

MAXIMUM PRESS FORCE. ULTIMATE PRECISION.

ANDRITZ Kaiser HeavyLine

Heavy-duty punching and forming conventional presses and servo presses from 10,000 to 25,000 kN

ANDRITZ

KAISER HeavyLine heavy mechanical presses

The name ANDRITZ Kaiser stands for highest-quality punching and forming technology. Decades of experience and the technical execution guarantee extraordinary precision, productivity and reliability.

ANDRITZ Kaiser delivers tailor-made solutions for every application - from presses alone to complete production lines with conveyor systems, automation, tool and parts handling. Based on our standard machines, this modular construction method provides universal application possibilities with extensive standardization of the main assemblies. Our experienced Engineering Team develops, designs and plans the systems according to our customer`s individual requirements. Worldwide, more than 2,500 stamping and forming machines reliably produce high-quality products.

The company was founded by Otto Kaiser in 1945 in Pforzheim. The company remained in family hands until 2004 when it became a member of the ANDRITZ Group. As part of the ANDRITZ Metals business area, we continue our long-standing history of excellence, successfully combining modernity and tradition, stability and flexibility, safety and inventiveness.

ANDRITZ KAISER – WITH EXPERIENCE AND INNOVATION FOR THE FUTURE.



KAISER presses from 4000 kN to 25.000 kN

At a glance

Quality and precision

For over 70 years, ANDRTIZ Kaiser has defined state-of-the-art technology for punching and forming machines. In 1990, the first 10,000 kN large press was delivered to a customer. Today, ANDRITZ Kaiser is able to supply large presses up to 25,000 kN and a table length of up to 6,000 mm.

HEAVYLINE WITH LONGITUDINAL SHAFT AND 2 PRESSURE POINTS

Press force in kN	Drive	Table length in mm	Table width in mm	Stroke max in mm
10 000	2P-LW	3 500-5 000	1 600-2 200	100-400
12 500	2P-LW	3 500-5 000	1 600-2 200	500
15 000	2P-LW	3 500-5 000	1 600-2 200	500

HEAVYLINE WITH TRANSVERSE SHAFT AND 4 PRESSURE POINTS

Press force in kN	Drive	Table length in mm	Table width in mm	Stroke max in mm
10 000	4Q	4 000-6 000	1 800-2 500	500
12 500	4Q	4 000-6 000	1 800-2 500	500
16 000	4Q	4 000-6 000	2 000-2 500	600
20 000	4Q	4 000-6 000	2 000-2 500	600/750
25 000	4Q	4 000-6 000	2 000-2 500	600/750

All HeavyLine presses are available with conventional drive or alternatively as servo press. In addition, longitudinal shaft-forming presses are available with conventional draw-crank drive („link-motion").

Focus on quality

Precision of small-to-large-size

ANDRITZ Kaiser presses were and are precision stamping machines in their origin. These design principles are consistently implemented even for large presses. This makes all HeavyLine presses leaders in stability and accuracy.

Our technical solution	Your advantage
All main welded press frame parts are designed according FEM / FKM standard	Long life cycle of all welded joints
All main welded press frame parts are manufactured in accordance with ANDRITZ Kaiser welding norm and are stress-relieved by heat treatment before machining	High precision components Long term productivity
Slide guiding system with clearance-free and prestressed linear guides	Parallel slide movement <0.05mm Reduced vibrations of the slide cutting operation Press guides the tool Increasing tool life time
Continuous pressure oil lubrication system for all lubrication points	• Continuous lubrication of all bearing zones • Up to 10 times more oil than intermittent lubrication systems • Continuous cooling of all bearings zones • Uniform heating of the machine frame through continuous oil return
Integrated slide locking system	Safe entrance to the tool area in case of machine stop



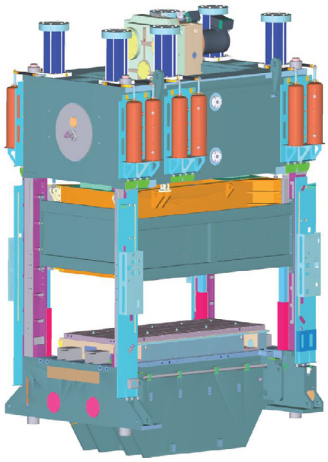
Set-up of the HeavyLine

A glimpse inside

The HeavyLine was built as a precision machine according to the highest standards, successfully combining tried and tested principles with new developments.

