



Cat[®] Hydraulic Hammers

H110Es, H115Es, H120Es, H130Es,
H140Es, H160Es, H180Es

FEATURES:

Completely Cat[®]

- E series hammers bring together Caterpillar customer knowledge; performance, quality, serviceability expectations; and manufacturing and logistics experience. From design through manufacture — E series hammers are completely Cat: from the inside out.

Rugged Design

- E series Hammers feature an innovative look with a newly designed, symmetrical housing. Hammer can be rotated 180° front-to-back, compensating for wear.
- A sleek, curved front and back profile and one piece side plates concentrate stress to the most robust areas of the hammer, eliminating weak points
- Rock Edges are located at the bottom of the housing to quickly position boulders and protect the hammer from wear. Edges are weld-on and replaceable — the foundation for an optional wear package.
- Top and side buffers — a part of the suspension — improve recoil and protect the machine.

Operator-Friendly

- E series Hammers are silenced. Noise suppression is valuable in urban and restricted work areas.
- An automatic shut off instantly stops the piston when breaking through material — preventing blank firing.
- An interlocking quad wear system guides and supports the front head improving operator feel and control.
- An optional Hammer-Mount Autolube System is available for continual greasing of the hammer during operation.

Peak Performance

- Easy access to vital maintenance areas are part of E series hammer design. Quick access to maintain and adjust helps assure the hammer operates at its peak.
- Tool removal process is simplified and achievable with common hand tools reducing removal time by 40% over earlier hammer models.
- When lower tool bushing reaches the wear limit, it can be easily rotated or replaced to bring it back into spec.

Hammer / Machine Compatibility

Hydraulic Excavators, and Backhoe Loaders. Contact your Cat dealer for specific machine configurations.

Model	Machines
H110Es	311, 312, 314, 315, 316
H115Es	312, 314, 315, 316, 319, 320
H120Es	315, 319, 320, 321, 324, 329
H130Es	319, 320, 321, 323, 324, 328, 329

Model	Machines
H140Es	323, 324, 328, 329, 336
H160Es	336, 345, 349
H180Es	345, 349, 374

Cat Hydraulic Hammers

Enduring Structure, Easy Access to Maintenance Areas

On-Machine Recharging

– Easy accumulator access allows for hammer recharging while mounted on the machine (see ③ on next page).

Sleek, Curved front and back profile concentrates stress to the most robust areas of the housing, eliminating weak points.

Easy Access for maintenance and adjustment. Rubber side covers remove and replace easily, allowing quick access to

- » pressure control valve
- » autolube connection
- » return and supply connections

Rock Edges enable quick positioning of boulders, protect front and back of housing. Edges are weld-on and replaceable – the foundation for optional wear package.

Tools are heat-treated, matched to piston diameter and mass to deliver full blow energy. Tools for E series hammers will not work with prior series hammer models.

Symmetrical, Reversible Housing

rotates 180° to compensate for wear, extends hammer life.

Easily Tune Performance – Pressure control valve is accessible without removing or disassembling the hammer (see ④ on next page).

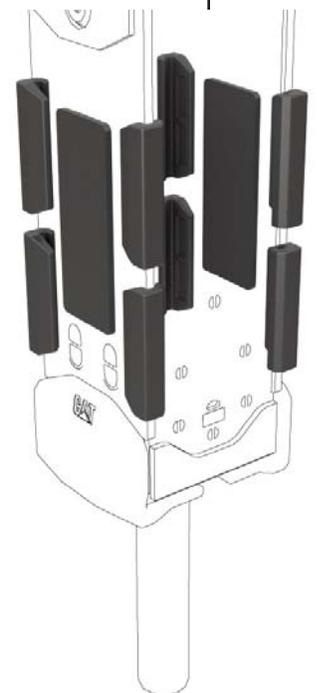
One Piece Side Plates – No welds at critical points eliminate the potential cracking or breaking.

Hammer-mount Autolube System

offers continual greasing as long as the hammer is being operated. Hammer-mount keeps the lube system on the hammer, allows sharing between carriers. (Optional system.)

