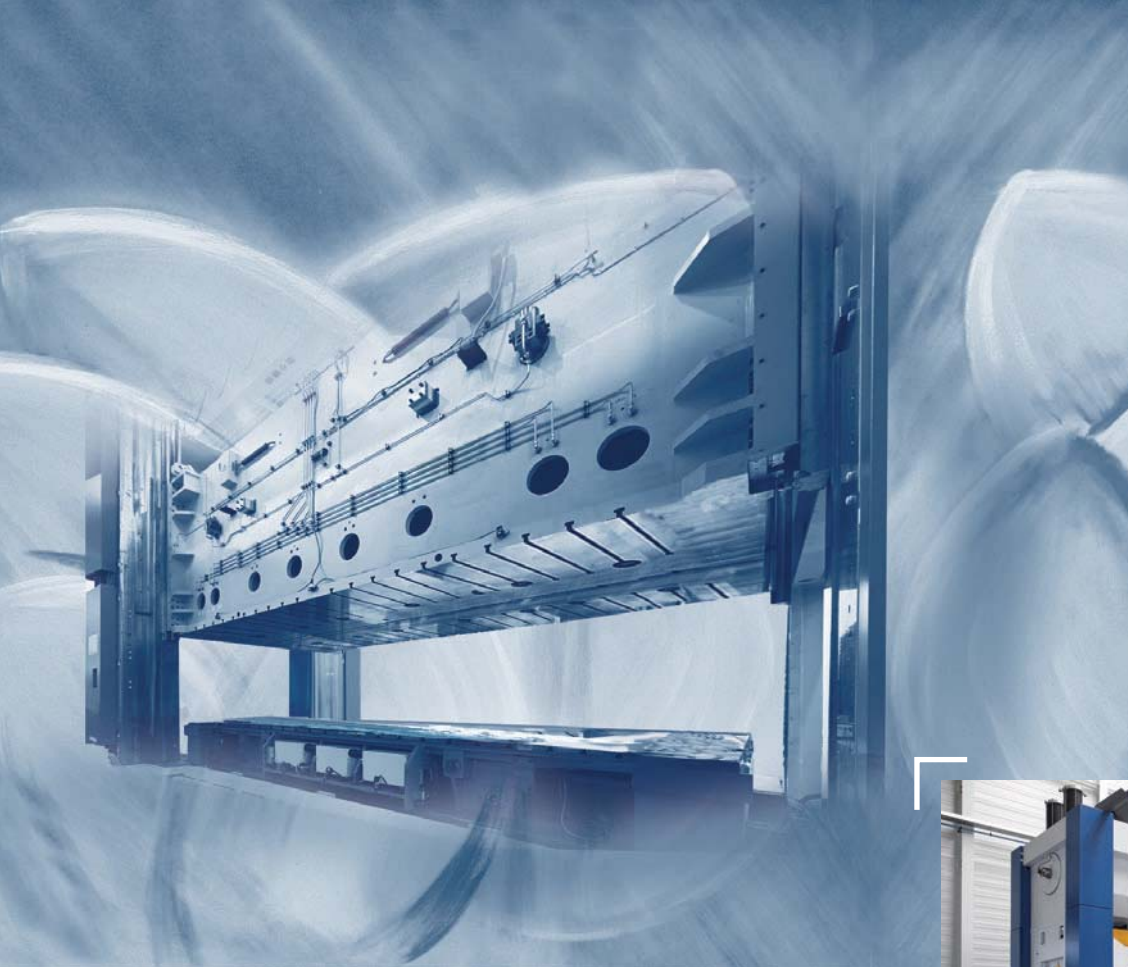


Metals Experience

Punching and Metal
Forming Presses



Andritz Kaiser series 150
630 – 25,000 kN



focus on performance



Andritz Kaiser: Experience, innovation, know-how

Andritz Kaiser's comprehensive range of punching and metal forming technologies rests on solid foundations, the result of decade-long experience by a true specialist in the field.

Long known for its customised punching and metal forming technology, the advancement and extension of Andritz Kaiser's portfolio of punching and metal forming presses enables

a large variety of applications, with press forces up to 25,000 kN, and press table lengths up to 6000 mm.