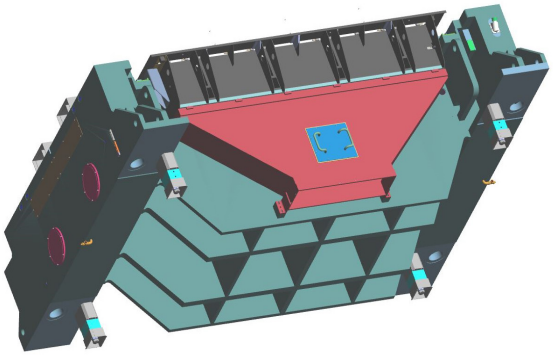
MAIN BODY

The stable main frame is built in split design, consisting of press crown, columns, bolster plate (moving bolsters) and press table. The elements are linked via prestressed tension rods. All press parts are built as welded steel constructions, stress-free annealed after welding. All elements are optimized using finite elements in order to maximizing stability.
The long service life of our presses is guaranteed by an adapted FEM calculation of all core components. Continuous quality standards and quality controls are the basis for a long machine availability.



PRESS TABLE

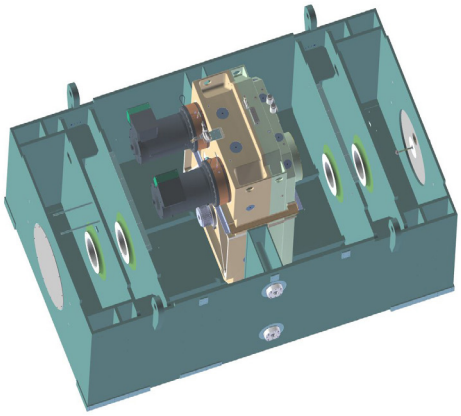
The standard design of all press tables are as a stable 4-wall construction. Special designs are possible according customer demands as example use of tool cushions.



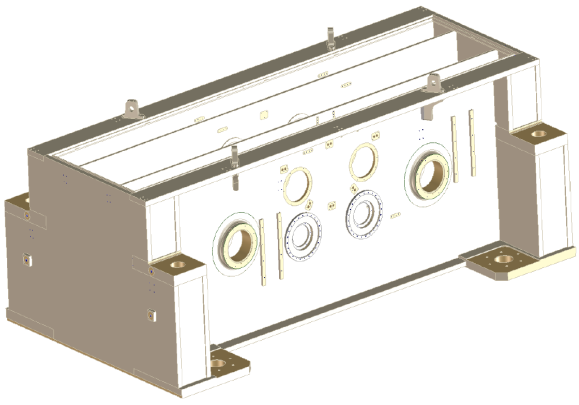
Press table 4 wall design

PRESS CROWN

All press crowns are designed as a stable 4-wall construction. Either as a transverse version for all presses with a longitudinal shaft or as a longitudinal version for all presses with a transverse shaft.



Press crown for longitudinal shaft

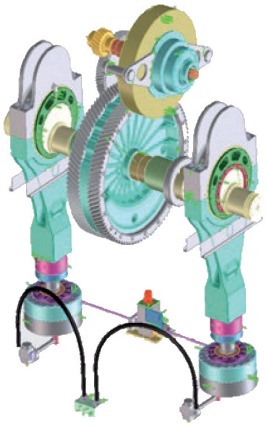


Press crown for transverse shaft

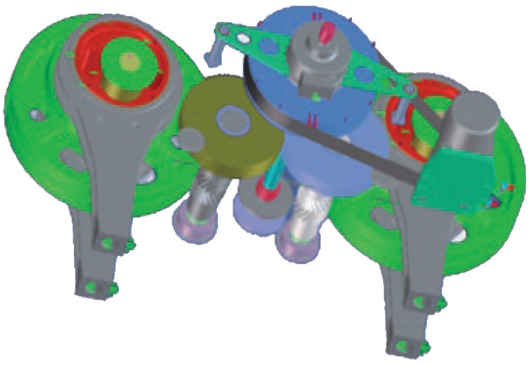
Drive systems and solution

Power and flexibility

The drive system is the heart of every press. ANDRITZ Kaiser combines proven design principles for optimum machine performance. Work capacity and press force distance can be adapted to any forming application.



