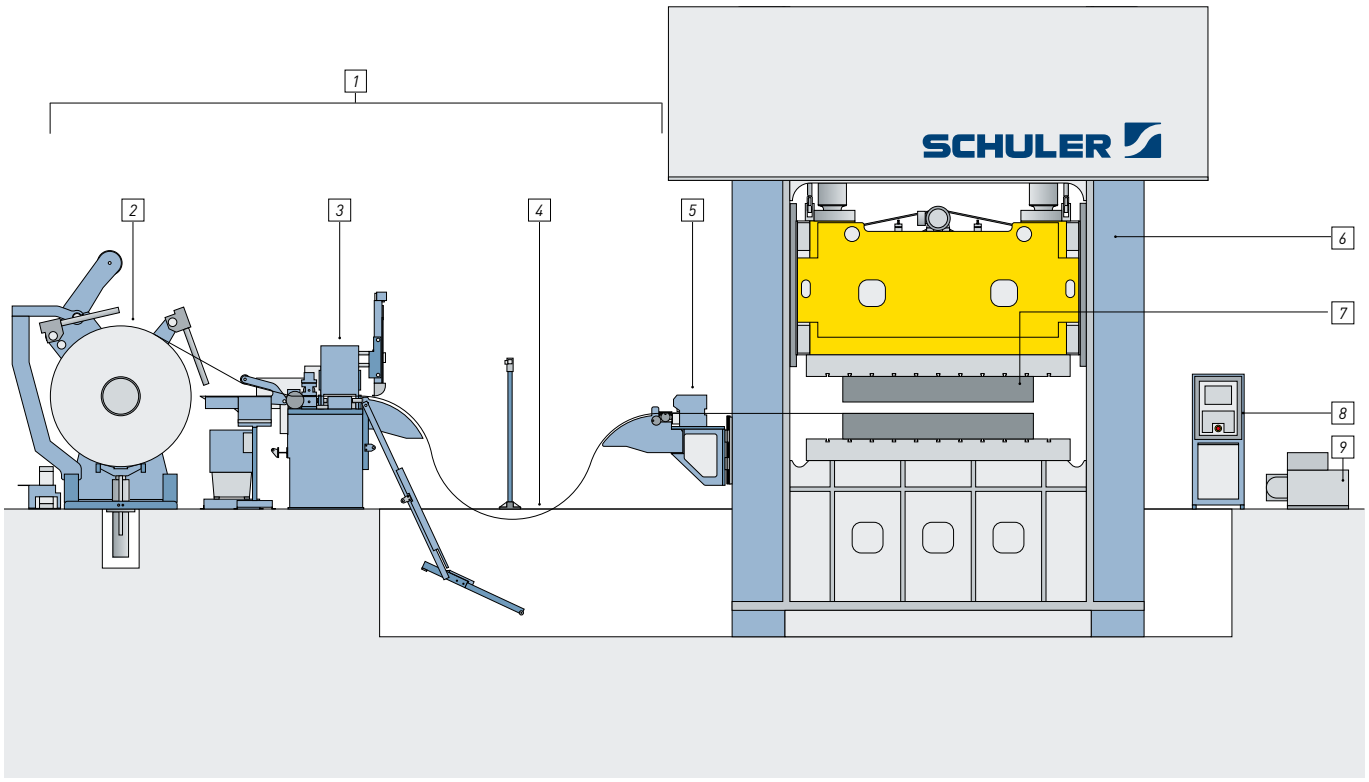
THE RESULT



Cut edges of various materials: high straight cut penetration, good perpendicularity.

KNUCKLE-JOINT PRESSES WITH SERVO DRIVE.
PRECISION BLANKING WITH PSK/PSK PLUS.
IN-DEPTH TECHNOLOGY.

KNUCKLE-JOINT PRESS WITH SERVO DRIVE FOR PRECISION STAMPING AND FORMING PROCESSES WITH COIL FEED LINE



LEGEND

1 *Material feed*
2 *Decoiler*
3 *Leveling machine*
4 *Loop pit*
5 *Roll feed unit*
6 *Knuckle-joint press with servo drive*
7 *Progressive or transfer die*
8 *Control*
9 *Energy accumulator*

