HYDRAULIC DIE FORGING HAMMERS

Maximum force - minimum effort

Lasco

HYDRAULIC DIE FORGING HAMMERS

Highly dynamic and robust

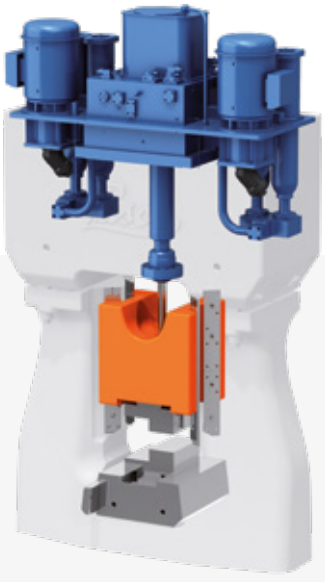
Die forging hammers are the optimum forming machines for the forging industry: Maximum forming force is generated with the least possible effort! Many- in particular, complicated, heavy, and heaviest forging parts can only be produced economically with a forging hammer at all.

LASCO is the pioneer and inventor of the hydraulic drive system for die forging hammers. Benefit from our many years of experience and our consistent focus on the future. In the development and manufacture of hydraulically driven forging hammers, LASCO continues to be at the leading edge of suppliers in an international comparison.

SAVING ENERGY MEANS SAVING MONEY
MODERNIZE YOUR DRIVE TECHNOLOGY

Of course, all the advantages of our hydraulic drive can also be implemented on other hammer types - regardless of the brand.

Take advantage of the energy-saving modernization options and install the LASCO drive system.

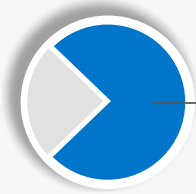


In direct comparison:

PNEUMATIC HAMMER VS. HYDRAULIC HAMMER

For more information, please refer to our brochure „Energy Saving“.

Scan QR code now and learn more.



76%

ENERGY SAVING POTENTIAL

YOUR ADVANTAGES

at a glance:

Highest economic efficiency

- Precise energy metering and exact repeatability at high blow frequency
- High forming capacity and very high final force with a low investment
- Approx. 76 % lower energy costs compared to air- or steam-driven machines

Constant operational readiness

- Independent of air or steam network
- Temperature control and filter system keep operating medium ready for operation

Optimum die life

- Short pressure dwell times for long service life of dies

Heat-neutral guiding system

- X-shaped guides with small clearance and automatic lubrication

Protection against oil leakage

- Fast and self-acting safety flap

Excellent piston rod sealing

- Active sealing elements with drag oil return and unsplit guide bushings

Easy, safe operation

- Automatic adjustment of different die heights
- Safety control to prevent uncontrolled release of blows
- Certified foot switch and monitored hydraulic safety level
- State-of-the-art control and diagnostic technology

Sustainability

- Direct spring damping minimizes vibration emissions
- Energy-saving drive retrofit to modernize almost any older make
- High overall efficiency
- Energy-efficient drive motors and valve control with pulse width modulationn

LASCO KNOW-HOW 4.0 - ready for the future

LASCO is a specialist for modern machine tools in the field of solid metal and sheet metal forming as well as **automation solutions** and **robotic systems** for efficient, intelligent production lines. LASCO's **virtual commissioning** simulates and optimizes all machine processes and operating states of the complete production line already in the engineering phase based on the digital system twin.
Our experts also accompany you virtually during production operation - the **LASCO Remote Assistance System** enables bidirectional image and sound transmission via video stream and SmartGlasses.

For detailed information please see our brochure "Automation & Robotics":

LASCO. Your needs. Our solutions.

DOUBLE-ACTING DIE FORGING HAMMER HO-U

Flexible and economic

The hydraulic double-acting die forging hammer HO-U with a freely programmable control is the decisive step towards increasing production and quality in your company. Hydraulic top pressure accelerates the ram to the desired impact speed of approx. 5 m/s on the shortest possible stroke.

Working capacity:

- From 16 kJ up to approx. 200 kJ for small, medium and larger workpieces.

Frame:

- The U-frame has ideal mass distribution and very high rigidity. The material used is alloy cast steel, which undergoes a controlled specific heat treatment.

Piston rod:

- High durability is achieved by the use of high-quality material, several finishing processes and elaborate surface treatments.

Drive and operating principle:

- The forged control block combines the essential control elements into a block hydraulic system, thus achieving great operational reliability and extremely high efficiency. The hydraulic medium is constantly cleaned by monitored filtration. The automatic temperature control ensures consistent operation and longer life of the oil.

Ram and guiding system :

- The hammer ram is made of forged, heat-treated steel. Best guiding properties result from X-arrangement and optimal shape. The automatic pressure oil lubrication ensures optimum sliding conditions and minimum wear.