Longitudinal shaft with conventional center drive



Transverse shaft drive with conventional drive

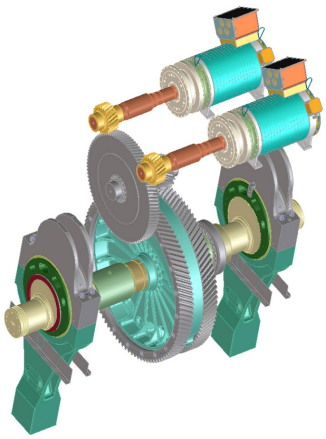
2-POINT LONGITUDINAL SHAFT WITH CENTER DRIVE

A frequency controlled asynchronous motor drives the conventional press. The eccentric shaft is manufactured from a nickel-chromium steel forging, heat treated and ground, and has 4 bush bearings. A two-stage transmission provides high press force and work capacity. Widely spaced connecting rods result in a high degree of tilting rigidity, especially in the case of off-center loading. Counter balancing weights ensure a safe and quiet machine standing. In addition to the classic gear box, a link-motion version (draw-crank mechanism) is also available.

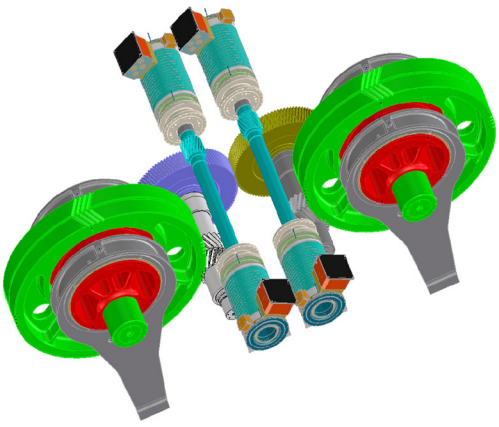
4-POINT TRANSVERSE SHAFT DRIVE

A frequency controlled asynchronous motor with a flywheel drives the conventional press. The power is transmitted to the eccentric shafts by flywheel and hydraulically operated clutch-&-brake-combination, via multi-stage gear transmission with herringbone gearing. The motors are arranged close to press crown for saving space and easy access for inspection and maintenance. For safe power routing to the slide and improvement the best table-slide parallelism the distance of the rods are as far apart as possible. The two shafts are rotating in opposite directions for best balancing in X direction.

More flexibility with servo drive technology..



Longitudinal shaft with servo center drive



Transverse shaft drive with servo drive

Servopress control

Automatically on target

The ANDRITZ servopress was developed under the stipulation that every machine operator must be in a position to optimally adjust the press to the tool and the forming conditions.

SIMULATION

The integrated tool for the calculation of the drive technology can be operated intuitively. Mechanical and electrical limit values are stored in the simulation software and ensure a practical design. Additional software components, for example for transfer or feed, can be connected with the press tool in order to achieve a comprehensive simulation. The speed of the calculation programme and the intuitive user interface allow the calculated values to be compared to the actual machine characteristics immediately.