Integration into the globally active Andritz Group has created synergies on all levels. The Andritz Group is a global market leader in the supply of customized plants, systems, and services. Headquartered in Graz, Austria, the Group has about 12,900 employees. It manufactures and sells its products and services globally. Andritz maintains more than 150 production sites and service centres worldwide. Andritz Kaiser is a 100% Andritz affiliate. With innovative technologies and the best possible quality, Andritz Kaiser, which is DIN EN ISO 9001 certified, has outstanding

competence to produce punching and metal forming technologies.

Focus on the facts:

Punching and metal forming equipment made of cast iron or welded steel, monobloc or tension-rod design

- ***Linear slide guidance with pre-stressed, clearance-free roll guidance systems***
- ***Eccentric shaft with four bearing assemblies (roller or plain bearings)***
- ***Patented, automatic stroke adjustment***
- ***Drive gear with oil-tight gear casing, pressure oil lubrication.***
- ***Drive option: direct drive or coaxial planetary gear.***

Optionally also with draw crank mechanism:

- ***slower slide movement during punching***
- ***optimum quality for deep-drawn and punching parts***
- ***longer tool life and higher output***
- ***reduced noise level***

- ***Lubricating oil, hydraulic and compressed air systems integrated in the press columns.***

Andritz Kaiser: modular design, customised solutions

Universal applicability, reliability and precision, also for the most complex punching and forming tasks, is ensured by modular design options.

Maturity of design

The machine frame comes as a split, stress-annealed cast iron or welded steel structure offering highest rigidity.

Machine frame:



The machine frame represents the best in casting or steel welding technology: it consists of the press table, side

columns and crown. Four hydraulically pre-stressed steel tie rods brace it together to form a rigid unit. This design gives a maximum of rigidity and lowest frame deflection, resulting in tool stability and long tool life. All components are mathematically optimized with the Finite Element Method.

The crown is a closed, oil-tight gearbox case. The side columns contain the integrated, encapsulated oil reflux system. The press table is provided with collecting grooves and openings for removal of parts and scrap material.



Punching and metal forming press
KSTU 4000-30-7 RKR

The standard table top is screwed to the press table and is either fixed or adjustable in height. The tee-slot pattern and the drop area can be selected according to customer requirements.

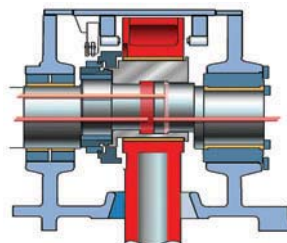
Multiplicity of options

Each of Andritz Kaiser's punching and metal forming press models is available in special design variants.

Drive mechanism:



The entire drive mechanism is incorporated in the crown. The eccentric shaft is of high-quality, forged nickel-chromium steel. The proven four bearings ensure very high precision (antifriction bearings are standard up to size 3). The degree of tilt resistance is also very high due to the large spacing between the connecting rods, especially in the event of off-centre loads. All bearing points are supplied with lubricating oil from the pressure oil system via internal oil channels.



Automatic stroke adjustment

The main drive uses a frequency-controlled asynchronous motor. A creep speed mechanism and flywheel brake are integrated to assist changeovers. The flywheel is driven by a heavy-duty driving belt. The externally mounted clutch/brake unit is easily accessible due to the specific Andritz Kaiser design and offers that extra ease of serviceability. Short braking angles are further advantageous features of this system.

Stroke adjustment: innovation right around the circumference!

The hydraulically operated stroke adjustment uses a denture clutch, with teeth distributed round the entire circumference (360°). Counter-balancing of the rotating mass forces (optionally also oscillating mass forces) is adjusted automatically to the stroke used, which ensures optimum smooth running of the machine.

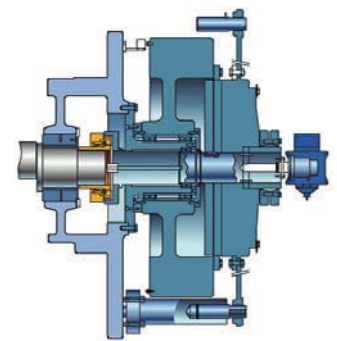
High value of technology

A large variety of drives can be put together using the modular concept.

Direct drive:



The drive system is based on a frequency-controlled asynchronous motor with heavy-duty drive belts to transfer the power to the flywheel.