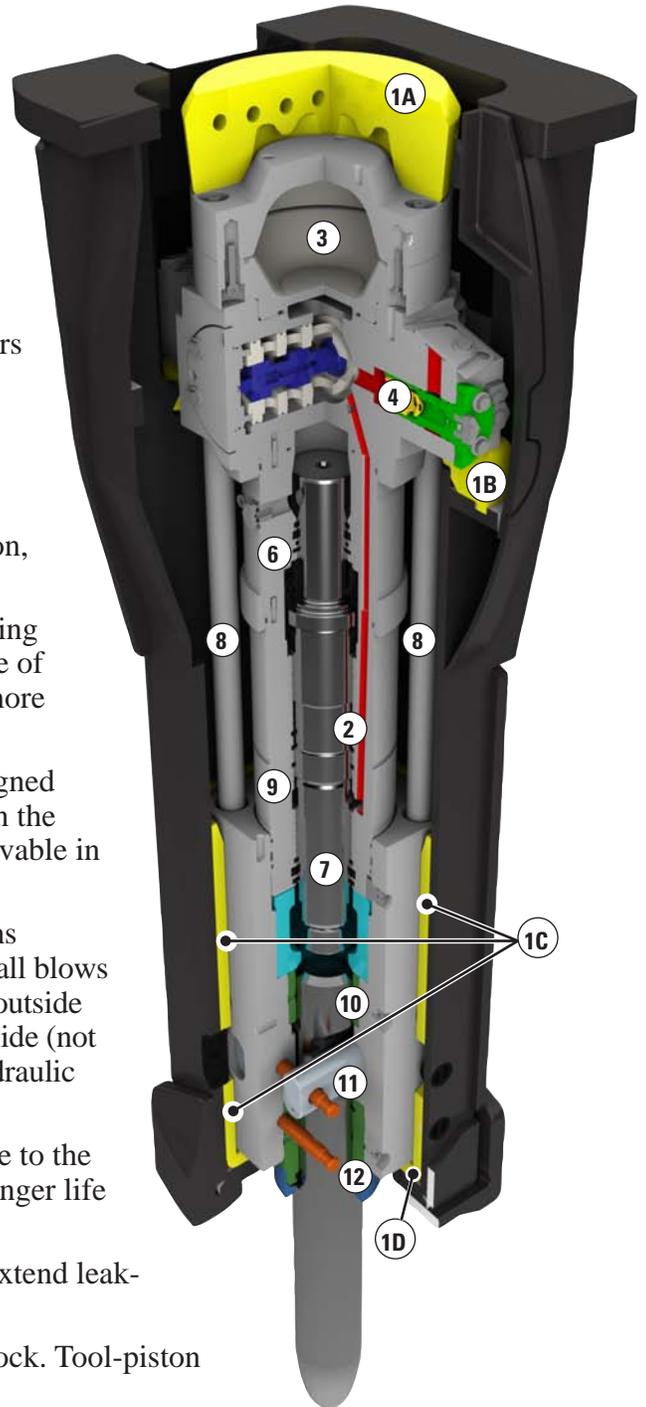


Wear Package armors all four sides of the housing for additional protection in high abrasion applications such as trenching and boulder breaking. (Optional package.)



Sound Suspension, Long-Lasting Components

- ① **Unique Suspension System** – Improved recoil, support and guidance protects the carrier, increases hammer durability. Entire power cell is secured firmly inside housing. Noise suppression, operator feel and control is improved.
 - ①A **Large Top Buffer** – Absorbs vibration from the hammer, preventing damaging impulses from reaching the carrier.
 - ①B **Two Side Buffers** – Suspend the power cell, stabilize reflective forces and dampen tie rod loading. Side buffers can be easily inspected during daily walk-around.
 - ①C **Interlocking Quad Wear System** – Wear plates guide and supports the front head. Plates can be rotated 90° – doubling their service life.
 - ①D **Lower Buffer** – New bottom covers and absorbs vibration, dampens tie rod loading, enhances noise suppression.
- ② **Auto Shut Off (ASO)** – Instantly stops the piston when breaking through material. Prevents blank firing, which is a top cause of hammer wear. Reducing wear improves maintenance and more productive hours of work.
- ③ **Accumulator** – Self-contained membrane accumulator designed for long life. Port is accessible while hammer is mounted on the machine making testing and recharging a routine task achievable in the field.
- ④ **Hydraulic Valves** – A Pressure Control Valve (PCV) maintains maximum hydraulic pressure to ensure the hammer delivers all blows at full power. PCV can be easily checked and adjusted from outside the hammer in about 30 minutes. A check valve on the inlet side (not shown) isolates harmful pulsation spikes from the carrier hydraulic circuit.
- ⑤ **Autolube Connection and Grease Channel** – Provides grease to the upper and lower tool bushings to ensure proper greasing, longer life for bushings and tool. (Not shown on illustration.)
- ⑥ **Seal Carrier** – Contains special high performance seals to extend leak-proof operation.
- ⑦ **Piston** – Long piston transfers a long shock wave into the rock. Tool-piston diameters are matched for maximum energy transfer.
- ⑧ **Tie-Rods** – Larger threads improve load carrying capability, durability and reliability.
- ⑨ **Cylinder** – Engineered to be durable and reliable with minimal maintenance and down time.
- ⑩ **Upper Tool Bushing** – Guides the tool to optimize in-line piston to tool contact.
- ⑪ **Tool Retaining Pins & Keepers** – Tool removal process is simplified, achievable with common hand tools. Removal time reduced by 40% over previous models.
- ⑫ **Lower Tool Bushing** – As bushing reaches the wear limit, it can be easily rotated (90°) or replaced to bring it back into specification. Dust seals keep contaminants out.