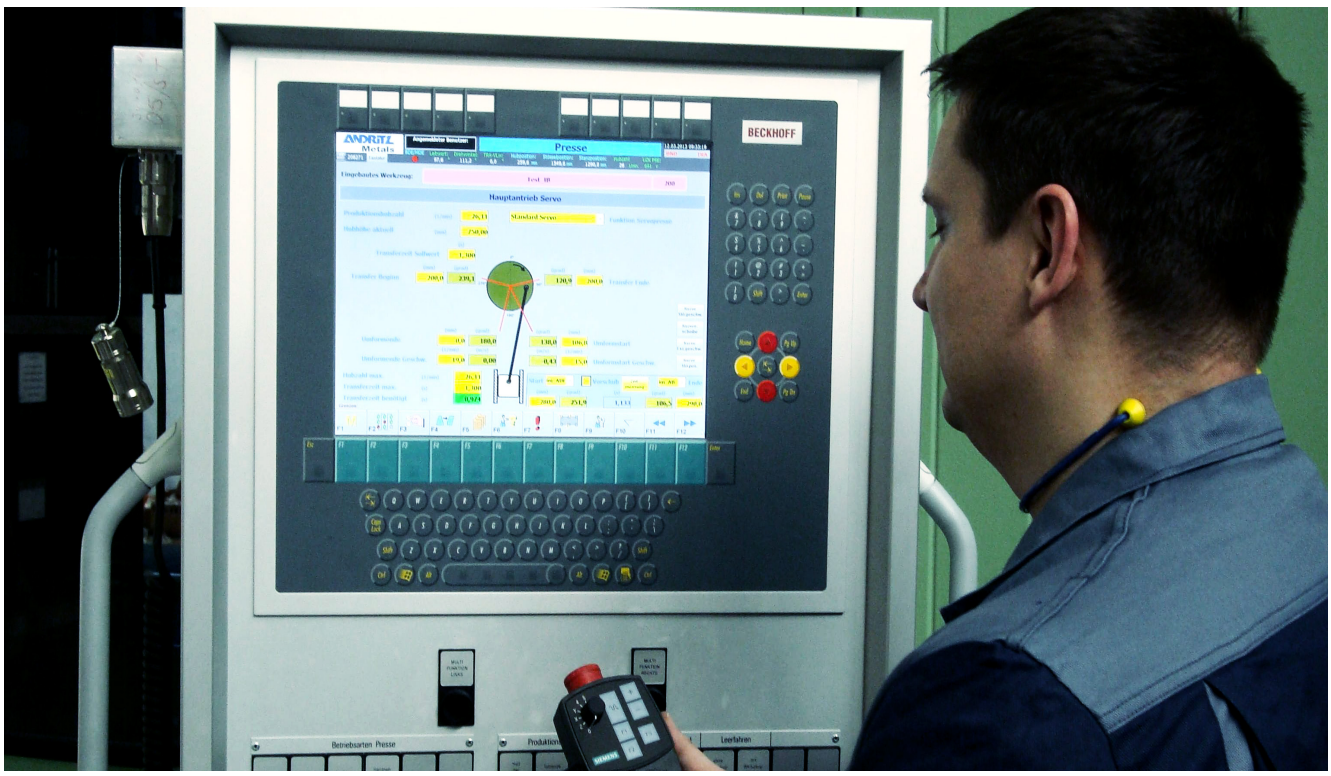
SLIDE MOVEMENT CURVE CALCULATION TOOL INTEGRATED IN PC

With the input of 4 (alternatively 8) basic process parameters, the press control independently calculates the energyoptimised movement sequence of the plunger (graph) as well as the optimum operating mode (rotational or pendulum operation).

A. START of the forming. Position in angular degrees or millimetres prior to UT
B. SPEED START of the forming - stroke/min
C. END of the forming. Position in angular degrees or millimetres after UT
D. SPEED END of the forming - stroke/min

TRYOUT

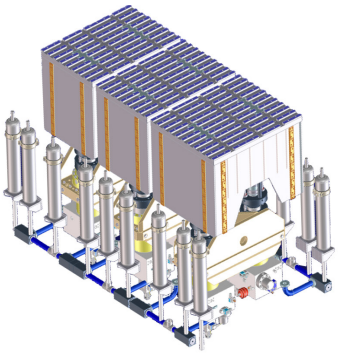
The press can be extremely accurately controlled through a hand-operated device. Due to the fact that with servopresses the work capacity of the drive and the pressing force are also available at extremely slow plunger speeds, the tools can be sensitively run in under real force conditions. The plunger can be stopped in any position and reversed if necessary.



All from a single source

Peripheries for mechanical presses

ANDRITZ Kaiser has been building servo-driven presses since 2006. The combination of the highly flexible servo drive with our proven, high quality press technology opens up new possibilities in forming technology. The servo-motors supplement the standard available drive options.

