

HCA Series

Open gap C-frame hydraulic presses
6-250 tons



GREENERD

Tool mounting

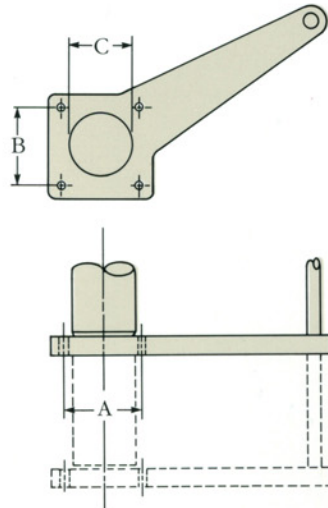
Standard and optional methods

Single-ram link

Standard on 6, 12, 20, and 30 ton presses. Optional on others.

This compact, convenient tooling mount has a symmetrical tool hole mounting pattern. It guides the ram throughout the stroke to prevent ram rotation.

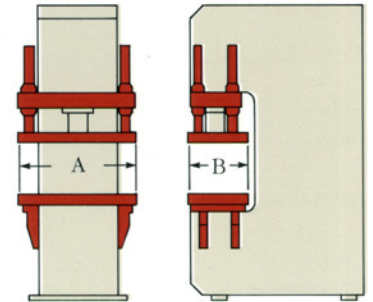
Tons	A	B	C
6	4	4	1 3/4
12	4	4	2
20	5	5	2 1/2
30	5	5	3



Oversize four-post guided ram

The oversize four-post guided platen and bed (option) has been a popular feature on Greenerd presses for many years. The large upper platen and equal size bed provide a large and stable area for mounting large dies. Eight bushings guide the hardened and ground guide rods.

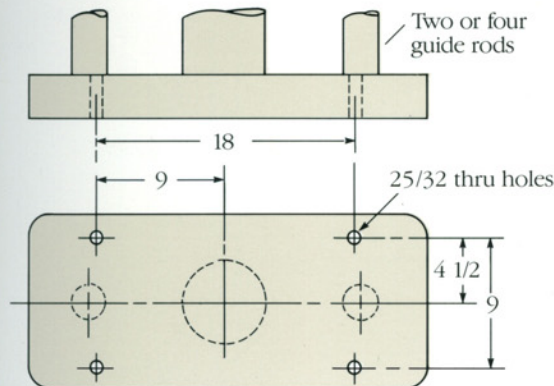
Tons	A	B
40, 50	36	15
75	38	18
100, 150	40	20
200, 250	50	29



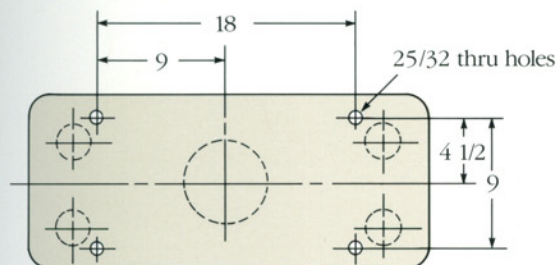
Two- and four-post guided ram

Standard on 40-75 ton presses (2-post), and 100-250 ton presses (4-post).

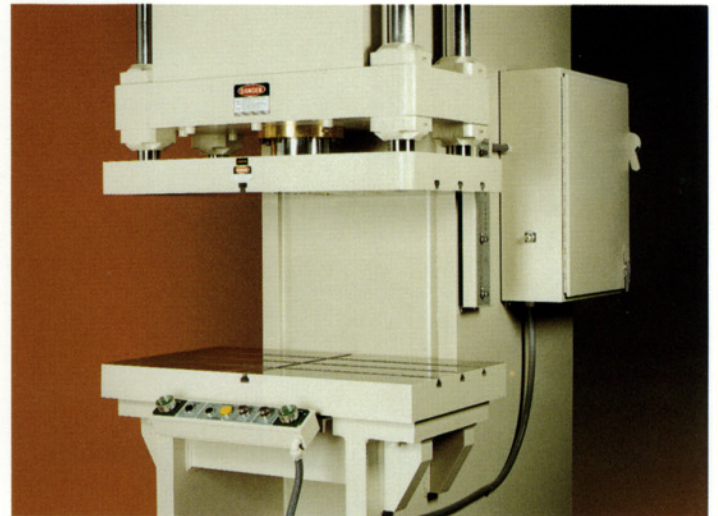
A heavy ground upper tooling plate is attached to the ram and guide rods. The standard hole pattern shown is provided for mounting tooling.



