



5230

Hydraulic Shovel/ Backhoe



Available in Front Shovel and Backhoe configuration, the Caterpillar® 5230 is matched to the Cat® 785B truck, but can also effectively load the 789B and 793C trucks. These matches provide efficient loading and hauling systems for mining.

Operating weights (approximate)

Front Shovel	318 420 kg	702,000 lb
Backhoe (ME)	316 600 kg	697,980 lb

Bucket capacities

Front Shovel	15.5 to 17.0 m ³	20.2 to 22.2 yd ³
Backhoe (ME)	16.0 to 27.5 m ³	21.0 to 36.0 yd ³

Cat 3516 Engine (Gross)	1175 kW	1575 hp
(Flywheel power)	1095 kW	1470 hp

5230 Hydraulic Shovel/Backhoe

Top performance and rugged durability combine to maximize your productivity.

Hydraulics

Powerful Cat hydraulics provide high break-out and crowd forces to maximize bucket loads. The Cat Proportional Priority Pressure Compensating (PPPC) system allows smooth, efficient operation. **pg. 4 - 5**

Power Train

The 5230 is powered by a single Cat 3516 engine with a high displacement and conservative hp ratings for lower maintenance and operating costs. The 789B, 793B Mining Trucks and the 994 Wheel Loader have field proven the 3516 engine design in the most demanding mining applications. **pg. 6**

Structures

Extensive use of castings in high-stress areas and box section design provide a rugged, durable machine. Use of one-piece floating pins in main front structure joints helps reduce wear and increase strength. Thermal stress relief of front structure components eliminates residual stresses. **pg. 7**



Undercarriage

Cat designed, shovel type undercarriage is stable, durable and maintenance free. **pg. 8**

Operator's Station

Roomy, quiet cab has excellent

Vital Information Management System

The latest in total machine monitoring, (VIMS) monitors vital machine functions. It helps reduce downtime by keeping the operator informed of current operating conditions and allowing service personnel access to logged data and machine faults. **pg. 10**

Buckets and Ground Engaging Tools

The 5230's aggressive curved-floor bucket design, efficient linkage geometry and high crowd and breakout forces provide superior bucket fill factors. A wide selection of front shovel buckets, backhoe buckets and ground engaging tools allows precise machine to application match. **pg. 11**

