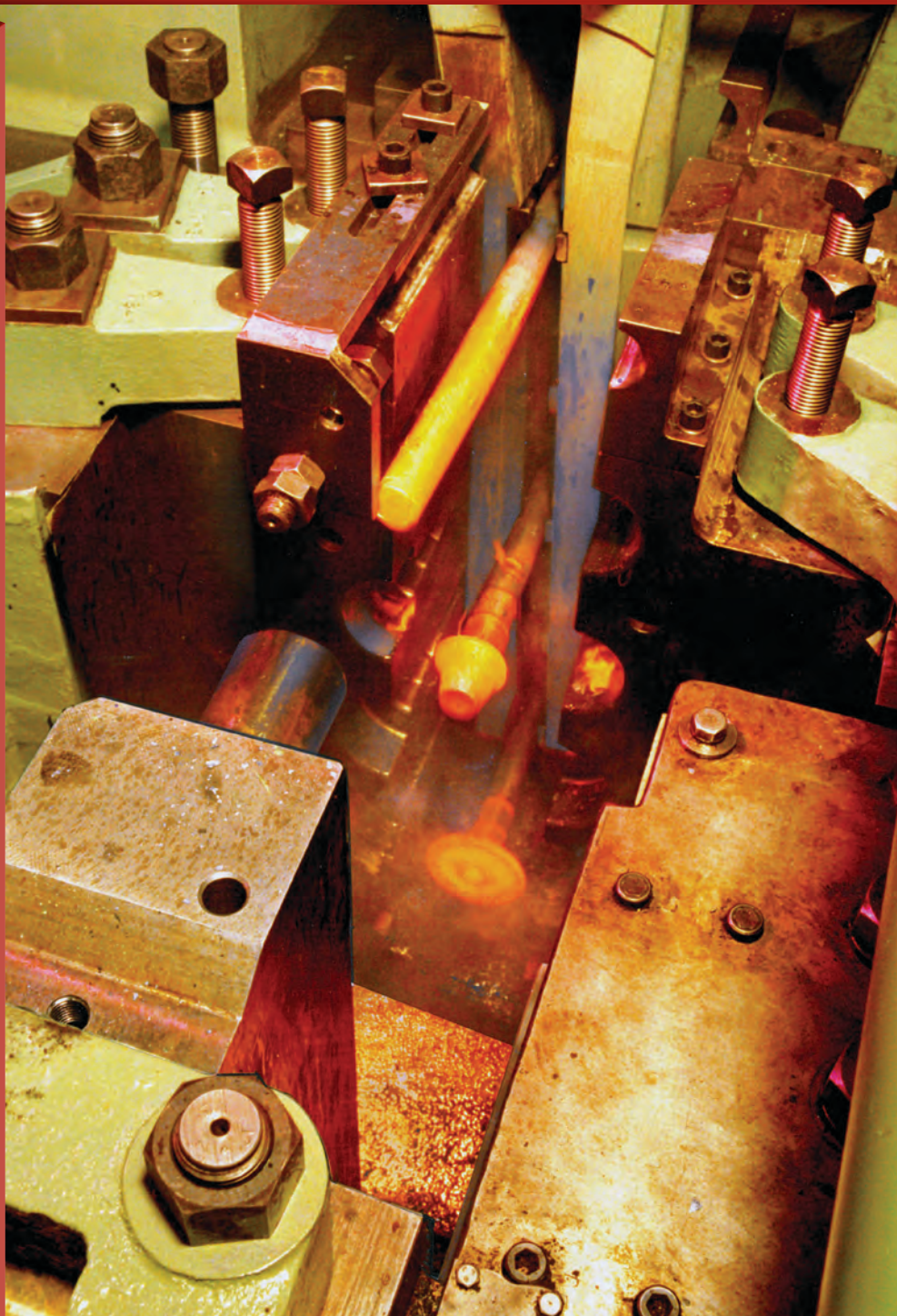


FORGING MACHINES & AUTOMATED UPSETTERS for the 21st Century



Fast Die
Changes

Automation

Instrumentation
and
Control



The Leader in Forging Since 1875

HOT, WARM AND COLD FORGING MACHINERY
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Ajax, the leader in modern forging machines, has pioneered in the design and manufacture of forging equipment since 1875. Ajax introduced the first general-purpose forging machine and continues its leadership by building advanced forging machines that maximize productivity and minimize part cost.