Two post

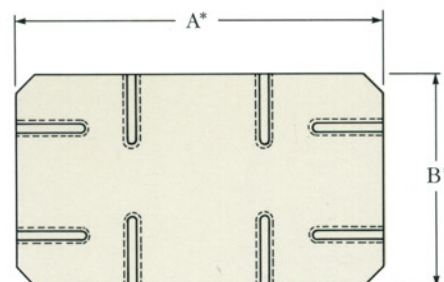


Four post



Universal T-slotted plates

This universal tooling plate (option) has T-slots for attaching tools to the lower bolster plate. Consult the factory for details on dimensions or other special T-slot patterns.



*See dimensions for each tonnage group, page 4.

All dimensions in inches.

Selecting a model

1. Select the desired tonnage. If tonnage requirements are unknown, Greenerd engineers will assist you. All presses are capable of delivering the full tonnage. And all presses are adjustable to a lower tonnage (to 20% of the maximum).

2. Select a model in a tonnage group. A guide to the model number follows:

Example:

HCA-	75-	60	R	12
HCA Series	Full tonnage	Large pump, GPM	Regenerated volume	Small pump, GPM

3. Pump volumes, GPM. As the pump volumes increase, so does speed and horsepower. Accordingly, the cost of the press also increases. Model numbers with a single pump volume at the end signify a single, constant delivery pump. These are the most economical presses.

4. Regenerated. An "R" indicates a regenerated pump volume. This type of hydraulic system produces a faster rapid advance stroke.

5. When two pump volumes are shown, as in the example above, both volumes are combined to achieve rapid advance and rapid return ram strokes. These ram speeds are for closing and opening the press with limited pressure.

6. Pressing speed. The small volume pump listed (12 GPM in example above) provides the speed for the *pressing* stroke. The terms *pressing* or *press* speed have a very specific meaning which is easily misunderstood. This is the maximum speed at which the press ram will travel when under a full-tonnage load. The pressing speed occurs during the time when your tools meet the resistance of your work (see table, "Ram speed: press IPM," page 5).

7. Your selection of speed, therefore, should be based on the pressing speed. Jobs with a long pressure stroke, such as deep drawing, broaching, long shaft assembly, and some compacting, require faster pressing speeds. Jobs where pressure is applied over very short distances such as blanking, coining, riveting, staking (etc.), can use models with slower pressing speeds. The combination of pressing speed, rapid advance, and rapid return, results in the number of strokes per minute.

8. Strokes per minute. Consult with the factory to determine typical estimates of strokes per minute for your jobs.

9. Press Design Group. Greenerd HCA presses are divided into four Press Design Groups (A through D), based on the operating characteristics of the presses. See chart on page 5.

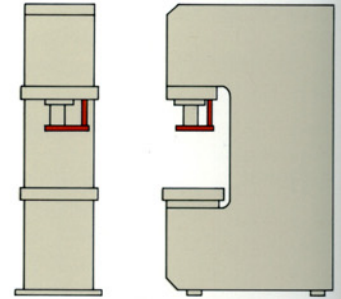
Selecting a tool mount

Greenerd offers a variety of standard and optional methods of mounting tools and for guiding the press ram. These selections allow you to choose the best method of attaching your tools to the press. The illustrations below show the variety of standard and optional arrangements offered in each tonnage group.

For further information on these tool mounts, see pages 4 and 7.

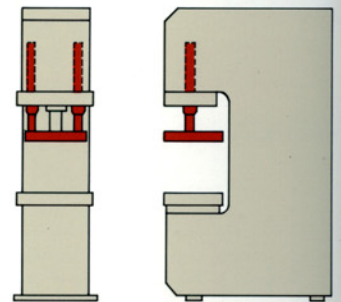
Single-ram link

Standard on 6-30 ton models.
Optional on all other models.
See dimensions, page 7.