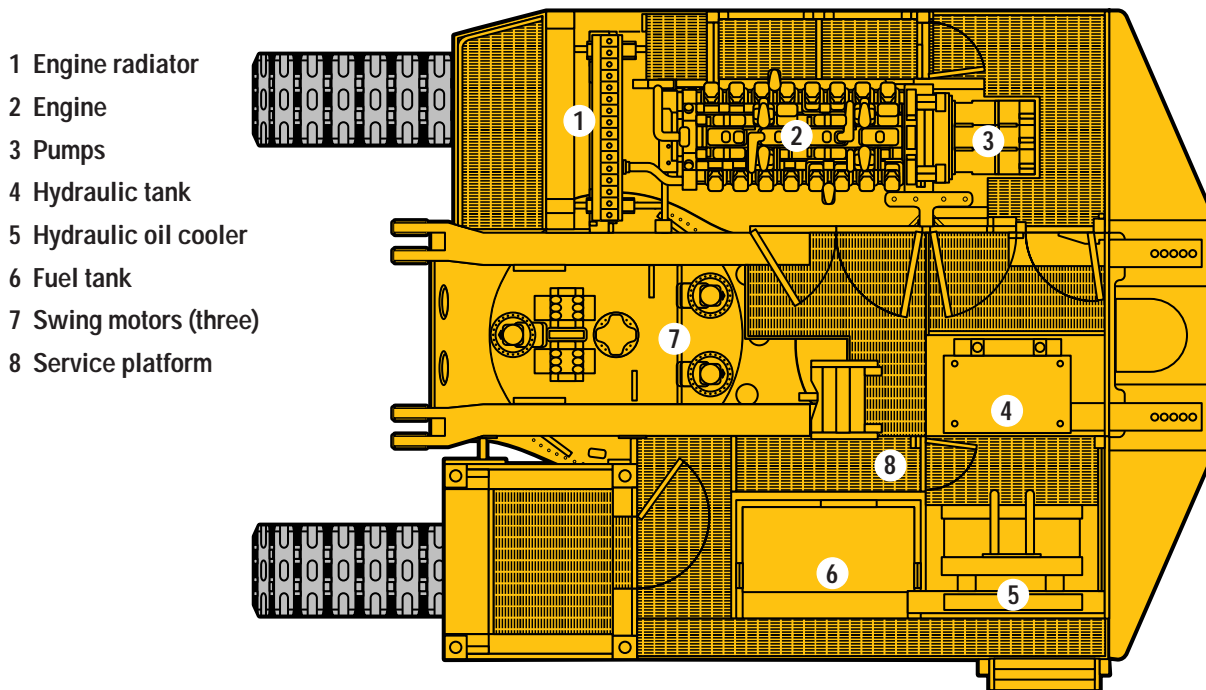
Modular Design

The eleven modules that make up the 5230 are easily shipped and assembled. Components are located with serviceability and maintenance in mind. **pg. 12**



Hydraulics System

Caterpillar hydraulics deliver the power and control needed to keep material moving at high volume.



High breakout and crowd and forces.

The 5230 Front Shovel and Backhoe provide maximum forces at the bucket cutting edge for improved material penetration and bucket fill factors.

- The Front Shovel has a breakout force of 1125 kN (253,000 lbs) and a crowd force of 1250 kN (281,000 lbs).
- The mass excavator arrangements has a breakout force of 873 kN (196,258 lbs) and a crowd force of 874 kN (196,483 lbs).

Six variable-displacement, piston pumps

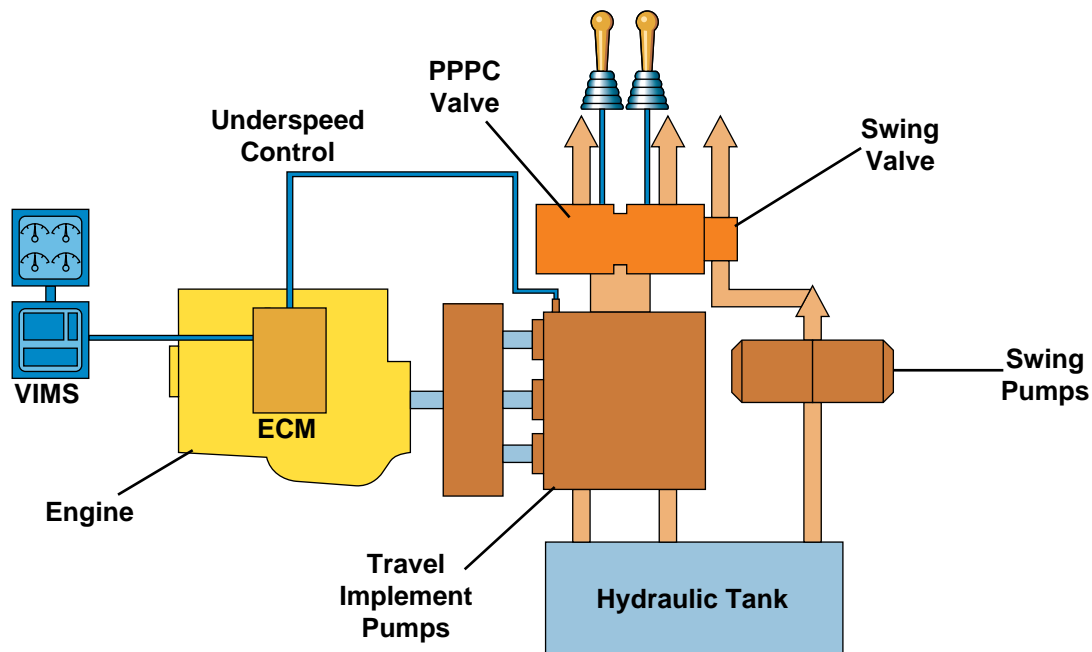
act together to power the front structure and travel systems. The swing function is powered by two dedicated variable-displacement piston pump.

- Main pumps are each rated at a conservative 375 lpm (99 gpm) for optimum service life.
- The swing pumps are each rated at 464 lpm (123 gpm).
- Other, smaller pumps power the cooling fan drives, pump drive cooler, pilot system, and automatic track tensioning system.
- All pumps are serviced through Cat dealers.
- A bulkhead separates the engine and pump compartments.

The modular design of the 5230 provides unique advantages in hydraulic system design and serviceability.

- The longitudinal mounting of the 3516 engine and the low placement of the hydraulic pumps eliminate the need for a pressurized hydraulic tank.
- Walk-around, lighted access to all hydraulic system components allows easy serviceability and quick daily maintenance checks.