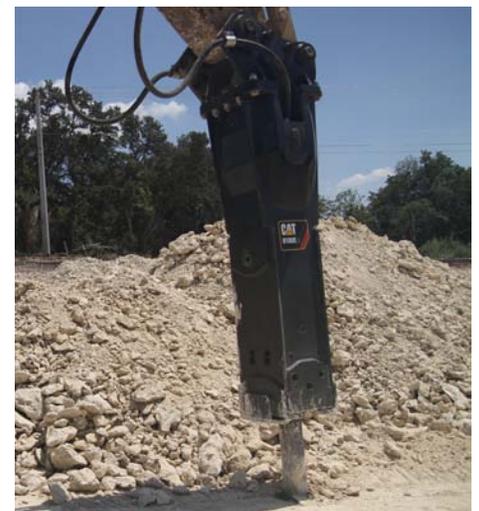


Cat Hydraulic Hammers



Specifications

		H110Es	H115Es	H120Es	H130Es	H140Es	H160Es	H180Es
Carrier Weight Range	t (lb)	11–18 (24,300–39,700)	12–20 (26,500–44,100)	16–27 (35,300–59,500)	18–36 (39,700–79,400)	24–42 (52,920–92,610)	32–55 (70,560–121,275)	42–76 (92,610–167,580)
Operating Weight Range	kg (lb)	950–1,080 (2,095–2,381)	1,070–1,460 (2,359–3,219)	1,480–1,860 (3,263–4,101)	1,750–2,140 (3,859–4,719)	2,410–2,660 (5,314–5,865)	3,230–3,530 (7,122–7,784)	3,990–4,340 (8,798–9,570)
Impact frequency	blows/min.	450–1,000	370–800	350–620	320–600	325–540	400–505	275–450
Energy class	J (ft. lb.)	2,712 (2,000)	4,067 (3,000)	4,745 (3,500)	6,101 (4,500)	8,135 (6,000)	11,524 (8,500)	16,270 (12,000)
Acceptable oil flow	lpm (gpm)	60–120 (16–32)	70–130 (18–34)	100–170 (26–45)	120–220 (32–58)	160–230 (42–60)	220–300 (58–79)	220–300 (58–79)
Operating pressure	kPa (psi)	16,000 (2,320)	15,000 (2,175)	15,000 (2,175)	15,000 (2,175)	16,000 (2,320)	16,000 (2,320)	16,000 (2,320)



Applications Guide with Standard Tools



Chisel (C)

Applications

- Sedimentary and weak metamorphic rock into which tool penetrates
- Concrete

Select when:

- Working in non-abrasive but ductile rock
- Needing medium penetration rate into rock.



Moil (M)

Applications

- Sedimentary and weak metamorphic rock into which tool penetrates
- Concrete

Select when:

- Working in soft, non-abrasive rock
- Needing greater protection against excessive retaining pin groove wear



Blunt (B)

Applications

- Igneous and tough metamorphic rock into which tool doesn't penetrate

Select when:

- Demolishing concrete structure
- Boulder breaking

	H110Es	H115Es	H120Es	H130Es	H140Es	H160Es	H180Es
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1. Road building / construction

Breaking of road surface	C, M	C, M	C, M	C, M	C, M	C, M	C, M
Breaking uneven bedrock to lay a road	C, M	C, M	C, M	C, M	C, M	C, M	C, M
Primary breaking to prepare road bed					C, M	C, M	C, M
Trench excavation for drainage	C, M	C, M	C, M	C, M	C, M	C, M	C, M
Demolition of bridges	C, M	B, C, M					
Heavily reinforced bridge pillars					B	B	B
Making holes (for traffic signs, lamp posts)	M	M	M	M	M	M	M
Breaking of frozen ground	C, M	C, M	C, M	C, M	C, M	C, M	C, M