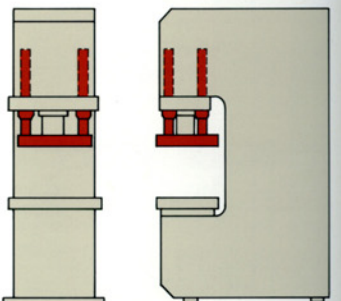
Two-post guided ram

Standard on 40-75 ton models.
Optional on all other models.



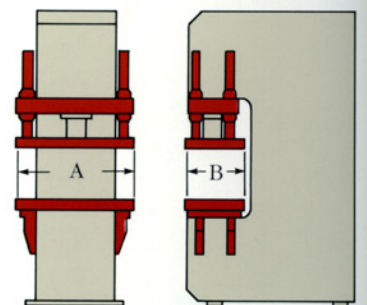
Four-post guided ram

Standard on 100-250 ton models.
Optional on all other models.



Oversize four-post guided ram

Optional on all models.
See dimensions, page 7.



Press Design Groups for HCA presses

All Greenerd HCA series open gap presses are built for long service in multi-shift industrial production applications.

To assist you in selecting the appropriate model, the HCA Series is divided into four Press Design Groups. A general description of each group follows:

Press Design Group	A	B	C	D
Applications	For hand loaded, low-tonnage assembly work such as bearing assembly, small electric motor assembly, shaft or part assembly.	Also for hand loaded assembly, but faster speeds for stamping, forming, drawing, embossing, flattening, etc.	For both hand loaded work and automatic cycling. For coining, embossing, flattening, forming, drawing, etc.	For heavy-duty presswork at higher tonnage and high speed, such as blanking, piercing, forming, drawing, and similar work.
Speed	Ram speeds suitable for hand-loaded work where relatively slow speed facilitates assembly; not for automatic cycling.	Faster ram speeds and faster cycle times than Group A presses.	Large pumps allow for rapid advance and return speeds. Moderate pressing speeds conserve on motor HP.	Fastest presses. Largest pumps for fastest ram travel throughout stroke. Fast valving and electronics also add speed.
Features	Compact frames, self cooling, basic control system, 1800 RPM motors, conventional 4-way valves make Group A presses the most economical to buy.	Same construction as Group A presses except both regenerative and double-pump hydraulic systems are provided for faster rapid advance and return strokes.	Quiet 1200 RPM motors promote long pump life. Electronic programmable controller ensures fast system response. Fast acting cartridge valves provide fast valve shifting.	Largest pumps for fastest cycle times. Large cartridge valves. High torque 1800 RPM motors meet peak power demands, save on HP. Can interface with the most complex computer integrated manufacturing cells.
Tons	6 to 20	6 to 75	30 to 250	100 to 250