Hydraulic system filtration is provided by 200 micron screens in the pump discharge lines and 10 micron filters in the return lines.



Exclusive Caterpillar Proportional Priority Pressure Compensating (PPPC) valves are used in both the front structure and travel systems.

- Valve system only circulates fluid when called for by the operator. There is no unneeded flow. This provides increased fuel efficiency and reduced heat in the hydraulic system.
- Automatic flow proportioning adjusts pump output to the hydraulic circuits based on the flow requirements of the task at hand. When flow is required by more than one function at a time (such as boom up and stick out), the valves determine the flow required for each function and have pumps supply that amount. This feature allows smooth, precise, multi-function operation.

The swing circuit is controlled by an open-center valve to assure quick, full-powered response.

Electronically controlled pumps.

A Caterpillar designed microprocessor regulates hydraulic pump output. When hydraulic demand goes beyond a prescribed threshold, the load sensing control destroys the pumps' speed to prevent excessive engine lugging.

- Eliminates the need to maintain a constant, costly, reserve of engine power to prevent excessive engine lugging.
- Also allows hydraulic pumps to use full engine power for precise implement or function response.
- System integration enhances monitoring and speeds troubleshooting and calibration.

Hydraulic system cooling is provided by two conventional core radiators dedicated to the hydraulic circuit.

- The variable-speed fan is temperature controlled for greater fuel efficiency.
- Extra-large cooling capacity allows operation in ambient temperatures of up to 50°C (122°F).

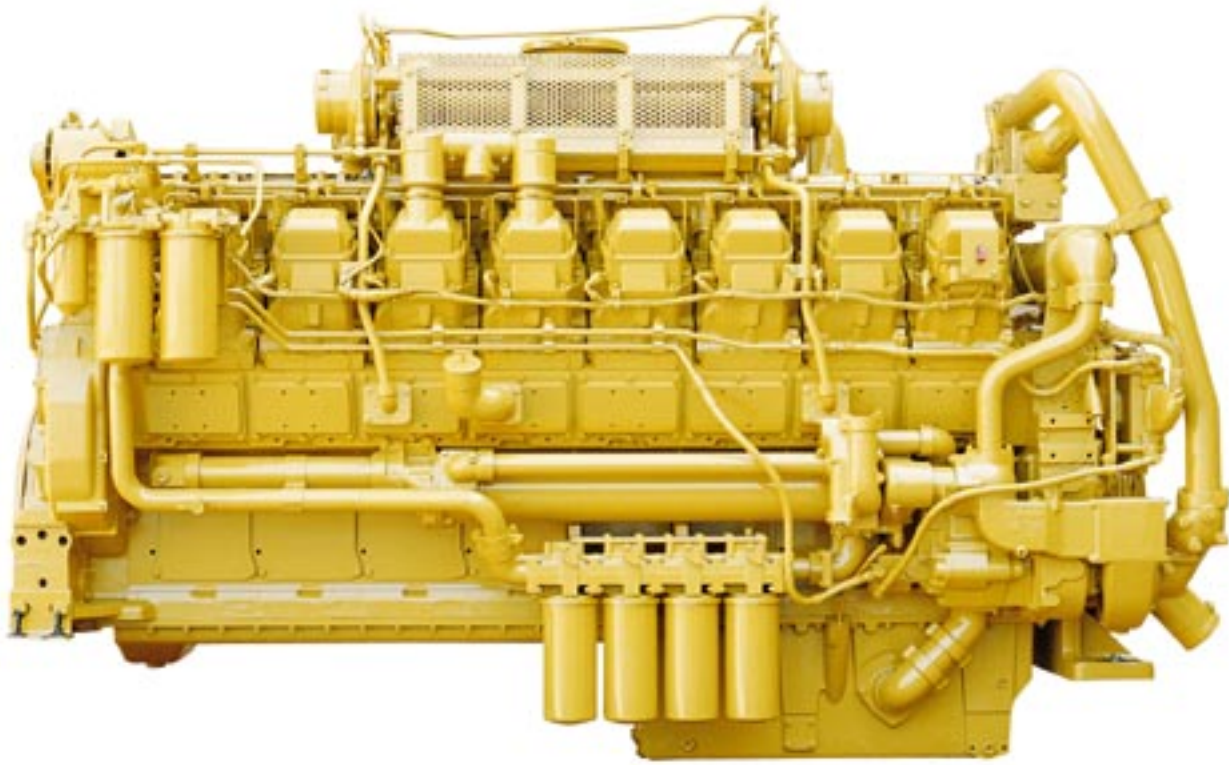
Large-bore cylinders ensure efficient load handling.