The Ajax line of forging machines ranges from 2 to 10 inch capacities. Our forging machines can also be equipped with a variety of transfer mechanisms to produce many parts automatically.

Increased Production

Ajax machines are designed for reliable service and maximum production. The Ajax-developed direct-acting air clutch offers instant response and smooth, cushioned starting at high operating speeds for maximum production rates. Accurate torque regulation provides overload protection during heading.

The rigidity, power and precise alignment of the Ajax extension-guided header and die slide help produce consistently accurate forgings that require minimum secondary machining, further enhancing productivity. Metal displacement during piercing is accurate and concentric. Accurate header slide alignment holds tools concentric in the die impression, reducing abrasion and wear when piloting is necessary.

Generous die height on 6 inch and larger sizes provides space for additional forging operations to make more intricate forged parts, and is particularly advantageous on automated machines in these sizes.

Approximately 60% of the header slide stroke is normally available for gathering stock. This can be increased or decreased for special applications at customer's discretion.

Production time is maximized because Ajax machine design keeps set-up time to a minimum. Slip-tail clamps provide all the holding features of studs without the need for lifting clamps during die changes. Ajax machines can be "inched" under power to save time and manual effort.

Ajax machines are convenient to operate, contributing to productivity. Throat opening and operating height provide easy access to the dies so the operator can stand in a balanced position without interference from the tie rod. Forward stock movement is also minimized.

Dependability and Serviceability

Ajax forging machines operate reliably and accurately for extended periods, even under adverse conditions. Moving parts are protected from scale and water by heavy steel shields, with hinged doors for access to vital areas. All components are readily accessible for routine maintenance and service.

The exclusive Ajax underarm construction makes the pitman eccentric bearing easy to inspect and lubricate. The crankshaft can be removed without disturbing the header slide; the cam slide can be removed without disturbing the header slide or the crankshaft! The flywheel, pinion shaft, clutch and brake are located above floor level in the frame extension to the rear of the crankshaft housing. Clutch shaft bearings are capped so the shaft assembly can be removed with minimum machine side clearance.

All machine bearings are conservatively designed and made from carefully selected materials to retain accuracy and assure long life. A pressure lubricating system is standard equipment on 2- through 10-inch machines.

Ajax forging machines are easy to maintain and can be completely disassembled in only a little more space than they occupy. A flat, reinforced concrete slab with adequate area and thickness is all that is required for the foundation.

Automation

The inherent accuracy and reliability of Ajax forging machines make them ideal for automation. When production volume warrants, Ajax forging machines can be fitted with a variety of transfer mechanisms that make forging production completely automatic.

With the cost of forging labor and materials on the rise, automation is one way to boost productivity and profit. An automated Ajax forging machine is the best way to do it.

Our Ajax Service Team is there, as well, to back it with installation follow-up.



Instrumentation and Control

Ajax forging machines have all the standard equipment needed for most applications, and are designed to accept a variety of instrumentation and control systems.

The need to monitor machine functions increases with production speed, and Ajax forging machines can be supplied with systems to put this information at the operator's disposal. The Ajax engineering staff can design a system to monitor and display main bearing temperature, flywheel speed, motor current and power, or stresses in the pitman, frame and die closing mechanism. Lube system operation can even be monitored and, in the event of a failure, can shut down the machine instantly.

Standard Accessories

Ajax forging machines are supplied with steel shields to protect precision internal machine parts from scale and other foreign material. An automatic pressure lubricating system serves all bearings except the clutch, pinion shaft and minor bearings. A hand-pressure lubricating gun is supplied for parts requiring periodic lubrication. The pneumatic system includes a pressure regulator and other essential pneumatic system accessories. Ajax forging machines are supplied with a V-belt motor drive. A complete motor/electrical control system is available.

Optional Equipment

Ajax options include a special built-up crank on 6 inch and larger machines, die and tool holders, instrumentation and control systems, automation systems, and motor and electrical controls. Where certain forgings exert high die loads at right angles to the header slide travel, reinforcing bed clamps can be furnished as an option to provide the necessary rigidity to hold the dies firmly closed during this type of forging operation.