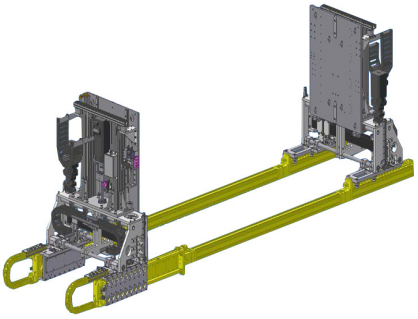


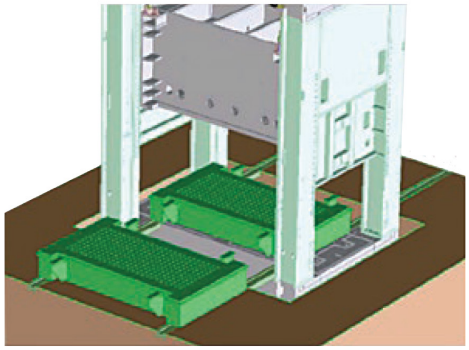
PNEUMATIC OR HYDRAULIC CUSHIONS

Compact pneumatic, hydraulic or electro-hydraulic cushions units in press tables and/or slide take care of various jobs, from pure blank holders up to multiply active shaping elements. The versatile, controllable systems come exclusively from renowned manufacturers. As a consequence, we provide reliable quality and long-term availability.

TRANSFER SYSTEMS

Fast, precise and vibration-free 2D and 3D state-of-the-art electronic transfers with light and stable transfer bars from profiled aluminium. Advance movement is realized via either linear drives or servo drives; other movement via servo drive. The transfer can be fitted with a wide variety of custom-made active or passive toolings.





TOOL CHANGING SYSTEMS

We design and build systems for semi-automated or fully automated tool changing, including transfer bars changing if required. Each system is custom-tailored to the customer's expectations and enables shortest tool changing times while keeping encumbrance at a minimum. A reliable security concept and ergonomic handling bring the finishing touches. For HeavyLine presses tandem tool changing shuttles or moving bolsters (F-B or T-track) are available.

ROLLER FEED

We produce electronic roller feeds for strip width of up to 1500 mm. The hardened and polished upper and lower roll are driven by a servo motor or torque motor and tooth belt or gearbox. The upper roll is lifted hydraulically. A rotary cam switch unit on the press shaft controls the lifting; the feeder automatically adapts to the press speed.



Project management

Success through professional planning

PROFESSIONAL PROJEKTMANAGEMENT

We accompany you from the initial concept phase right through to the complete ready-for-operation handover of the production line, and further into the initial production phase. As a complete system supplier, we are available at all times regarding technical and commercial matters. We have professional project managers who, supported by professional tools, ensure punctual and transparent project management. We wish to make certain that you are completely satisfied with your system in every respect.

ANDRITZ Kaiser – your reliable partner in every situation

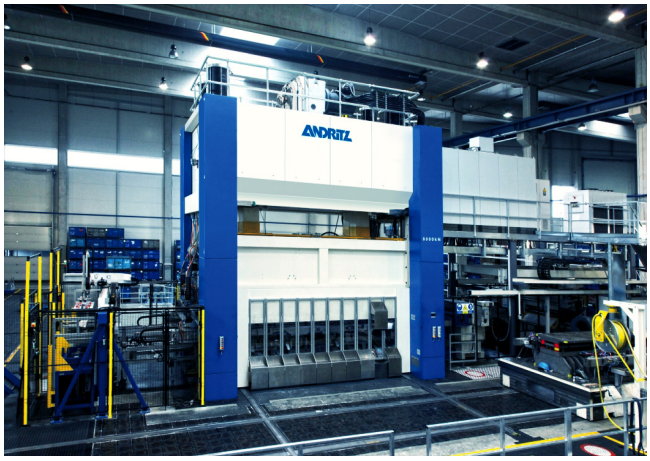



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References

An extract from our most recent projects in the automotive, fitting and general stamping and metal forming industry.