Cat's XT hydraulic hose is exceptionally strong and flexible. Reusable couplings prolong hose assembly life.

S•O•S sampling valves are conveniently located on the return rail on the right side of the hydraulic tank.

Cat 3516 Engine

The single engine of the 5230 provides an edge in operating costs and fuel efficiency.



The Caterpillar electronic control system provides superior integration of the engine and other machine systems. All systems are designed specifically for use in mining applications.

The 3516 Electronic Unit Injection (EUI) engine features:

- Excellent reliability with the latest in protection programs.
- Precision fuel injection for reduced smoke.
- Protection during cold weather starts.
- Excellent fuel efficiency.
- Continuous monitoring of critical engine functions.
- Diagnostic data is accessible with a single, electronic service tool.

Automatic Engine Speed Control (AESC) reduces fuel consumption and noise by reducing the engine speed from 1750 to 1350 rpm if the hydraulic controls are not actuated for four seconds.

Engine cooling system reduces fuel consumption using a variable-speed fan. Fan operates at a minimum speed of 400 rpm until increased temperatures actuate a solenoid and valve to increase fan speed as needed.

Cold weather starting can be improved with EUI's cold weather starting mode. This mode retards engine timing until the engine is warmed to the correct temperature.

High displacement, low rpm rating and conservative hp ratings mean longer service hours with less downtime for maintenance and repair.

Two-piece piston design with aluminum skirt and steel crown pivot at the wrist pin provides added flexibility for reduced piston scuffing.

S•O•S sampling valve near the oil filter base speeds sampling.

Structures

The 5230 structural components are the backbone of the machine's durability.



Heavy-duty castings are used extensively in high-stress areas for excellent, long-term structural durability.

Castings are used in:

- Front end of the swing frame (which is a single, massive casting)
- Counterweight mounts
- All boom and stick pin mounts
- Carbody
- Final drive mounts

High digging forces are a result of the efficient front linkage. Rod-ported bucket tilt cylinders eliminate external return lines, improving seal and rod life.

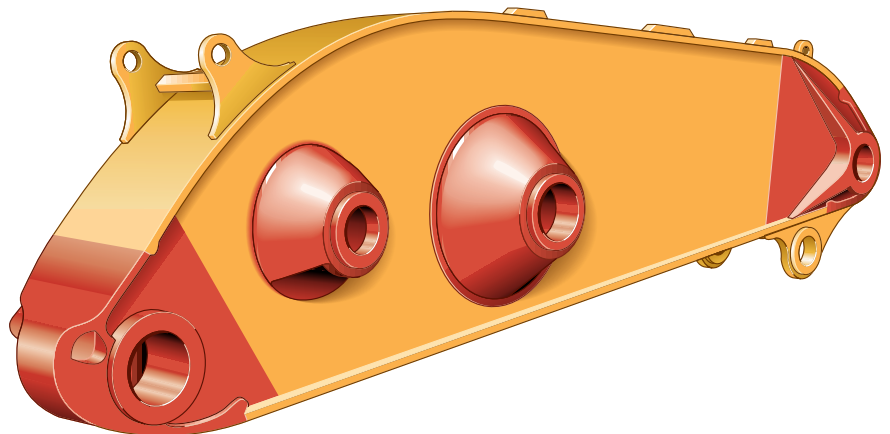
Rugged box section construction is used in key structures to provide unsurpassed strength while eliminating excess weight.

Box section construction is used in:

- Booms
- Sticks
- Carbody
- Roller frame

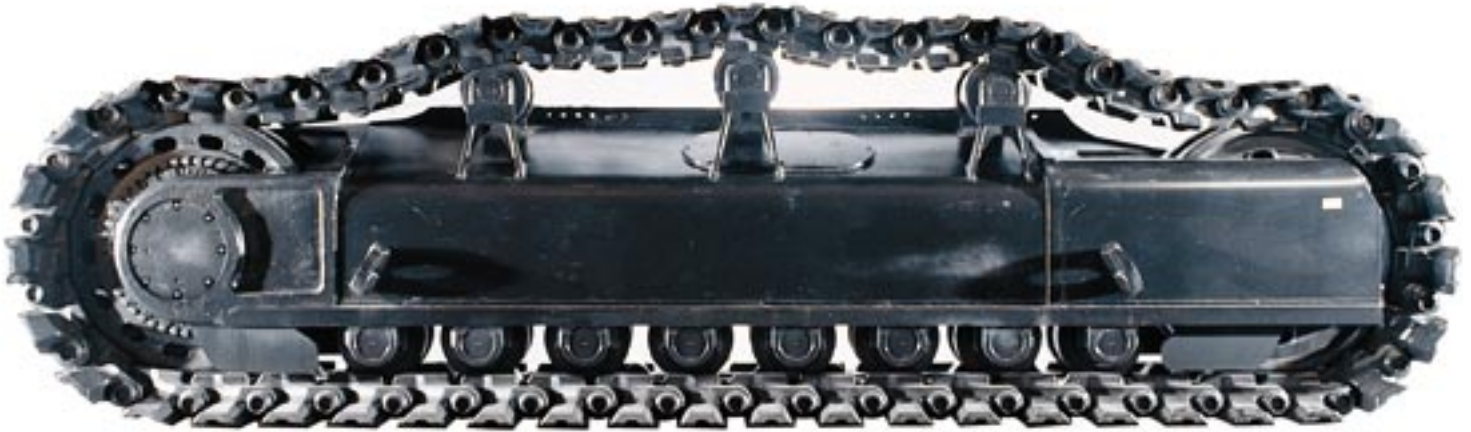
One piece floating pins are used at swing frame to boom, boom to stick and stick to bucket joints for extra strength and life.

Front structure components are thermally stress relieved to reduce residual stresses from the welding process, increasing structure life.



Undercarriage

Durable, maintenance-free undercarriage absorbs stresses and provides excellent stability.



1. The Caterpillar shovel style undercarriage is a no-maintenance system. Free-floating track pins are positively retained and are designed for the life of the shoe.

- Shoe and link, together with the guides are a single piece casting.
- Unique track design allows for a four sided guide system.

Track roller frames hold moving undercarriage components rigidly in place. They also absorb stress loads transmitted from the carbody.

- Castings and high-strength steel fabrication in crucial areas provide superior structural strength.
- Box beam section design includes internal stiffening plates to provide added strength.
- Top plates are inclined to reduce material build-up and packing under carrier rollers.
- Track motors and hydraulic lines are fully guarded.

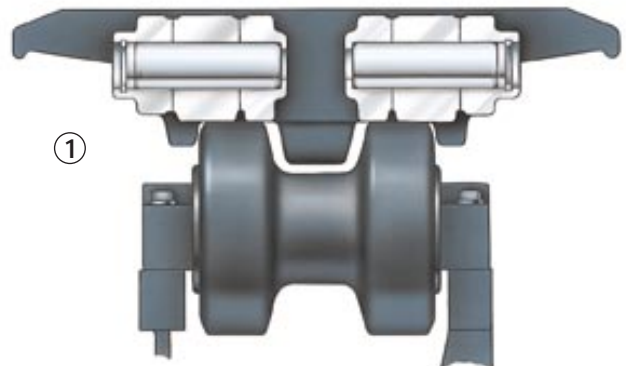
Automatic track tensioning maintains the correct track tension.

- A gear pump supplies pressurized oil to a cylinder, extending a push rod to the idler.
- Check valves hold the pressure in the cylinder and maintain the correct track tension when the engine is not operating.
- For periodic maintenance, there is a manual release located on the track roller frame.
- Shock loads on the cylinders are absorbed by an accumulator.

A wide track gauge offers the stability needed for top production.

Three shoe widths are available to match your application.

- Rock
- General Purpose
- Soft Underfoot



Operator's Station

Designed for comfort and ease of operation.



Spacious operator compartment measures 1790 mm (5'10") wide by 2178 mm (7'2") long by 2236 mm (7'4") high.

- Cab offers ample leg room to the front of the operator's seat.
- Trainee seat with seat belt at the rear of the cab has cooler-size storage under the seat cushion.

Cab and nearby components are isolated to dampen sound and vibration.

- Operator sound levels have been field tested from 72 dB(A) with the air conditioning on, doors closed and the engine idle.
- Hydraulic controls are pilot operated for low lever efforts and excellent control.
- Exceptional all-around visibility provides an unobstructed view of the bucket and loading area.

Air pressurization with positive filtered ventilation keeps the cab environment comfortable and clean.

- Two fresh air filters remove dust and particles before air is routed to the cab.
- Every side window has its own vent.
- The front window has two large-diameter vents to maintain excellent all-around visibility, even in frost conditions.
- Foot level vents and two large-diameter vents in the console are devoted to the operator.

