

FORGING PRESSES for the 21st Century



For
Precision

For
Automation

For Top
Production



The Leader in Forging Since 1875

HOT, WARM AND COLD FORGING MACHINERY

Ajax-CECO (The Ajax Manufacturing Company) has designed, engineered and manufactured advanced types of forging equipment for over 100 years. Since the 1930's, when forging presses were initially introduced into its range of forging equipment, we have constantly reviewed and improved our original design features to encompass all the latest design innovations and high-tech options required for a modern forging press to be as efficient as possible for the large scale production of steel and alloy forgings. Based upon a one-piece solid cast steel stress-relieved frame, and well-engineered drive and control mechanism, the **Ajax High Speed Forging Press** is a powerful, rigid, fast-operating machine for the production of accurate warm and near net shaped components, as well as conventional hot forgings.

The **Ajax Forging Press** is offered as a back-shafted or direct-drive machine. Press designs can be modified to give higher torque, variable stroke speed, and longer forging and ejector strokes, according to the work requirements.

Since the introduction of our first vertical forging press into the forging industry and, subsequently, through the design of our **Twin Pitman Forging Press** and **Wide Ram Four Point Suspension Press**, Ajax's expertise has allowed our customers a choice of products that best suits each customer's particular application. Adaptation of **Programmable Controls** and the latest electronic monitoring equipment, used in conjunction with first stage feeders and automatic transfer devices, provides a determination of production capability never before attained. Consequently, through its vast experience in the domestic and foreign forging markets, Ajax has successfully maintained its reputation as a "reliability leader" in the forging industry, making the Ajax Forging Press the valuable and economical forging tool it is today.

Journal bearings directly adjacent to pitman provide maximum rigidity and minimum eccentric shaft deflection

Forged or alloy cast wide steel pitman with special thrust nose design

Simple, multiple link type brake

Shrink disc clamp provides infinite adjustment for brake drum and bottom knockout cam

Friction slip flywheel for maximum safety against overloads

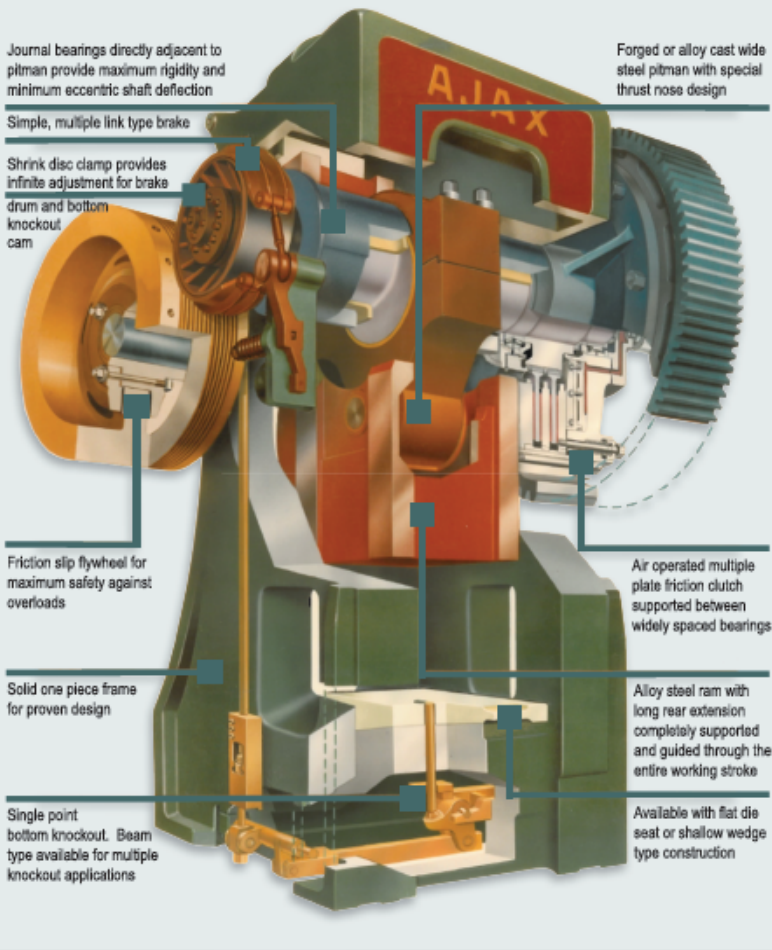
Solid one piece frame for proven design

Single point bottom knockout. Beam type available for multiple knockout applications