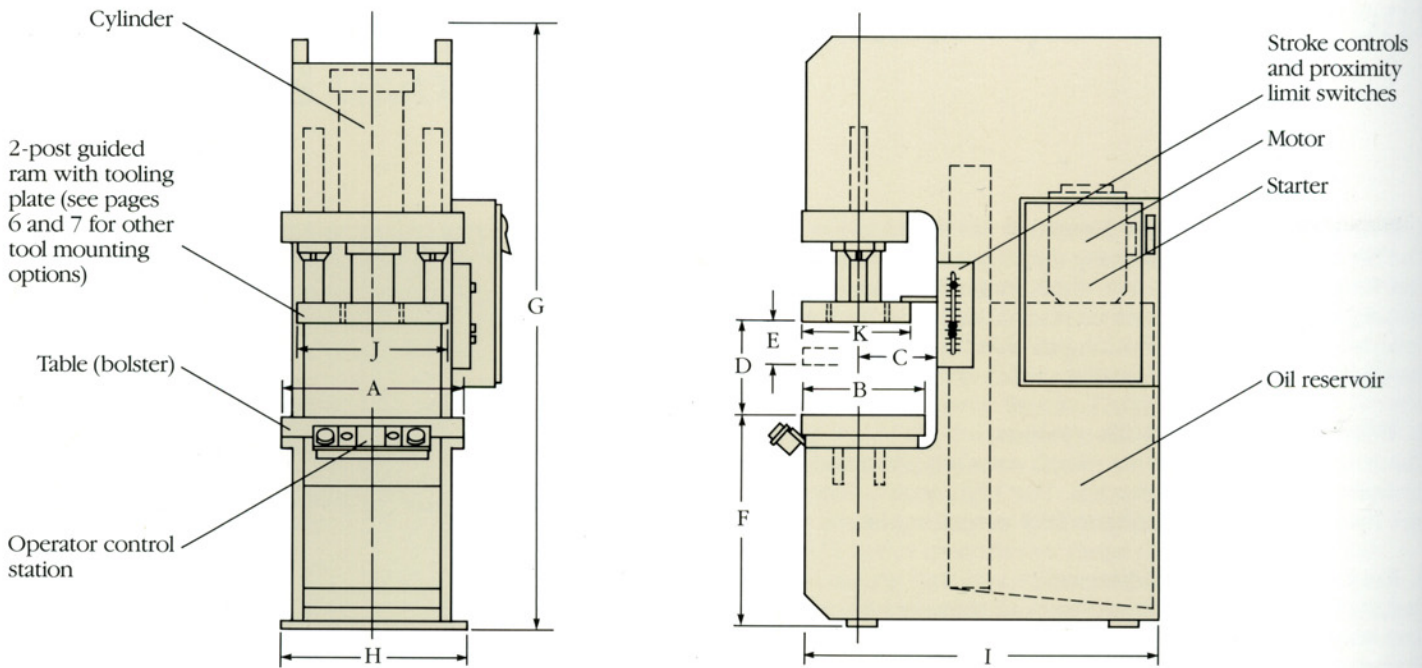
Specifications

Tons	Model No.	Ram Speeds, IPM			HP*	RPM	Press Design Group
		Close	Press	Open			
6	HCA-6-3	141	122	276	5	1800	A
	HCA-6-6	282	244	552	7.5	1800	A
	HCA-6-10L3	635	122	1242	5	1800	B
12	HCA-12-6	166	142	269	10	1800	A
	HCA-12-6R	441	142	269	10	1800	B
	HCA-12-10R3	993	71	605	5	1800	B
20	HCA-20-6	110	95	181	10	1800	A
	HCA-20-6R	282	95	181	10	1800	B
	HCA-20-13R3	776	47	497	7.5	1800	B
30	HCA-30-12R	288	125	276	20	1800	B
	HCA-30-30R8	912	82	877	20	1200	C
40	HCA-40-12R	220	85	176	20	1800	B
	HCA-40-30R8	698	55	559	15	1200	C

Tons	Model No.	Ram Speeds, IPM			HP*	RPM	Press Design Group
		Close	Press	Open			
50	HCA-50-18R	211	98	216	30	1800	B
	HCA-50-60R8	800	41	833	20	1200	C
75	HCA-75-18R	175	74	156	30	1800	B
	HCA-75-60R8	661	31	592	20	1200	C
100	HCA-100-52R6	484	28	480	20	1200	C
	HCA-100-42R10	431	41	428	30	1800	D
150	HCA-150-52R6	310	18	322	20	1200	C
	HCA-150-57R27	443	74	462	50	1800	D
200	HCA-200-42R10	219	22	221	30	1200	C
	HCA-200-57R27	345	57	348	50	1800	D
250	HCA-250-42R10	158	16	165	30	1200	C
	HCA-250-57R27	249	42	260	50	1800	D

* All presses are horsepower for a typical application such as 2" rapid advance, .250" press, and 2.250" rapid return. Consult with factory for other applications.