Contour series seat is fully adjustable for shift-long comfort.

- Seat cushions reduce pressure on the lower back and thighs while allowing unrestricted arm and leg movement.
- Short armrests allow freedom of movement with the joystick controls.
- Armrests can also be repositioned independently, fore and aft, according to operator's preference.

Isringhausen seat is available as an option.

- Includes weight-compensated support.
- Also has three-way seat cushion adjustment feature.
- Backrest is adjustable to 28°.

Vital Information Management System (VIMS)

Provides operators, service technicians and managers with crucial operating data.



The VIMS system continuously displays critical machine data. This information can be used to keep the 5230 performing at top production levels.

1. Upper screen display. On its upper screen, the VIMS maintains a constant display of four critical machine functions.

- Engine coolant temperature.
- Hydraulic oil temperature.
- System air pressure.
- Fuel level.

2. Lower screen display. The lower screen displays operator-requested information and also contains the VIMS three-category alert system.

- Display fields include both a numeric reading in English or Metric units (e.g. degrees of temperature) and an electronic gauge which illustrates the functions current position relative to a predetermined limit or setting.

3. VIMS keypad allows the operator to access current machine system information from twenty-by-two VIMS display fields. The keypad is also used by service personnel to access diagnostic information.

The three-category alert system provides advisory information to the operator when conditions in a monitored system exceed a prescribed setting for ordinary operations.

- The **advisory category** activates an alert indicator lamp when a system condition has been identified and appropriate corrective action is recommended.
- In the **operator advised category**, an action lamp flashes in addition to the level one display.
- **Immediate shutdown advised**, the final category, sounds an audio action alert in addition to the level two action. The action lamp and alert remain on until the system reading returns to normal or the machine is shutdown.

The VIMS diagnostics program

allows service personnel to download a complete record of machine data events and system diagnostics to a lap-top computer.

- This information can be used to establish a baseline for machine performance in specific applications or to improve the effectiveness of scheduled maintenance programs.
- VIMS data makes it possible to correct minor problems before they cause extensive damage, which can result in costly down time.

Buckets

Aggressive bucket design and efficient linkage configuration promote high fill factors.



High fill factors for the 5230 Front Shovel and Mass Excavator set this machine apart from the competition. Caterpillar's quality design improves breakout and crowd forces, increasing fill factors.

- **Linkage geometry** optimizes mechanical advantage through the loading cycle.
- **Curved floor bucket design** moves the bucket fulcrum away from the cylinders, increasing breakout force; promotes smooth material flow to the back of the bucket.

Box-section construction is utilized in the dozer portion of front shovel buckets to provide torsional strength when the bucket is closed for digging.

Steel castings are used in high-stress areas such as the dozer hinges, bowl pivots, cylinder mounts, and corner adapters.

Heat-treated steel is used to improve the service life of corner and center adapters, cutting edges and side bars which will be subjected to more abrasive conditions.

Hardened bearings improve the durability of the pivot and cylinder mounts in mass excavator buckets.