Air operated multiple plate friction clutch supported between widely spaced bearings

Alloy steel ram with long rear extension completely supported and guided through the entire working stroke

Available with flat die seat or shallow wedge type construction



Closer Tolerance Forgings

The quality design features of the Ajax Forging Press, particularly its transmission system and the close control guiding of the main ram assembly through its full working stroke, have all been developed for meeting the needs of close tolerance forging. Major design areas influencing the use of the press for high quality, close tolerance and near-net forgings have been engineered for compatibility with most modern and advanced forging techniques, including controlled atmosphere forging.

Longer Die Life

Forging dies for conventional hammers or screw presses must have enough mass to absorb the impact of the blow. Dies used in hydraulic presses must be large enough to dissipate heat generated by metal flowing during the dwell cycle. Since they are not subject to impact or high temperature, forging press dies can be produced as inserts, from selected grades of tool steel that are able to meet the flow characteristics of a particular process. Die life is considerably increased, due to the relevant speed of the press and the subsequent short time that the forging is in contact with the actual die during the bottom part of the stroke.

Operator Skills

Positive ram travel eliminates the need for the judgment of a skilled operator to decide when a forging is down to size. With an Ajax Forging Press, the operator merely trips the press and transfers the heated piece from die station to die station. Automatic ejectors minimize manual effort - even in the production of deep impression forging. The controllable time delay of ejector return reduces worker fatigue. The relatively low labor skill requirement and ease of operation results in high production and low direct labor costs.

Low Maintenance and Downtime

There is no damaging impact as with a hammer. Ajax forging presses run smoothly and without shock. This, combined with a rugged and durable design, results in low maintenance with little downtime.

Efficient Electric Motor Drive

The press is operated by a single electric motor through a multiple V-belt drive. Press installation is simpler and less costly than with other types of forging equipment because only electric power is needed at the press. A moderate quantity of compressed air at about 80 psi is required to operate the air clutch, brake release, ram counterbalance and (when used) air ejector.

Impact Noise and Heavy Foundations are Eliminated

Ajax High Speed Forging Presses are free of the impact noise inherent in a hammer. The forging load is contained within the press frame, minimizing ground vibration (associated with hammers) which can damage other plant equipment and nearby property, or limit operation to restricted hours. The self-contained forging load also eliminates the need for an expensive, impact-absorbing foundation such as is required for a hammer. Foundations for Ajax presses are relatively inexpensive. With good soil conditions, total foundation weight is approximately 50% of the total press weight.



Ajax Forging Presses are built in sizes from 300 to 8000 metric tons.