Whether a standard forging machine for a variety of forging requirements or an automated forging machine for high volume production, Ajax-CECO has the experience and design capability to meet your production specifications.

Ajax forging machine sizes range from 1" to 10" capacity, and can be adapted to a fully automated process line or automated with robots.

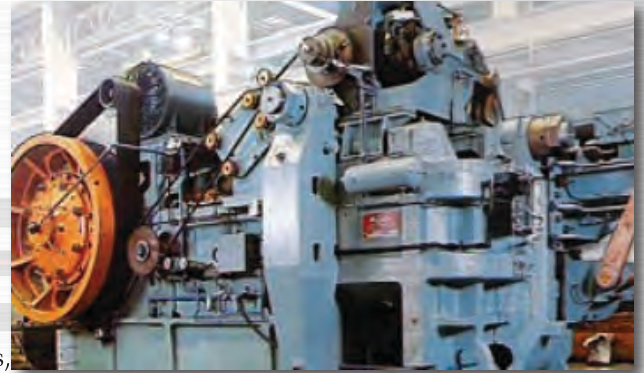
Both hot and cold material can be upset or extruded, depending on the adaptability of the forging design.

Well known Construction Features of Ajax Forging Machines:

- Solid, one-piece, steel cast frame with massive supporting ribs in heading and gripping planes, providing maximum rigidity.
- Air cooled clutch supported between widely spaced anti-friction bearings.
- Link-type reversible air cooled brake of uncomplicated design.
- A variety of eccentric shaft designs available, depending on machine size and application.
- Solid bushing and sleeve assemblies are completely enclosed in bed frame, providing maximum eccentric shaft support.
- Forged steel pitmans with thrust nose design (no forging load taken by wrist pin).
- Full floating plate, providing backup support of moving die.
- Die closing safety spring mechanism located within the machine.
- Die closing knuckle mechanism support to full die height
- Under-slung header slide extension provides solid support and leaves pitman assembly accessible for inspection and maintenance.



Typical 2" Ajax Forging Machine

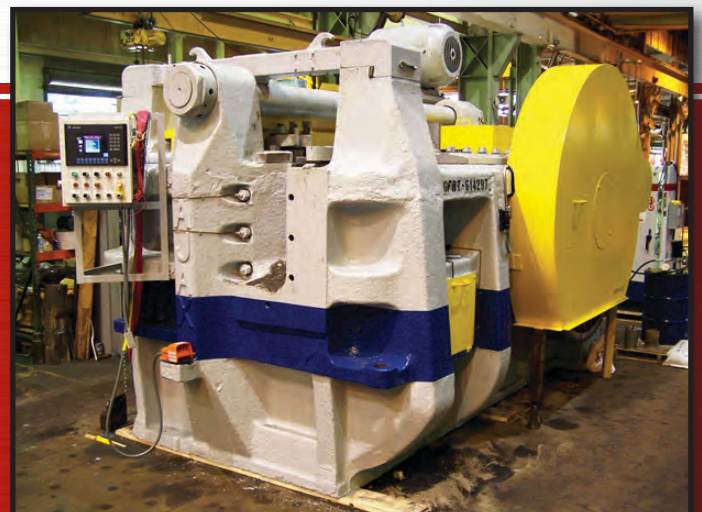


This automated Ajax 10" Forging Machine produces truck rear axles. (Guards removed to show detail.)

For Over 30 Years, the Ajax Manufacturing Company

has been actively involved in rebuilding forging equipment as an integral part of its basic operation.

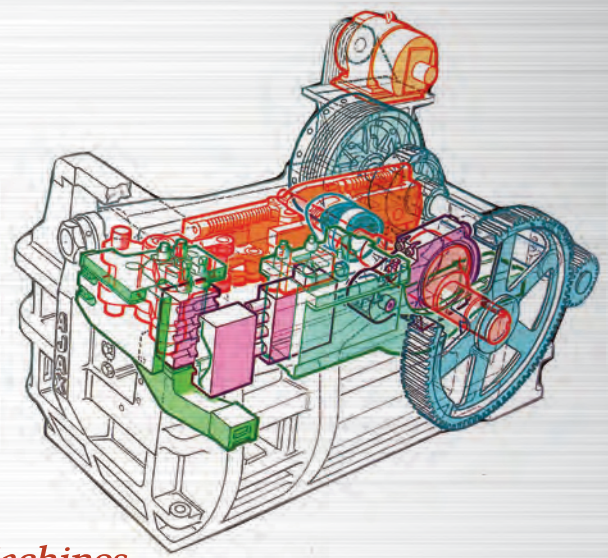
Our competence to remanufacture all forms of forging equipment is not limited to just the range of Ajax and Chambersburg machines, but other well-known brands, as well. Whether the work to be carried out is to be performed in-house or at a customer's own factory, Ajax welcomes the opportunity to assist in your modernization endeavors!