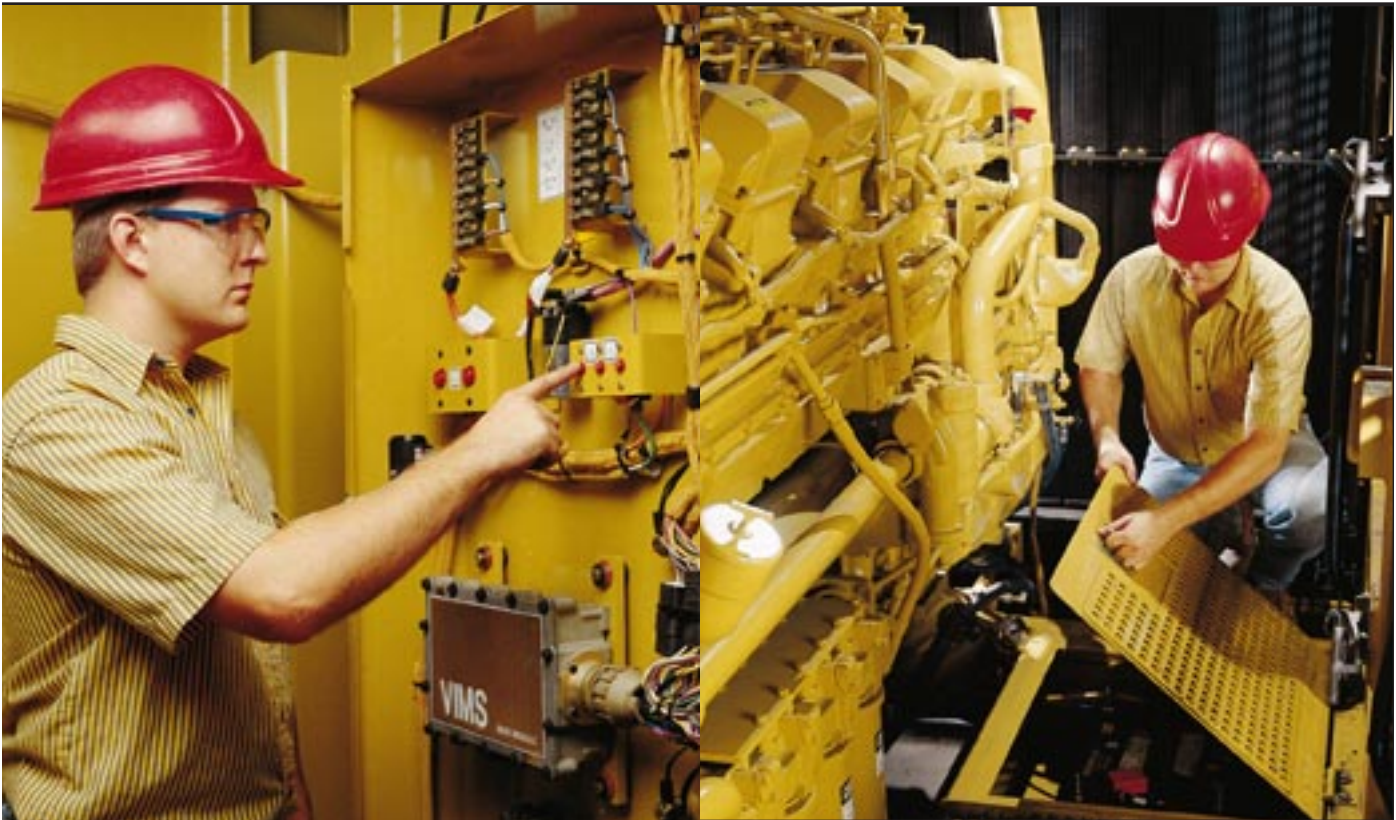
Standard wear plates on the back, sides and bottom reinforce front shovel bucket structures. Wear packages with Abrasion Resistant Material (ARM) are also available for high abrasion applications.

Two piece coupler system for general purpose rock tips utilizes a top-pinned coupler attached to a weld-on adapter nose. Tips are smaller and stay sharper, reducing throw away material. A one piece penetration tip is also available.

Several front shovel and backhoe buckets are available. Buckets range from rock/high density buckets to coal and light material buckets. Contact your dealer for a precise match to your application.

Modular Design

Provides a stable, productive machine that's easy to transport and service.



Maintenance and service access.

The right and left side modules provide excellent service access as well as storage and working space.

Left module:

- Cab riser allows stand-up access to hydraulic pilot lines and to the main junction box for electrical and electronic components.
- Includes a sheltered, lighted service area for the hydraulic tank, filters, hydraulic cooling system and auto-lube reservoir.

Right module includes walk-around, lighted access to:

- engine
- engine cooling system
- batteries
- hydraulic pumps

Shipping and assembly. Machine breaks down into eleven modules for ease of shipping.

- Carbody
- Swing frame
- Track roller (right)
- Track roller (left)
- Boom
- Stick
- Bucket
- Right hand module
- Left hand module
- Counterweight
- Miscellaneous parts

Superior stability is achieved by creating a lower center of gravity and is a result of the modular design.

- The left and right side modules are positioned low in relation to the swing frame module.
- The longitudinal mounting of the engine in the right side module makes this stable, low positioning possible.

Engine

Caterpillar four-cycle 3516 quad turbo-charged and aftercooled, diesel engine with electronic unit injection.