Forging Presses

300 to 8000 Metric Tons Specifications

		300	500	700	1000	1300	1600	2000	2500	3500	4000	5000	6000	8000
Strokes Per Min.		104	90	80	75	70	65	60	50	45	42	41	35	34
Stroke Length	in	8"	8"	8"	10"	10"	12"	12"	14"	14"	16"	16"	18"	20"
	mm	200	200	200	250	250	300	300	350	350	400	400	450	500
Ram Face L-R	in	17"	22"	24"	27"	31"	36"	42"	52"	50"	56"	60"	66"	74"
	mm	430	530	610	680	780	920	1060	1320	1270	1420	1520	1670	1880
Ram Face F-B	in	17"	21"	24"	27"	31"	39"	42"	49"	46"	52"	68"	60"	68"
	mm	430	530	610	680	780	1000	1060	1240	1170	1320	1720	1520	1720
Top Knock-out Stroke	in	3/4"	13/16"	7/8"	1"	1 - 1/4"	1-3/8"	1-5/8"	1-7/8"	1-7/8"	1-7/8"	1-7/8"	2-1/8"	2-1/8"
	mm	19	21	22	25	32	35	41	48	48	48	48	54	54
Ram to Table	in	20"	23"	25"	25"	30"	35"	38"	41"	42"	45"	63"	48"	54"
	mm	508	610	660	711	762	865	991	1041	1143	1082	1194	1295	1372
Nom. Mech. Stroke	in	1-1/2"	1-3/4"	1-3/4"	1-3/4"	1-5/8"	2"	2-3/8"	2-1/2"	2-1/2"	3"	3"	3-1/2"	4"
	mm	38	44	44	44	41	51	60	64	64	76	76	89	102
Table to Floor	in	20"	30"	26"	26"	30"	33"	39"	39"	39"	43"	55"	55"	55"
	mm	500	500	650	650	750	850	1000	1000	1000	1100	1400	1400	1400
Die Seat L-R	in	20"	22"	23"	28"	32"	39"	46"	54"	54"	61"	62"	70"	78"
	mm	510	550	600	710	820	980	1170	1380	1370	1540	1570	1770	1980
Die Seat F-B	in	23"	30"	36"	35"	33"	48"	52"	60"	56"	62"	78"	70"	78"
	mm	580	630	900	900	850	1220	1320	1520	1420	1720	1980	1770	1930
Width Betw'n Columns L-R	in	20.5"	25"	28.25"	32.5"	37.5"	39.76"	50"	48"	60"	65.5"	69.5"	76"	80"
	mm	521	635	718	826	953	1010	1270	1219	1524	A1664	1765	1930	2032
Side Window Width	in	12"	13"	16"	20"	22"	27.95"	27"	28"	28"	36"	36"	36"	36"
	mm	304.8	330.2	406.4	508	558.8	710	685.8	711.2	711.2	914.4	914.4	914.4	914.4
Floor Space L-R	in	54"	88"	98"	110"	134"	147.64"	164"	164"	184"	200"	212"	229"	234"
	mm	1372	2235	2489	2794	3404	3750	4166	4166	4674	5080	5385	5817	5944
Floor Space F-B	in	54"	84"	94"	105"	112"	128.54"	141"	147"	152"	171"	176"	188"	204"
	mm	1372	2134	2388	2667	2845	3265	3581	3734	3861	4343	4470	4775	5182
Height Above Floor	in	129"	147"	160"	172"	192"	203.31"	222"	221"	237"	261"	284"	288"	300"
	mm	3277	3734	4064	4369	4877	5164	5639	5614	6020	6629	7214	7315	7620
Motor (cont. rating)	hp	20	25	40	60	75	100	150	150	200	250	400	400	500
	kw	14.9	18.6	29.8	44.7	55.9	74.6	111.9	111.9	149.1	186.4	298.3	298.3	372.9
Motor R.P.M.		900	900	900	900	900	900	900	900	900	900	720	720	720
		720	1200	1200	1200	1200	1200	1200	1200	1200	1200			
Gross Weight	lbs	36,000	58,000	81,000	109,000	148,000	218,000	308,000	330,000	423,000	585,000	712,000	918,000	1,150,000
	kg	16,364	26,364	36,818	49,545	67,273	99,091	140,000	150,000	192,273	265,909	323,636	417,273	522,727
Air Consumption (per stroke)	cu.ft.	0.26	0.41	0.46	0.65	0.85	1.12	1.31	1.51	1.95	2.36	2.97	2.99	3.10
	cu.m.	.0074	.0116	.0130	.0184	.0241	.0317	.0371	.0428	.0552	.0668	.0841	.0847	.0878

AJAX reserves the right to alter specifications.



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