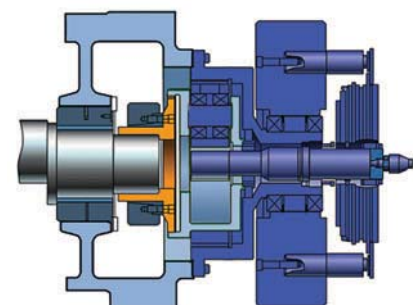


Direct drive

Planetary gear for high power and speed



For high work capacity and reduced number of strokes, Andritz Kaiser punching and metal forming presses in the „P“ series are equipped with a planetary gear. The flywheel, clutch, brake and gearing form a compact drive unit with axial coupling to the eccentric shaft. The „PS“ series combines the high working capacity with an increased number of strokes.



Planetary gear box

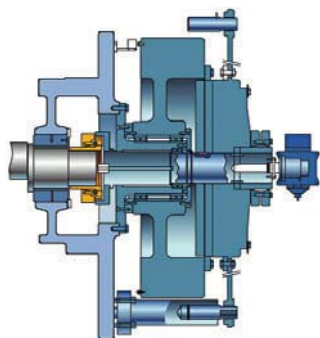
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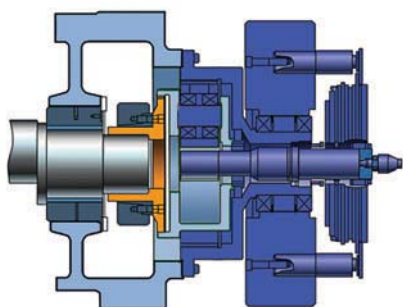


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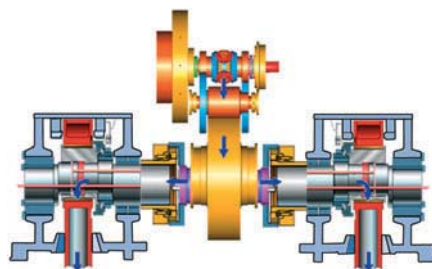


Planetary gear box

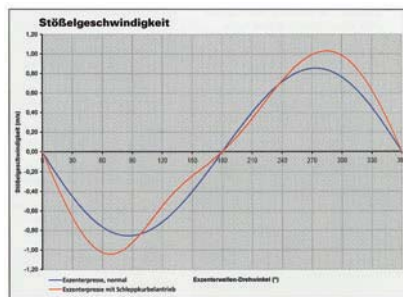
Draw crank mechanism:



The draw crank mechanism opens a further “chapter” of punching and metal forming technologies. The drive may be with fixed stroke or automatic stroke adjustment. The special arrangement and design of the drive reduce the slide’s impact speed, including the upper tool, and open new perspectives for the punching and metal forming process.



Draw crank mechanism – Series 150



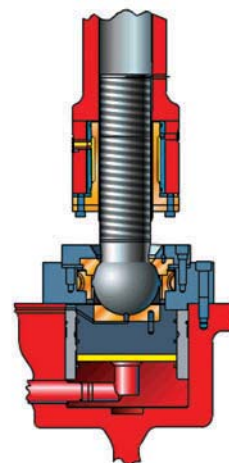
Curve diagram

Conventional eccentric press versus eccentric press with draw crank mechanism

Overload protection:



The electronic hydraulic overload and release device affords optimum protection both for the press and the tools. The device combines the advantages of electronic press force measuring and readout with hydraulic overload protection. The power-down force can be pre-selected for each side using the electronic system.



Overload protection



Ampleness of equipment

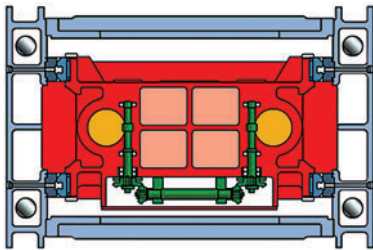
Even the basic version of series 150 punching and metal forming presses is amply equipped.

Linear slide guidance:



Series 150 uses linear slide guidance with pre-stressed, clearance-free roll guidance systems. The system is connected to the central pressure oil lubrication system and fully encapsulated.

Accuracy of guidance is achieved over the entire stroke and slide adjusting range by the special design of the slide guidance. The slide is of cast iron or welded steel, and stress-free annealed.



Linear slide guidance

To change the position of the slide, both spherical spindles are synchronously driven by a hydraulic motor with positioning axis (repeating accuracy: ± 0.003 mm). An AC servo-motor can also be used for this purpose and gives even better repeating accuracy (± 0.01 mm), as well as providing for quick piloting of the slide and automatic penetration depth regulation (optional). The two spherical spindles are clamped during the punching operations.