Press dimensions



Key	Tons	6	12	20	30	40	50	75	100	150	200	250
A	Table, left to right	20	20	24	24	26	26	32	34	34	41	41
B	Table, front to back	12	12	13	13	15	15	18	20	22	26	29
C	Throat	9	9	10	10	11	11	12	13	14	15	16
D	Daylight*	18	18	18	18	18	18	24	24	24	24	24
E	Stroke length†	12	12	12	12	12	12	18	18	18	18	18
F	Floor to table	34	34	34	34	36	36	36	38	38	40	40
G	Height, overall	100	100	104	104	110	110	114	124	124	130	130
H	Width at floor	20	20	24	24	26	26	32	34	34	41	41
I	Front to back	44	46	48	50	52	54	60	65	70	74	80
J	Width, tooling plate	**	**	**	**	24	24	30	32	32	37	37
K	Depth, tooling plate	**	**	**	**	12	12	15	18	18	20	20
	Weight, approx lbs	3,500	3,600	4,400	5,200	6,800	7,000	12,000	15,000	18,000	22,000	24,000

* Daylight is the maximum open distance.
Shut height = Daylight – max stroke. Extra daylight available on request.

† Stroke length is adjustable from 1" to maximum. Extra stroke length available on request.

** These models use single-ram link tooling mount. See page 7. Consult factory for sizes on optional 2- or 4-post guided ram (upper platens).

All dimensions in inches.

From its beefy frame to its versatile controls, the HCA is a dependable workhorse.

1. Heavy steel weldment frame.

The bed and cylinder mounting surfaces are machined parallel for perfect die alignment. Each frame is engineered for its rated tonnage with generous reserve strength. Structural deflection is minimized, for long die life. Deep ribbing under the bed forms a stable mounting surface for tools and dies.

2. Wide range of hydraulic systems.

Standard and special systems match your requirements. Low, medium and high speed models. The high quality, low pressure hydraulic system is designed for extra long life.

3. Easy-to-use control systems.

Designed for fast response and easy adjustment. All presses have anti-tie down, non-repeat, dual-palm button controls. Slow speed jogging simplifies setup. Wide choice of options (see page 8).

4. Heavy-duty industrial cylinders.

Our hydraulic cylinders have a large reserve capacity. The large diameter rams are solid steel, hard chrome plated, to resist scoring and pitting. Leaks are minimized by step-cut piston rings, multi-lip packing, and proper sealing. Ram travel is precisely square to the table.

5. Guided ram.

Our selection of guiding methods offers the best combination for your application. The choice of a ram link, a two-post, or four-post guided ram system assures proper tool alignment at any point in the stroke. (Photos on pages 2 and 3.)

6. Upper tooling plate.

Fastened to the ram and guide posts, it is ground flat and parallel. Through holes for easy upper die shoe mounting. Large sizes accept big die sets. For tool mounting choices, see pages 6-7.

7. Large opening (daylight).

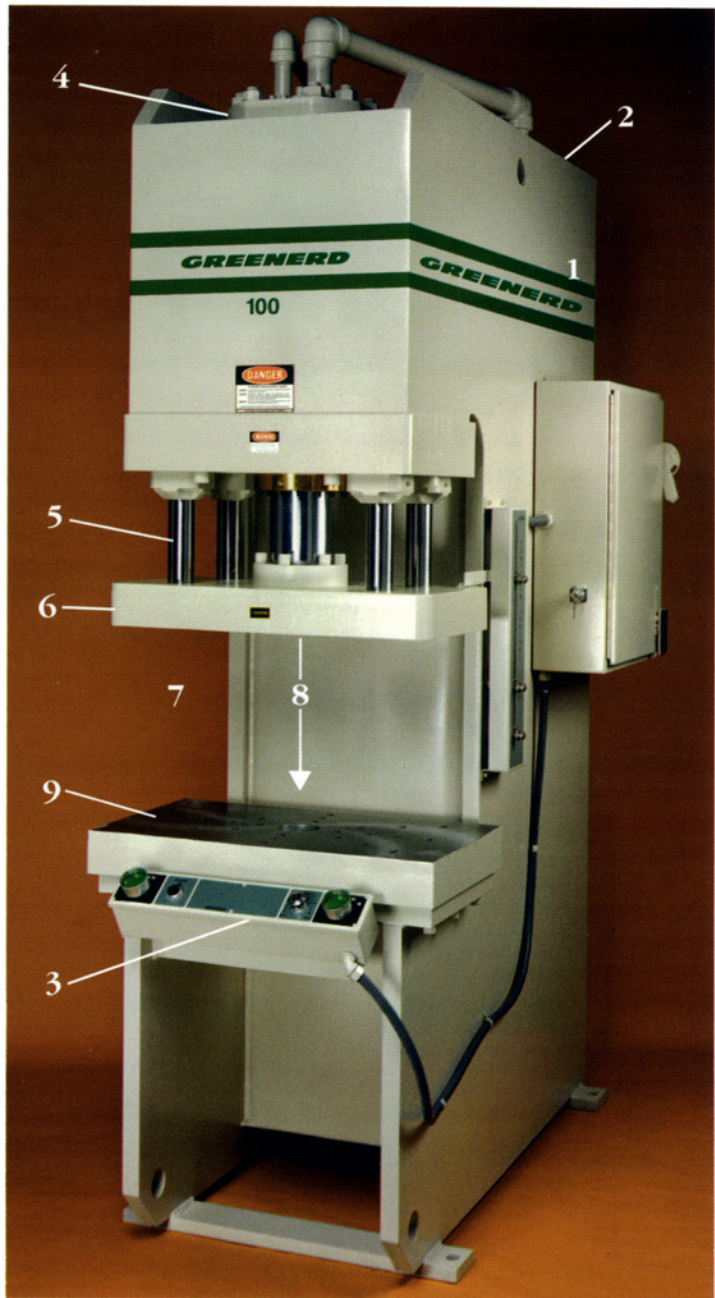
Accommodates large die sets and/or long stroke. Special daylights (larger or smaller) are available.