Model	PSK/PSK *PLUS* 250	PSK/PSK *PLUS* 400	PSK/PSK *PLUS* 630	PSK/PSK *PLUS* 800	PSK/PSK *PLUS* 1000	PSK/PSK *PLUS* 1500
Press force [kN]	**2,500**	**4,000**	**6,300**	**8,000**	**10,000**	**15,000**
Press force [US tons]	**280**	**450**	**700**	**900**	**1,100**	**1,600**
Bolster length [mm]	**Bolster width [mm]**					
2,000 (78.7 in)	1,000 (39.4 in)	1,100 (43.3 in)				
2,500 (98.4 in)	1,000 (39.4 in)	1,100 (43.3 in)	1,300 (51.2 in)	1,300 (51.2 in)		
3,000 (118.1 in)		1,100 (43.3 in)	1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)
3,500 (137.8 in)			1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)	1,300 (51.2 in)
Shut height [mm] [in]	600 23.6	700 27.6	800 31.5	800 31.5	900 35.4	900 35.4
Slide stroke [mm] [in]	40–160 1.6–6.3	50–200 2,0–7.9	75–300 3,0–11.8	75–300 3,0–11.8	75–300 3,0–11.8	75–300 3,0–11.8
Slide adjustment [mm] [in]	150 5.9	150 5.9	200 7.9	200 7.9	200 7.9	200 7.9
Stroke rate* [rpm]	3–160	3–140	3–100	3–80	3–70	3–60

All information for systems with two-conrod design. Subject to technical modifications. Metric dimensions are binding.
* Stroke rate depending on programmed stroke height and kinematics

THE ADVANTAGES

- Outstanding part quality with high straight cut penetration
- Significant increase in productivity compared to conventionally driven knuckle-joint presses
- Maximum production flexibility due to user-programmable stroke heights and motion sequences
- High system stiffness for tight component tolerances and reduced cutting impact
- Drawing, bending, embossing, blanking and calibrating operations in one press operation with a progressive or transfer die
- Suitable for processing a wide range of materials
- Optimized slide kinematics
- Long die service life
- Secure investment due to compact and durable design that retains its value

AUTOMATION BY SCHULER.
AUTOMATICALLY GREATER FLEXIBILITY.

As well as innovative servo press technology, you benefit from the latest developments from Schuler Automation. These components are specifically adapted to the highly dynamic requirements of servo press technology.

Coil feed line.

»PowerFeed« highly dynamic roll feed.

COIL FEED LINES

Precise material feed from the coil to progressive die and transfer presses. Available in short or long design with a loop, in order to cover a wide range of applications.

ROLL FEED UNITS

The »Power Feed« roll feed unit shortens the automation time, especially with highly dynamic presses. ServoDirect drives provide greater dynamics and system accuracy, as do the low-play and maintenance-free planetary gears.

Tri-axis transfer with servo drive.

Destacker.

THREE-AXIS TRANSFER SYSTEMS

High-performance transfer generation in three sizes for a wide range of applications. High output rate, low vibration and short changeover times.

DESTACKER

An individual solution or in combination with a coil feed line, destackers guarantee the highest flexibility and efficiency.

PROCESS MANAGEMENT.
EFFICIENCY ALONG THE LINE.

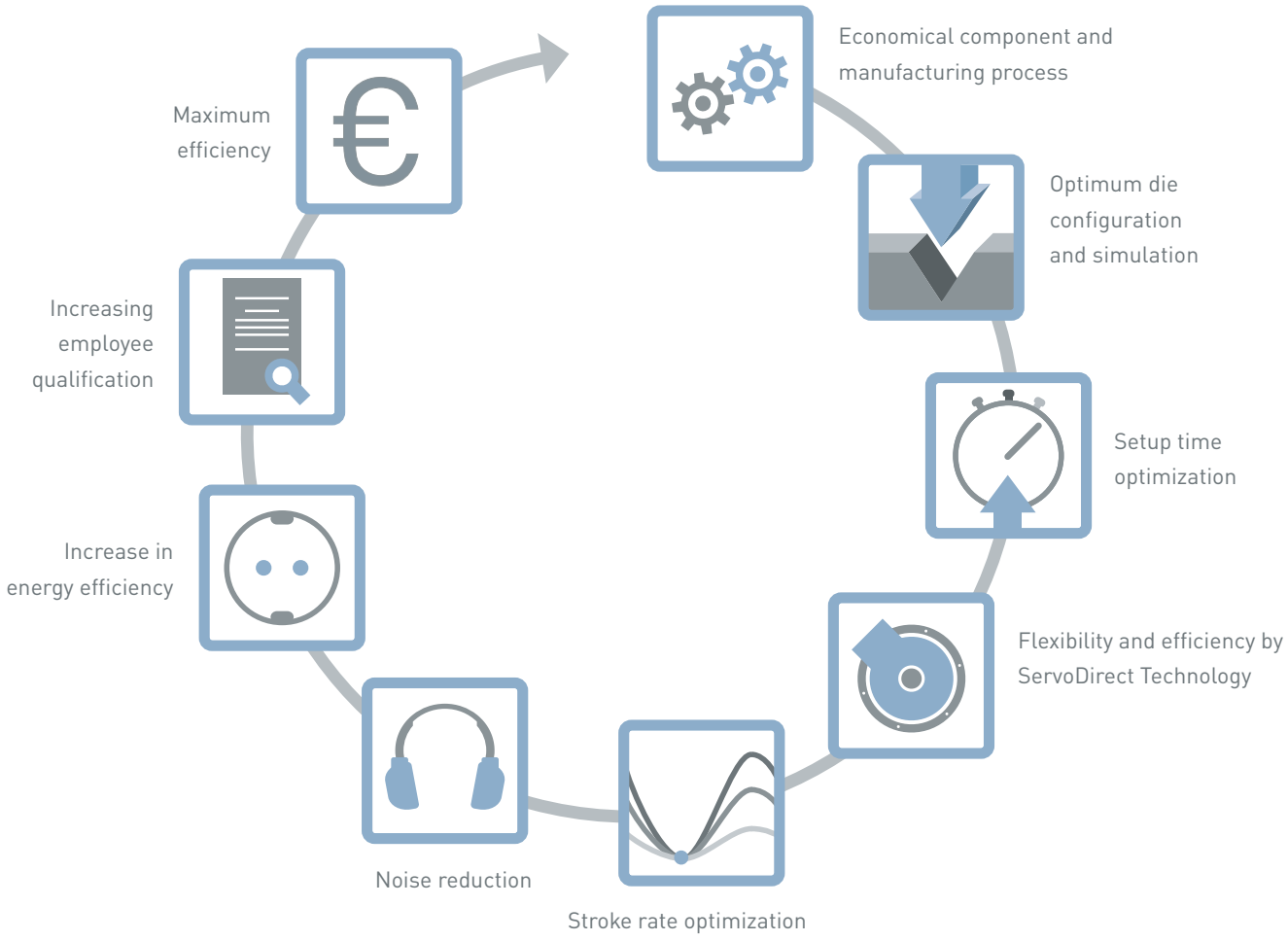
To achieve efficiency and economic strength in production, having the best machines is not enough. To achieve all of the economic opportunities, the entire process must be analyzed to integrate and optimize the process along with automation and slide movement.