Safety:

- With the safety control - beyond OSHA regulations - the uncontrolled release of forging blows is prevented.

Scan now and get more information about fully-automatic hammer forging.

LASCO PATENT - FULLY-AUTOMATIC HAMMER FORGING CELL
The automation developed by LASCO consists of two synchronously operating forging robots with **patented special grippers**. The LASCO gripper concept and the special programming minimize vibrations and impact loads and enable safe, trouble-free, automated forging.

LASCO KNOW-HOW:
Transient **FEM studies** allow the evaluation of the prevailing loads during hammer blows and derivation of continuous design improvement.

TECHNICAL DATA
HO-U SERIES

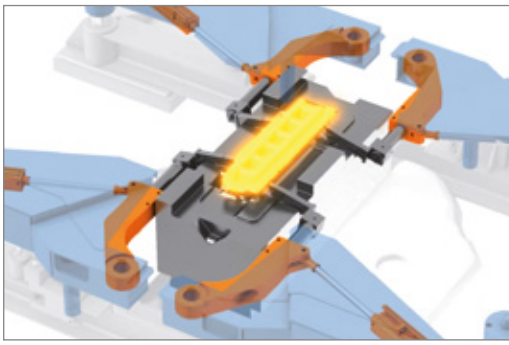
HO-U SERIES		160	200	250	315	400	500	630	800	1000	1250	1600	2000
Blow energy (with installed upper die with nominal weight)	[kJ]	16	20	25	31,5	40	50	63	80	100	125	160	200
Nominal weight of upper die	[kg]	100	150	200	250	400	550	600	700	800	1200	1800	2500
Blow frequency at nominal capacity	approx. [1/min]	95	95	92	90	90	90	85	80	78	70	68	63
Ram velocity	[m/s]	5	5	5	5	5	5	5	5	5	5	5	5
Ram depth	[mm]	460	500	570	590	590	690	760	800	900	1000	1100	1200
Ram weight	[kg]	1250	1500	1900	2300	2700	3200	4300	5600	7100	8500	11000	13500
Ram stroke max.	[mm]	640	660	690	700	710	730	760	810	850	930	960	980
Ram stroke min. to reach max. blow energy (distance billet to upper die)	min. [mm]	480	480	480	500	500	500	520	560	600	680	710	730
Max. die height without dovetails (incl. billet)	[mm]	320	360	390	400	430	450	460	530	550	750	830	910
Min. die height without dovetails	[mm]	160	180	180	200	220	220	220	280	300	500	580	660
Daylight between guides	[mm]	580	580	650	700	700	700	800	850	850	1000	1100	1150
Width of frame base	[mm]	2290	2290	2800	2800	2800	2800	3000	3100	3390	3600	3600	4400
Depth of frame base	[mm]	1250	1400	1400	1400	1400	1400	2000	2000	2450	2450	2450	2450
Frame weight	[t]	24	25,5	38	41,5	48	58	81	101	130	140	156	180
Width of base plate	[mm]	/	/	/	/	/	/	/	/	/	4100	4100	4950
Depth of base plate	[mm]	/	/	/	/	/	/	/	/	/	3100	3100	3150
Weight of base plate	[t]	/	/	/	/	/	/	/	/	/	32	45	80
Total weight	approx. [t]	32,5	36	51	55,5	68	80	105	133	165	215	247	326
Total mass to be absorbed	approx. [t]	33	37,5	52,5	57	70,5	83	108	137,5	169,5	221	254	339
Moving mass	approx. [t]	1350	1650	2150	2600	3150	3800	4950	6400	8000	9850	13000	16000
Height above floor level (assuming insert height 700 m)	approx. [mm]	4310 (700)	4380 (700)	4910 (700)	4975 (700)	4905 (700)	5080 (700)	5110 (700)	5850 (700)	6100 (700)	6590 (700)	6720 (700)	7345 (550)
Total height	approx. [mm]	5000	5100	5850	6100	6050	6550	6600	7300	7950	8850	9300	10100
Main motor capacity (with 400 V / 50Hz)	[kW]	37	45	55	55	2x45	2x55	2x75	2x90	2x90	2x132	2x132	2x160
Cooling motor capacity	[kW]	2,2	3	3	3	4	4	4	5,5	5,5	5,5	2x4	2x4
Cooling capacity	[kW]	41	80	80	80	116	116	116	160	160	160	2x116	2x116
Lubricating pump capacity	[kW]	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18
Total connected load	approx. [kVA]	55	65	80	80	120	150	195	235	235	330	335	400

- All data are suggested values and can be adapted to customer's requirements.