Rebuilt 6 inch Ajax Upsetter

Now the leader in sophisticated forging machines, Ajax built its first forging equipment over 130 years ago.

This phantom view of our 6" unit represents the line of 2" to 10" Ajax Forging Machines that are accepted universally.



Ajax Standard Forging Machines

Machine Size	1	1 1/2	2	2 1/2	3	4	5	6	7	8	10
Rating in Tons	200	300	400	500	600	800	1000	1200	1500	1800	2250
Die Grip in Tons	100	150	248	243	326	366	455	606	995	1300	1800
HDR SL Stroke	6"	8 1/2"	9"	10"	11 1/4"	13 1/2"	15 1/2"	18"	20"	24"	28"
Strokes / Min	90	75	60	55	45	35	30	27	25	23	20
Die Opening	2 1/4"	2 3/4"	3 1/2"	4"	5"	6"	7"	8"	9 1/2"	12"	13 1/4"
Stock Gather	3 3/4"	5 3/4"	6"	6 3/4"	7 1/2"	9"	10"	11"	13"	15"	18"
Hold On	2 1/2"	3 5/8"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6 1/2"	8 3/8"
Die Height	9"	12"	14"	16"	20"	26"	29"	36"	39"	46"	52"
Die Thickness	5"	5"	6"	6"	7"	8"	8"	11"	12"	13"	13"
Die Seat Length	8"	10"	13"	15"	18"	21"	24"	26"	28"	32"	36"
Tool & Die Space (Max.)	20 1/2"	25"	28 3/4"	32"	40 7/16"	47"	51 1/2"	57"	64"	71"	78 1/4"
Eccentric Pin Dia.	7"	8"	9"	10"	21 1/2"	25 3/4"	28 3/4"	16 1/2"	20"	22"	56"
Journal Dia.	6"	7"	7 3/4"	8 1/2"	10"	12"	13"	14"	18"	20"	24"
Flywheel Dia.	54"	58 1/2"	41"	44"	52"	58"	66"	76"	102"	105"	116"
Total Energy (Ft/Lbs)	11,100	13,740	48,110	74,570	86,930	134,430	243,300	375,090	727,530	1,010,770	1,360,000
Clutch Torque (In/Lbs)	171,010	262,052	128,576	202,594	344,260	571,788	869,232	1,411,466	2,012,990	2,012,990	2,814,000
Gear Ratio	1/1	1/1	77/18	86/20	86/20	98/19	89/16	101/17	115/19	125/19	139/21
Torque at Crankshaft (In/Lbs)	171,010	262,052	550,018	911,673	1,480,318	2,949,226	4,835,103	8,385,762	12,183,892	13,243,356	19,321,000
Motor HP	7 1/2	10	15	20	30	40	60	75	125	150	200
Floor Space F-B	7'-4"	8'-0"	10'-8"	11'-6"	14'-5"	16'-1"	18'-0"	20'-4"	23'-9"	25'-0"	26'-9"
Floor Space L-R	6'-2"	6'-6"	7'-0"	7'-7"	9'-0"	10'-2"	12'-0"	13'-4"	14'-7"	15'-4"	17'-11"
Total Machine Height	7'-6"	8'-4"	7'-2"	8'-2"	9'-2"	10'-5"	11'-3"	12'-4"	13'-11"	16'-4"	16'-11"
Depth of Pit	--	--	--	0'-8"	1'-3"	2'-1"	2'-9"	2'-11"	2'-9"	2'-9"	3'-3"
Approx. Weight (In/Lbs)	18,000	27,000	39,000	50,000	93,000	151,000	205,000	275,000	377,000	492,000	735,000

Specifications subject to change.



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