The supply systems:



The supply systems for lubrication, hydraulics and compressed air are integrated in the machine housing (installation profiles), a solution that reduces the space requirement of the overall system and increases the friendliness of service and maintenance, as there are no external units.



Installation profile

Lubrication: A central solution approach

The central pressure oil system is a closed system that is divided into several oil circuits. Each of these circuits is monitored separately. The oil supply to the drive mechanism bearings flows through internal oil channels in the eccentric shaft.



Cover for the slide guidance

Controls:

Andritz Kaiser press controls are based on Siemens SIMATIC S7 and designed for the requirements of everyday operation. They have been tried and tested in long-term operation. The clearly displayed operating and setting data, error messages and user interface on the colour monitor conform to the latest technology. Additional options like cam shaft control, integrated tool protection and tool data memory, as well as data communication with peripheral systems, round off our program. Machine remote diagnosis is possible.



Andritz Kaiser PC Control SIMATIC S7-300 with MP 370 touch and 15" TFT colour monitor (standard)



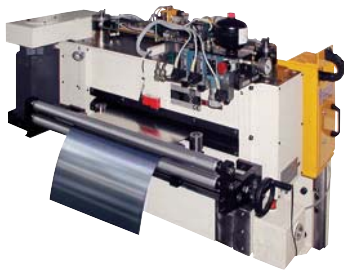
Andritz Kaiser PC Control SIMATIC S7-300 with PC 677 touch and 19" TFT colour monitor (option)

Wide variety of equipment

Andritz Kaiser solves the most complicated tasks and supplies customized systems from a single source.

Feed systems:

Andritz Kaiser punching and metal forming presses can be furnished with different feed systems. Programmable Andritz Kaiser roll feeder systems (KVV) are available for strip widths of 250 mm up to 1500 mm. The upper and lower rolls (hardened, polished, with support) are driven by an AC servo-motor, optionally with water cooling for increased performance. The pressing force of the upper roll can be adjusted with a pneumatic or hydraulic system (depending on the size). Operation and control are the task of the central press control, where all feed setting data can be stored for each tool.



Andritz Kaiser feed system type KVV

The high-precision gripper-feeder, type ZR, are available as alternative solutions. These gripper feeders are driven directly by the eccentric shaft. A patented intermediate gear enables continuous settings of Andritz Kaiser gripper feeder between 90° and 180°.

The accessories:

Andritz Kaiser supplies an extensive range of standard accessories with every punching and metal forming press. The degree of automation can be tailored to suit individual requirements, from hydraulic clamping systems to fully automatic retooling equipment, including all peripheral components.



KSTU 6300-30-8 G RK with automatic retooling device

Service: Competent and reliable

Andritz Kaiser attaches great importance to serving the customer. Service is co-ordinated centrally at our manufacturing site in Bretten. A well-equipped service team is always at your disposal through modern means of communication. Preventive maintenance, spare parts service, revisions and retrofitting are carried out swiftly and according to customers' wishes. Fast delivery of spares is guaranteed.

Complete range



KSTU 4Q 10,000-50-10S



KSTU 3150-25-5,1G RKR



KSTU 630-10-1G D

The series 150 modules for Andritz Kaiser punching and metal forming presses can be combined to cover a press force range of 630 kN up to 8000 kN and press table lengths of 1000 mm up to 4000 mm.

Larger equipment - for press forces up to 25,000 kN and press table lengths up to 6000 mm - is designed specifically to customer's requirements.

Nominal press force	Machine type	Press table and slide surface
		L - R mm
8000 kN	KSTU 8000 - 35 - 9G - KSTU 8000 - 40 - 9G -	3500 4000
6300kN	KSTU 6300 - 40 - 8G 35 - 8G - 30 - 8G -	4000 3500 3000
5000 kN	KSTU 5000 - 30 - 6G - 25 - 6 G - 20 - 6 G -	3000 2500 2000
4000 kN	KSTU 4000 - 35 - 7G - 30 - 7G - 25 - 7G -	3000 2500 2000
3150 kN	KSTU 3150 - 25 - 5G - 20 - 5G - 17,5-5v 15 - 5G -	2500 2000 1750 1500
2500 kN	KSTU 2500 - 25 - 5G - 20 - 5G - 17,5-5G - 15 - 5G -	2500 2000 1750 1500
2000 kN	KSTU 2000 - 20 - 4G - 17,5-4G - 15 - 4G - 12,5-4G -	2000 1750 1500 1250

