

FORMING THE FUTURE



LINEAR HAMMER IN FORGING

THE MOST PRECISE ENERGY APPLICATION. LINEAR HAMMER IN FORGING.



Linear hammer used for forging.

Schuler forging. System solutions from Schuler offer customers worldwide a decisive advantage when it comes to quality, in all temperature ranges:

- Systems for hot forging
- Systems for warm forging
- Systems for cold forging

Schuler linear hammers are used in hot forging.

Down stroking hammers were previously driven either hydraulically or pneumatically. Current requirements in modern forging can no longer be met by using these conventional technologies. Schuler's years of experience in presses driven by servo motors have now enabled the direct drive to also be successfully used in the hammer.

The linear drive patented by Schuler features a linear motor at the heart of the system. This revolutionary technology has been successfully used in forging since 2014. The drive, designed for the field of forging, has proven to be a robust construction, which is not sensitive to dirt.

Maximum stroke accuracy thanks to linear drive.

The linear hammer, developed and patented by Schuler, impresses as it offers the ultimate in stroke accuracy, which enables a never-before-seen level of precision, particularly for very sensitive forging processes. The non-contact linear drive is practically wear-free, extremely dynamic and offers the option of flexible stroke control. The machine therefore offers a maximum degree of adaptability to suit the requirements of the forging process.

The advantages offered by the direct drive:

- Maximum precision
- Optimum automation
- Press operations for bending, descaling and more are possible
- High energy efficiency
- No operating medium such as oil
- Wide base of information of process data

The forgings:

- Connecting rod
- Running gear components
- Flanges
- Fittings
- Manual tools
- And much more



ROBUST AND ENERGY-EFFICIENT. THE REVOLUTIONARY DRIVE SYSTEM.

Reduced cycle times, increased energy efficiency. The new drive technology from Schuler enables a maximum degree of adaptability to the increasingly specialized fields of application and processes inherent to forging. Thanks to the precise control, which provides repeat accuracy, forging can take place without the excess energy which would otherwise be needed.

This means that the reject rate is reduced considerably, even at a lower impact energy. Perfectly complemented by the non-contact, zero-maintenance linear drive, which directly converts electrical energy into the mechanical movement of the tup, average energy savings of up to 25% can be achieved in comparison to hydraulic hammers.



Linear hammer with ServoDirect technology.

SUSTAINABLE AND EFFICIENT FORMING

Less is more: If you want to optimize your profit, you need to reduce your energy consumption. This is why Schuler offers EcoForm, a range which places it well ahead of the competition: with innovative EcoForm products such as the linear hammer, hydraulic forging presses with EHF (Efficient Hydraulic Forming) or servo presses, you can work with exceptional energy efficiency. Not only can you conserve valuable resources, you can also significantly reduce your energy costs per component, thereby perfectly combining sustainability and profitability.



SUSTAINABLE
FORMING SOLUTIONS



- 1 Drive head with linear drive
- 2 Tup
- 3 Upper die
- 4 Anvil
- 5 Lower die

MODEL OVERVIEW FOR LINEAR HAMMER WITH SERVODIRECT TECHNOLOGY

Type	KGE 1.6	KGE 2	KGE 2.5	KGE 3.15	KGE 4	KGE 5	KGE 6.3	KGE 8	KGE 10	KGE 12.5	KGE 16
Working capacity [kJ]	16	20	25	31.5	40	50	63	80	100	125	160
Impact frequency max. [strokes per minute]	135	130	125	110	108	106	104	95	90	90	80
Tup stroke max. [mm]	635	665	685	755	790	775	805	755	690	925	1,000
Tup depth [mm]	470	510	550	595	640	695	750	830	890	1,020	1,050
Clearance guide width [mm]	520	570	608	664	717	766	831	890	960	1,060	1,150
Die height, total max.* [mm]	320	345	360	420	455	435	465	495	540	650	750
Total weight [t]	22	28	34	44	57	72	96	121	143	195	235

* Without dovetails – Subject to technical modifications.

MAXIMUM ADAPTABILITY. PROCESS-ORIENTED CONTROL.



Maintenance-free drive head.

MAINTENANCE-FREE DRIVE.

As the forging hammer works with a non-contact, electrically driven linear motor, the standard hydraulic drive head is no longer required. This means that the dynamically highly loaded parts are reduced to a minimum, with the linear hammer being particularly low-maintenance.



Optimum automation.

FLEXIBLE PROCESSES.

Process extension. The forging hammers can be quickly and easily adapted to the various tasks. This allows preform operations (descaling, bending) as well as setting blows and press operations (trimming, piercing) to be carried out.

Automated linear hammer. Thanks to the electrical drive concept, the linear hammer can be integrated into automated systems in the simplest of ways. The exact path control and recording of the tup in automatic mode allows for process reliability and the operating speed to be increased.

PRECISE AND INFORMATIVE.

Maximum precision. Forging hammers are renowned for their high degree of precision and repeatability. This is thanks to a stroke precision of < 0.5%, exact positioning with a deviation of less than ± 0.05 mm and a continuous thickness measurement. This precision is achieved across the entire energy range of the hammer from 0 to 100%.

Well informed. The ServoDirect drive of the linear hammer enables various pieces of process data to be continually recorded, such as distance and speed curves. Such data can be exported for optimization and processing in production data acquisition systems.



Operating the press via the touchscreen is intuitive and user-friendly.

SCHULER SERVICE – STATE-OF-THE-ART SERVICE FOR MORE PERFORMANCE

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment. 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 maximum productivity and safety of your production equipment in order to secure your company's continued success.

Find out more. www.schulergroup.com/service_en





www.schulergroup.com/forging

Find out more. Simply scan the QR code
with the camera on your smartphone or tablet.

Schuler Pressen GmbH

Schussenstraße 11

88250 Weingarten

Germany

Sales telephone +49 751 401-2214

Service telephone +49 751 401-2244

Fax +49 751 401-2694

forging@schulergroup.com

www.schulergroup.com/forging