8. Long stroke lengths.

Designed for differing tool heights as well as maximum clearance for installing or adjusting tools and dies. Stroke lengths are adjustable from about 1 in. to maximum. Special stroke lengths are available.

9. Bolster plate.

Fastened to flat bed, it's easily removed. Ground flat and parallel. Holes, T-slots, and cutouts are available.



Model HCA-100 with 4-post guided ram.

The HCA Series

It's a new generation of production presses, designed to give you more versatility and features than ever before.

For over 100 years, Greenerd has been building quality presses. The HCA series is the latest in a long line of hydraulic gap frame presses.

It is the broadest line of C-frame presses available anywhere.

We offer an unusually wide range of standard equipment, special features, accessories and options. The extent of choices suggests the wealth of experience that Greenerd brings to the manufacture of hydraulic presses. And every press we offer is designed and built at our plant in Nashua, New Hampshire, U.S.A.

Greenerd presses are founded on a tradition that emphasizes simplicity, quality, and durability. The new series combines these traditional qualities with carefully selected new press technology. The HCA series—today's most compelling choice for versatile pressing operations.

More compact press frames.

HCA presses retain the tough, extra-heavy steel weldment frames of earlier designs. Model for model, we designed the presses with new working dimensions to make tooling easier, to reduce operator reach, and to achieve stiffer construction. The results: less frame deflection, longer tool life, better parts and less operator fatigue. Drive motors are now housed entirely inside the frame. Not only does this reduce floor space, but it also reduces noise.

Faster presses—up to 100 strokes per minute.

The HCA Series extends our range of higher-speed models. Fast-acting cartridge valves and electronic controls are used on some models in *Press Design Groups C and D* (described on page 5). The result: more parts per minute with higher reliability. Also, more efficient electric motors are used—and they deliver high horsepower output with lower power consumption.

More options than ever before.