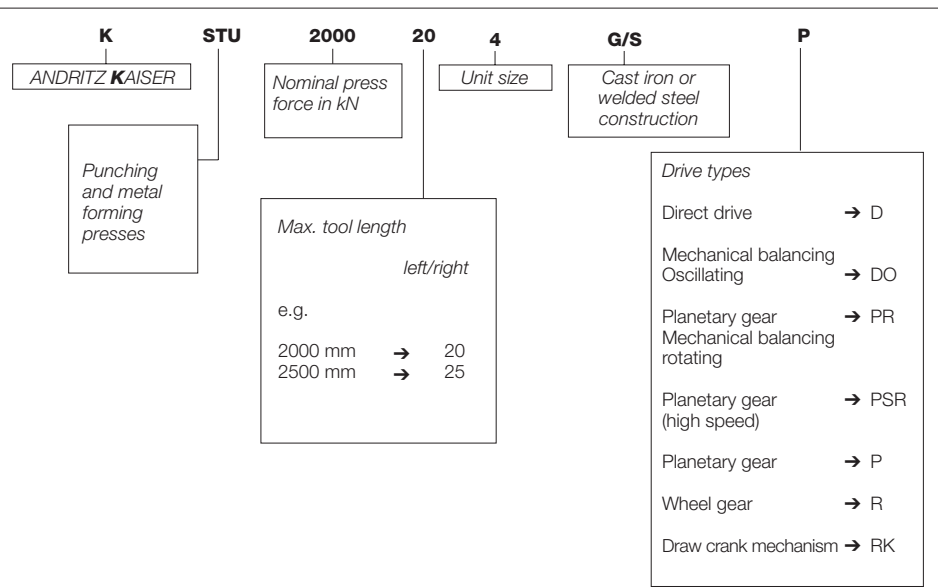
Nominal press force	Machine type	Press table and slide surface
		L - R mm
1600 kN	KSTU 1600 - 20 - 4G - 17,5-4G - 15 - 4G - 12,5-4G -	2000 1750 1500 1250
1600 kN	KSTU 1600 - 15 - 3G - 12,5-3G - 10 - 3G -	1500 1250 1000
1250 kN	KSTU 1250 - 15 - 3G - 12,5-3G - 10 - 3G -	1500 1250 1000
1000 kN	KSTU 1000 - 15 - 2G - 12,5-2G - 10 - 2G -	1500 1250 1000
800 kN	KSTU 800 - 15 - 2G - 12,5-2G - 10 - 2G -	1500 1250 1000
630 kN	KSTU 630 - 15 - 1G - 12,5-1G - 10 - 1G -	1500 1250 1000

ANDRITZ KAISER
Punching and metal forming presses
KSTU, series 150

ANDRITZ KAISER

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Andritz Kaiser punching and metal forming equipment

Series 150 – the modular design

- Punching and metal forming press with four hydraulically pre-stressed steel tie rods
- Basic types with press forces ranging from 630 kN to 8000 kN
- Longitudinal shaft with alternative drive options
- D - DO - P - PR - PSR - R - RK lateral or centre drive
- Four antifriction bearing assemblies for the eccentric shaft are standard up to unit size 3
- Press table length up to 4000 mm
- High tilt resistance due to large spacing between the connecting rods
- Linear guide system: pre-stressed, clearance-free, with integrated recirculating roller bearing and guideway (linear guidance)
- Modern control equipment based on Siemens S 7- 300
- Visualisation: MP 370 15"-TFT colour monitor or PC 677 19"-TFT colour monitor



Series 150 – custom-tailoring for industrial systems

- Punching and metal forming press, welded construction with tie rod
- Basic types with press forces ranging from 10,000 kN to 25,000 kN
- Drive: 4-point transverse shaft
- Double wheel gear for increased work capacity
- Suitable for working with different feed and transfer systems
- Can be coupled with other machines to form a system
- Offers highest flexibility to customer's requirements
- Press table length up to 6000 mm



Economical punching in our rhythm

Andritz Kaiser offers the full range of advanced heavy-duty presses, and other punching and metal forming presses for any press force between 630 kN and 25,000 kN (series KSTU 150).

Salient features are

- extreme precision
- high performance
- highest reliability
- long life time
- universal application

Are you interested?

Just contact us. We will be pleased to answer your questions.

Further information is also available on request