2. Demolition / housing development

Demolition of concrete walls, roofs, floors	C, M	B, C, M					
Demolition of light, reinforced concrete (<20")	M	B, M	B, M	B, M			
Brick walls	C, M	B, C, M					
Rock trenches for mains/water supply/utilities	C, M	C, M	C, M	C, M	C, M	C, M	C, M
Rock excavation for foundation	C, M	C, M	C, M	C, M	C, M	C, M	C, M
Mass excavation of rock for industrial building bases				C, M	C, M	C, M	C, M
Massive reinforced concrete foundations					M	M	M
Separating rebar from concrete (for recycling)	C, M	B, C, M					

3. Quarrying / open cast mining

Secondary boulder breaking	B	B	B	B	B	B	B
Primary breaking of rock				C, M	C, M	C, M	C, M
Breaking over sizes on a crusher/feeder/feed chute	C, M	B, C, M					

4. Underground applications

Scaling	C	C					
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5. Metallurgical applications

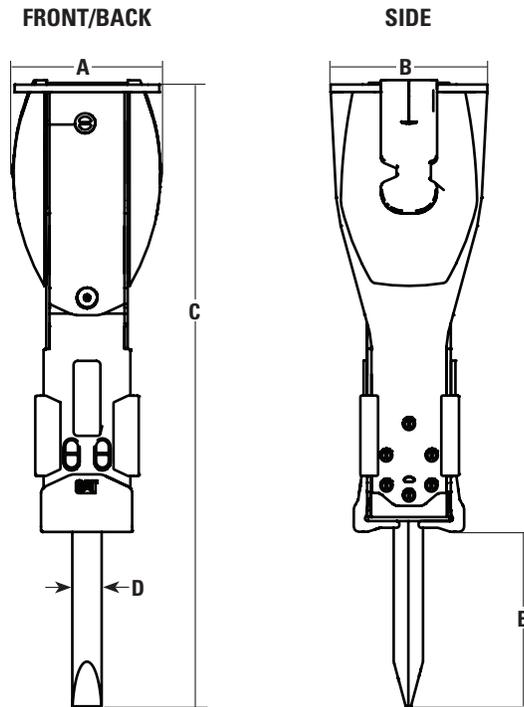
Breaking of slag in casting ladles	C, M	C, M					
Breaking of slag in converter openings	C, M						
Cleaning of castings	C, M	C, M					
Breaking of massive steel slag						C, M	C, M
Breaking of aluminum electrolyze slag	C, M						

6. Other applications

Demolition/Rock breaking under water		C, M					
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Cat Hydraulic Hammers

Dimensions



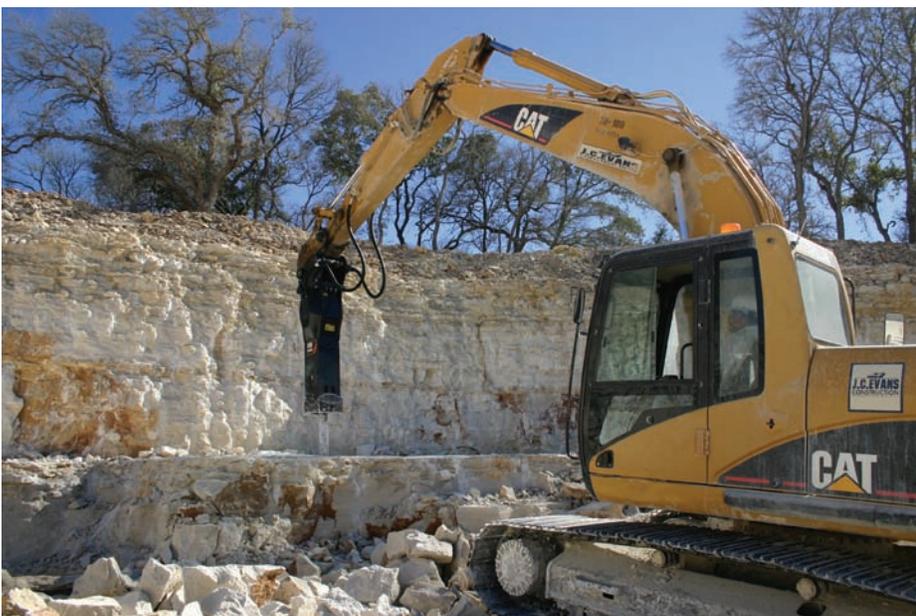
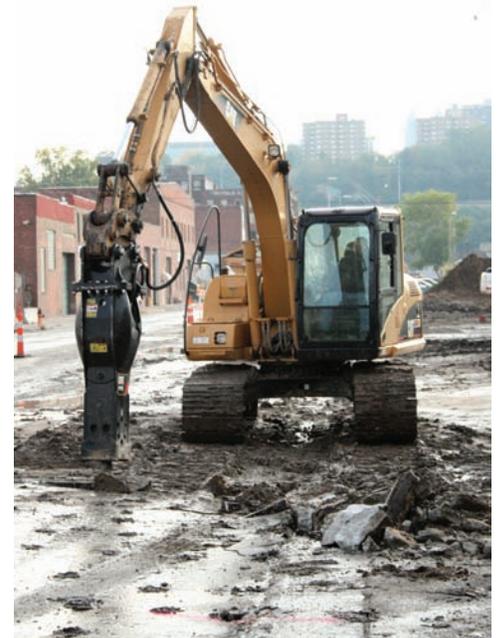
		H110Es	H115Es	H120Es	H130Es	H140Es	H160Es	H180Es
A Length	mm	552	553	594	624	585	730	730
	(in)	(21.73)	(21.73)	(23.39)	(24.57)	(23.0)	(28.7)	(28.7)
B Width	mm	585	586	585	585	670	736	758
	(in)	(23.00)	(23.00)	(23.00)	(23.00)	(26.4)	(29.0)	(29.8)
C Height	mm	1,568	1,683	1,839	1,958	2,167	2,414	2,556
	(in)	(61.73)	(66.24)	(72.41)	(77.07)	(85.31)	(95.04)	(100.63)
D Tool diameter (top)	mm	99.5	109.5	119.5	129.5	139.5	159.5	179.5
	(in)	(3.92)	(4.31)	(4.70)	(5.10)	(5.49)	(6.28)	(7.07)
E Tool working length	mm	496	549	598	647	652	753	760.5
	(in)	(19.53)	(21.61)	(23.54)	(25.47)	(25.66)	(29.65)	(29.94)