Schuler is available as an expert partner with various services such as process consulting or training. First and foremost, each service focuses on boosting the economic performance of your company.

Economical component and manufacturing process. All production planning starts with the decision of which production process should be used. In this consideration, it is necessary to calculate the material costs and output per component, as well as accruing tooling costs. Schuler's personnel is at your side with component calculations based on your individual component and tooling data.

Optimum die configuration. The objective of any production company is to achieve the longest possible die service life, while operating with the greatest possible stroke rates. We offer you advice in die configuration and design to ensure this is successful. We support you in defining press and transfer movements in advance, using virtual simulation for optimum output and clearance. This support is complemented by training courses dealing with the topic of optimized die design adapted to the requirements of servo technology.

Setup time optimization. The current trend towards smaller batch sizes goes hand-in-hand with frequent die changes and increasing setup costs. Our »setup workshop« shows you ways to optimize setup times with standardized processes and efficient work sequences.



Stroke rate optimization. It is only possible to achieve maximum stroke rates and a long-term boost in economic performance if all process components are working together optimally. Suitable methods for successful implementation are revealed in our training course, »Process Optimization« .

Increase in energy efficiency. It is not always easy to achieve the greatest possible energy savings without affecting yield. Efficient machine technology from Schuler means you are always one step ahead of the competition. We offer you individual advice on optimum energy use in press operations, such as programming an energy-saving stand-by operation, as well as energy efficiency programs for new machines.

Furthermore, we are ready to provide you with active support when it comes to training your operators.

Increasing employee qualification. Continuous developments in technology require training in specialized areas in order to guarantee efficient processes. As a result, well trained employees represent an important component of an efficiently run company. With an extensive training program, Schuler offers your company and your employees many opportunities for continued education.

SCHULER **SERVICE.**
OPTIMUM SERVICE FOR MORE PERFORMANCE.

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment.

Schuler Service – Customer-oriented, efficient, worldwide.

EXPERTISE
PARTNERSHIP
PRODUCTIVITY
SAFETY
FUTURE

Over 900 service employees worldwide provide expert support 24/7 in close cooperation with you – our partners. Our main priority is always to ensure the ultimate productivity and safety of your production equipment in order to secure your company's continued success.

With over 170 years of experience and expertise, we can guarantee the best possible support for the operation of your machines – and not only those supplied by Schuler, but by all other manufacturers. Whatever the situation, Schuler Service has the right solution for your specific needs.

OUR SERVICES FOR YOU.

Technical Customer Support:
- Machine inspections
- Safety inspections
- Preventive maintenance
- Repair
- Repair welding
- Production support

Components and Accessories:
- Spare parts and spare part packages
- Maintenance kits
- Repair parts
- Replacement parts

Project Business:
- Modernization
- Retrofits
- Refurbishment
- Machine relocations

Special Services:
- Service contracts
- Hotline and remote service
- Training
- Tailored customer training
- Optimizing plant & processes
- Consulting

Used Machinery:
- Purchase and sale
- Evaluation

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Monoblock servo presses

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