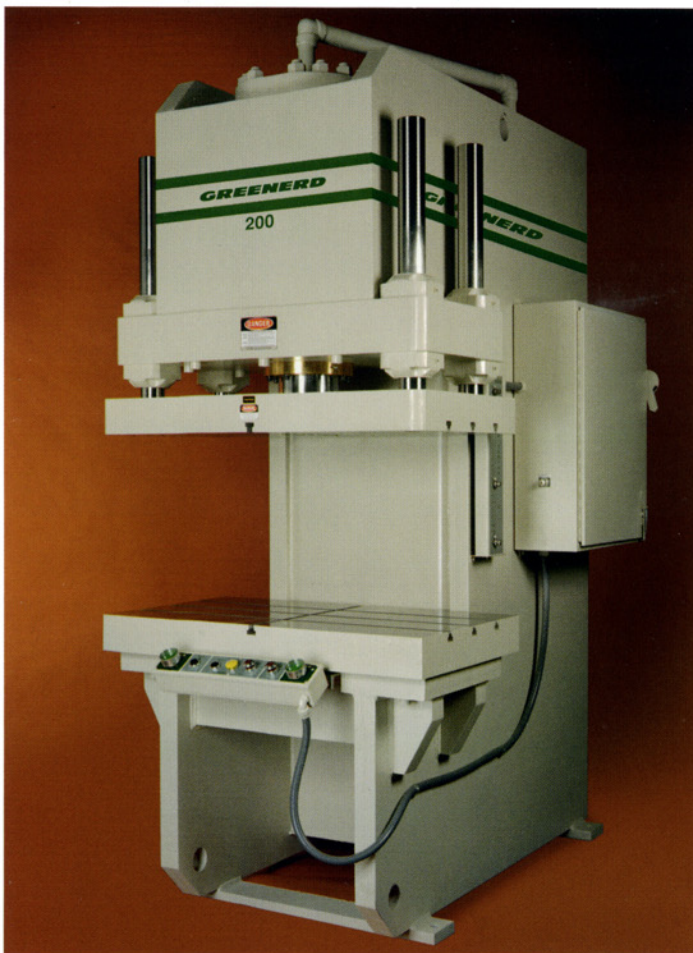
Today's manufacturing demands flexibility. The HCA Series recognizes the need for quick changeover from one job to another. A wide selection of equipment is available to handle the simplest hand-loaded bearing assembly jobs to the most complex computer integrated manufacturing cells. You can pick and pay for just the options that fit your special needs.

Special engineering—we're here to help you.

Whatever your special requirements, experienced Greenerd personnel are willing to assist in any way they can.

Commitment to service.

Greenerd stands behind every press we make—with spare parts, engineering know-how, and dedicated service.



Model HCA-200 with Greenerd's exclusive oversize bed and 4-post guided ram.



Model HCA-75 with rugged 2-post guided ram.



Model HCA-30 with space-saving, economical ram link.

Standard features

Optional features

All Greenerd HCA presses include the following standard features:

Frame construction

- All-steel weldment frame.
- Removable surface-ground table (bolster).
- Upper tooling plate—three standard selections, depending on press tonnage: (1) Single-ram link, (2) 2-post guided ram, and (3) 4-post guided ram. (See page 6 for standard and optional selections, and pages 4 and 7 for dimensions.)

Hydraulic system

- Heavy-duty hydraulic cylinder with long-life chevron packing.
- Adjustable tonnage from maximum to 20% of the maximum.
- Pressure gauge with shut-off valve.
- High-performance intervane pumps flanged directly to motor.

Control system

- Dual-palm button controls—anti-tie-down, non-repeat.
- Operator controls in oil tight enclosure.
- Keyed selector switch for run and inch (jog) modes.
- Illuminated emergency stop button.
- Calibrated stroke control.
- Proximity limit switch stroke controls.
- Pre-slow down (on double pump models).
- High-quality 1800 rpm or 1200 rpm industrial motors. 230/460 V, 3-phase, 60 cycle AC.
- Motor starters and control circuits in fusible disconnect enclosures.

The following optional features are available for all Greenerd HCA presses:

Frame construction

- T-slotted bolster plates and/or special tooling holes.
- Extra daylight or other custom frame features.
- Extra stroke lengths.
- Oversize 4-post guided ram.
- Shuttle tables.
- Rotary index tables.
- Quick die change systems.
- Special paint.

Hydraulic system

- Water-cooled heat exchangers.
- Air-cooled heat exchangers.
- Speed control to adjust ram pressing speed.
- Hydraulic cushions.
- Hydraulic and mechanical knockouts.
- Hydraulic impact dampers.

Control system

- Distance reversal switch.
- Pressure reversal switch.
- Automatic cycle.
- Dwell timers.
- Digital touch screen control (see photo below).
- Electronic light curtains or barriers, guards or gates.
- Die safety protection systems.



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Note: All photos and drawings in this catalog are for clear illustration of the press and are not intended to suggest the use or non-use of safety devices or point-of-operation guards.

All HCA press controls conform to OSHA requirements. Additional guards may be required depending on the press application and mode of operation.