Productivity

		H110Es	H115Es	H120Es	H130Es	H140Es	H160Es	H180Es
Non-Reinforced Concrete	m ³	99–214	115–287	153–344	210–375			
	(yd ³)	(130–280)	(150–375)	(200–450)	(275–490)			
Reinforced Concrete	m ³	96–134	107–184	122–229	153–268	191–497	229–650	295–1,301
	(yd ³)	(125–175)	(140–240)	(160–300)	(200–350)	(250–650)	(300–850)	(385–1,705)
Sedimentary Rock	m ³	84–191	126–229	153–260	191–306	229–535	268–688	337–1,345
	(yd ³)	(110–250)	(165–300)	(200–340)	(250–400)	(300–700)	(350–900)	(440–1,760)
Volcanic Rock	m ³	42–99	57–115	84–153	103–210	115–268	153–459	210–757
	(yd ³)	(55–130)	(75–150)	(110–200)	(135–210)	(150–350)	(200–600)	(275–990)

Production rates listed are based on 8-hour shift. The above figures are for general estimation purpose only. Actual working results may vary according to the quality and structure of the material to be broken, required degree of material size reduction, installation, condition of the carrier, conditions at the work site, haulage of the broken material, skills of the operator, etc.



Cat Hydraulic Hammers

More Work Tool Attachments for Excavators

Caterpillar offers a complete range of Work Tool attachments for excavators.



Compactors

Cat Compactors are available in four models (CVP16, CVP40, CVP75 and CVP110) for excavators up to 336 size.



Scrap & Demolition Shears

Scrap & Demolition Shears with 360° rotation are available in six models and can be used on 303.5–390 size excavators.



Multi-Processors

Multi-Processors are available in four models (MP15, MP20, MP30 and MP40) with six different jaw options. They are available for 319–390 size excavators.



Grapples

Grapples are available two different styles and a range of sizes for 307–390 size excavators.



Secondary Pulverizers

Pulverizers are available in three models (P215, P225, P235). They are sized for use on 315–349 excavators.



Rippers

Rippers are available for 330 size excavators and up.



Quick Couplers

Cat Center-Lock Pin Grabber Coupler is available for 311 to 390 size excavators.



CW Coupler is interchangeable with different machine classes.



Buckets

Buckets are available in four standard durabilities, and several specialty styles for 311–390 size excavators.

For more information on the variety of Work Tool attachments available for Excavators contact your local Cat dealer.

Hydraulic Solutions

- Caterpillar provides field-installed hydraulic kits connecting Work Tools attachments to current and non-current excavators.
- Compatibility and performance with the Cat Work Tool attachments and Cat excavator is guaranteed.
- Available for 311–390 excavators.



Scan here to see Cat Hydraulic Hammers in action!

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

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