GENERAL STAMPING COMPANY
KAISER KSTU 10.000-50-F6-RKM-SE

Press force:	10.000 kN
Table length:	5000 x 2000 mm
Speed:	1 - 40/min
Stroke:	500 mm
Machine weight:	220.000 kg



PRODUCTION OF EXHAUST COMPONENTS
KAISER KSTU 12.500-41-F7-R-SE

Press force:	12.500 kN
Table length:	4100 x 1800 mm
Speed:	1 - 35/min
Stroke:	500 mm
Machine weight:	260.000 kg



AUTOMOTIVE
KAISER KSTU 15.000-35-12S-RKM-SE

Press force:	15.000 kN
Table length:	3500 x 1600 mm
Speed:	1 - 80/min
Stroke:	200 mm
Machine weight:	260.000 kg



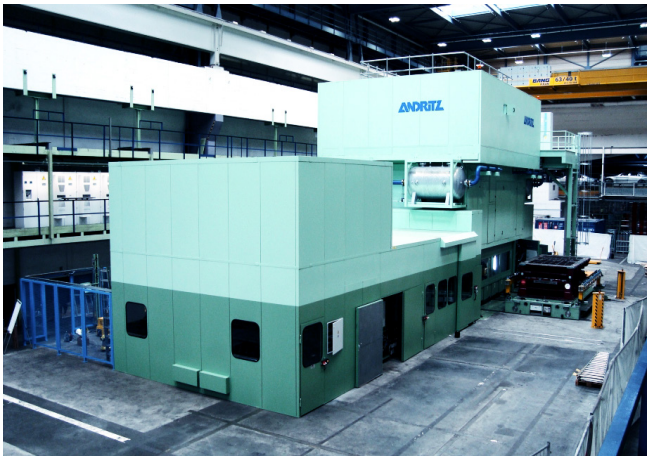
AUTOMOTIVE
KAISER KSTU 4Q 16.000-60-11S-R-SE

Press force:	16.000 kN
Table length:	6000 x 2500 mm
Speed:	1 - 28/min
Stroke:	600 mm
Machine weight:	440.000 kg



AUTOMOTIVE / FITTINGS
KAISER KSTU 10.000-45-F7-R-SE

Press force:	10.000 kN
Table length:	4500 x 2000 mm
Speed:	1 - 40/min
Stroke:	500 mm
Machine weight:	260.000 kg



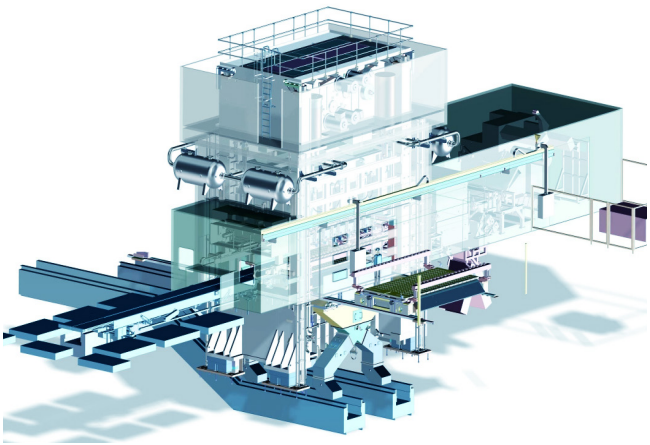
AUTOMOTIVE
KAISER KSTU 4Q 25.000-51-14S-R-SE

Press force:	25.000 kN
Table length:	5100 x 2500 mm
Speed:	1 -30/min
Stroke:	750 mm
Machine weight:	800.000 kg



AUTOMOTIVE
KAISER KSTU 4Q 25.000-60-12S-R

Press force:	25.000 kN
Table length:	6000 x 2000 mm
Speed:	8 - 30/min
Stroke:	600 mm
Machine weight:	480.000 kg



AUTOMOTIVE
KAISER KSTU 4Q 25.000-51-14S-R-SE

Press force:	25.000 kN
Table length:	5100 x 2500 mm
Speed:	1 - 30/min
Stroke:	750 mm
Machine weight:	800.000 kg

ANDRITZ KAISER

ANDRITZ Kaiser stands for highest quality in metal forming technology. Decades of experience and the technical specifications of our automatic stamping and metal forming presses guarantee customers high precision, productivity, and reliability.

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