COUNTER-BLOW HAMMER GH

Maximum blow energy and precision

For higher working capacities (> 200 kJ), large, and oversized workpieces the counterblow hammer series called GH is preferably used. The optimum distribution of mass and speed between upper and lower ram prevents the forged parts from jumping out of the lower die. The extremely high forming force enables precise forming of large, and also flat workpieces.



The wedge ejector lift the workpiece and allows the handling robot to safely grip and transport the forged part.

Working capacity:

- From 200 kJ up to approx. 500 kJ
- In certain cases (process-related requirements, soil conditions, etc.), the GH can of course also be the optimum unit for individual applications in smaller dimensions (from 63 kJ)
  (cf. e.g. total weight and frequency position of HO-U 1600 and GH 1600).

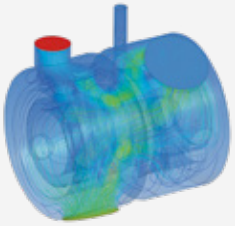
Frame:

- Solid welded construction, consisting of frame base, uprights and crosshead.

Drive and operating principle:

- The movement sequence of the rams is precisely controlled by the hydraulic drive system. Depending on the size, the mass and speed ratio of the upper to the lower ram is between 1:3.7 and 1:4. As a result, the lower ram moves at a final speed of 1.3 m/s with a resulting total impact speed of approx. 6 m/s.

Drive concept of the upper ram, piston rod and safety are equal to the HO-U series.



LASCO KNOW-HOW:
Fluidic investigations of the oil flow in the blow valves enable the minimization of pressure loss and heat generation with the aid of FEM.

TECHNICAL DATA
GH SERIES

SERIES GH		630	1000	1250	1600	2000	2500	3150	4000	5000
Blow energy	[kJ]	63	100	125	160	200	250	315	400	500
Nominal weight upper and lower die, each	[kg]	450	750	950	1200	1500	1800	2400	3000	3750
Blow frequency (with nominal working capacity)	approx. [1/min]	47	46	44	44	42	42	40	38	35
Speed of upper ram with nominal energy	[m/s]	4,6	4,6	4,6	4,6	4,6	4,6	4,6	4,6	4,6
Speed of lower ram with nominal energy	[m/s]	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Depth of upper and lower ram, each	[mm]	1100	1250	1350	1500	1600	1700	1850	2000	2150
Weight of upper ram	[t]	4	6,7	8,4	10	13,5	16	21	27	33
Weight of lower ram	[t]	16	25	31	40	50	63	80	100	125
Stroke of upper ram to reach max. blow energy	min. [mm]	525	525	525	525	525	525	525	525	525
Stroke lower ram	approx. [mm]	185	185	185	185	185	185	185	185	185
Max. stroke upper ram	max. [mm]	775	815	835	865	895	925	975	995	1015
Stroke of both rams to reach max. blow energy (distance billet to upper die)	min. [mm]	710	710	710	710	710	710	710	710	710
Max. total stroke of both rams	[mm]	960	1000	1020	1050	1080	1110	1160	1180	1200
Max. height of both dies without dovetails (incl. billet)	[mm]	570	660	710	770	850	900	1000	1050	1120
Min. height of both dies without dovetails	[mm]	320	370	400	430	480	500	550	580	630
Daylight between upper ram guides	[mm]	700	800	850	950	1000	1050	1150	1250	1350
Width of frame base	[mm]	2600	3150	3300	3600	3900	4150	4500	4900	5250
Depth of frame base	[mm]	1700	2000	2150	2300	2500	2700	2600	3150	3400
Total machine weight	approx. [t]	55	85	105	135	170	200	270	335	420
Height above floor	approx. [mm]	5000	5750	6200	6600	6800	7450	7750	8450	9150
Total machine height	approx. [mm]	6750	8000	8600	9200	9600	10500	11000	12000	13000
Main motor capacity (with 400 V/50 Hz)	[kW]	2 x 90	2 x 132	2 x 132	2 x 200	4 x 132	4 x 132	4 x 200	4 x 200	4 x 200
Cooling motor capacity	[kW]	3	4	4	5,5	2 x 4	2 x 4	2 x 5,5	2 x 5,5	2 x 5,5
Cooling capacity	[kW]	80	116	116	160	2 x 116	2 x 116	2 x 160	2 x 160	2 x 160
Lubricating pump capacity	[kW]	2 x 0,18	2 x 0,18	2 x 0,18	4 x 0,18	4 x 0,18	4 x 0,18	4 x 0,18	4 x 0,18	4 x 0,18
Total connected load	approx. [kVA]	235	330	330	500	650	650	1000	1000	1000

- All data are suggested values and can be adapted to customer's requirements.

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