Ratings at 1750 rpm*	kW	hp
Gross power	1175	1575
Net power	1095	1470

The following ratings apply at 1750 rpm when tested under the specified standard conditions for the specified standard:

Net power	kW	hp	PS
Caterpillar	1095	1470	—
ISO 9249	1095	1470	—
SAE J1349	1084	1455	—
EEC 80/1269	1095	1470	—
DIN 70020	—	—	1134

*Power rating conditions

- based on standard air conditions of 25°C (77°F) and 99 kPa (29.32 in Hg) dry barometer
- used 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/ U.S. gal)]
- net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator
- no derating required up to 2300 m (7500 ft)

Features

- Cat electronic control system monitors operator and sensor inputs to precisely optimize engine performance, at that altitude, with electronic unit injectors
- two hard-faced inlet and exhaust valves per cylinder, valve rotators and hard alloy-steel seats
- self-aligning roller followers on camshaft
- two-piece pistons with steel crown (three rings) and thermally isolated aluminum skirt
- 24-volt electric system with 105-amp alternator 2x190 amp/hr. batteries
- air start arrangement with quick connect supplemental air supply is standard

Dimensions

Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69.0 liters	4210 cu in

Hydraulic System

The hydraulic system for front structure and travel functions are supplied by six variable displacement pumps. Two tandem variable displacement pump provides for swing and bottom dump bucket functions.

Main system, piston-type pumps, closed center

Output at 1915 rpm	375 liters/min (x 6)	99 gpm (x 6)
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Relief valve setting

Travel	35,000 kPa	5000 psi
Front structure	31,000 kPa	4500 psi

Swing system, piston-type pump, open center

Output at 1915 rpm	464 liters/min (x 2)	123 gpm (x 2)
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Relief valve setting

Accelerating	35,000 kPa	5080 psi
Decelerating	25,000 kPa	3620 psi

Pilot system, gear-type pump, open center

Output at 1900 rpm	59 liters/min	15.6 gpm
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Relief valve setting

Controls	4000 kPa	580 psi
Track Tension	7000 kPa	1000 psi

Features

- main hydraulic pumps are electronically controlled and dependent on engine speed
- engine automatically idles down with inactive controls and resets to original speed upon control engagement
- work cycle performance is optimized during single-function, high front structure speed requirements by combining pump flows
- all valves are pilot operated for ease of operation and excellent control
- all lines include primary and secondary relief valves as well as anti-cavitation valves

Swing Mechanism

Hydrostatic with independent planetary reduction.

Ratings

Swing Torque	1151 kN·m (849,650 lb·ft)
Time for 90° lift and swing (loaded bucket)	8.3 sec

Features

- power for the swing mechanism originates with three hydrostatic motors with independent planetary reduction and integral multiple disc brakes
- internal gearing is totally enclosed, and is continuously lubricated together with the pinion

Drive

Drive system is fully hydrostatic.

Ratings

Maximum		
Drawbar Pull	1545 kN	(340,875 lbs)
Maximum		
Travel Speed	2.5 kph	(1.6 mph)

Features

- each track is driven by two independent, bent-axis piston motor via integral planetary final drives
- multiple disc brakes are spring engaged, pressure released; each drive module is well integrated into the roller frame for total protection

Brakes

Service brake features

- two wet, multiple-disc brakes are used on the final drive input shafts
- spring-applied, hydraulically released
- actuating a travel control simultaneously releases the brakes
- when the controls are released, the brakes automatically apply

Parking brake features

- wet, multiple disc brakes
- spring applied, hydraulically released

Track

Purpose built shovel undercarriage with cast, extreme service shoes.

Choice of

- 1100 mm (43") Rock
- 1300 mm (51") General Purpose
- 1500 mm (59") Soft Underfoot

Ground Pressures

Front Shovel

with 1100 mm (43") shoes	202 kPa	29.3 lb/in ²
with 1300 mm (52") shoes	172 kPa	25.0 lb/in ²
with 1500 mm (60") shoes	149 kPa	21.6 lb/in ²

Mass Excavator

with 1100 mm (43") shoes	199 kPa	28.9 lb/in ²
with 1300 mm (52") shoes	170 kPa	24.7 lb/in ²
with 1500 mm (60") shoes	149 kPa	21.6 lb/in ²

Features (per side)

- 47 track shoes
- 8 track rollers
- 3 carrier rollers
- 2 track guiding guards

Steering

Two rocker pedals with detachable hand levers control steering and travel functions.

Controls

- controls are pilot-operated for reduced efforts
- left pedal and lever control left track; right pedal and lever control right track
- when idlers are in front, pushing both pedals or levers forward moves the excavator straight ahead
- rocking both pedals or pulling both levers backward moves the excavator straight back
- moving one pedal or lever more than the other, either forward or backward, results in a gradual turn
- moving one pedal or lever forward and the other pedal or lever backward counter-rotates the tracks for spot turns

Front Structure Controls

Two joystick hand levers actuate boom, stick, bucket and swing (SAE pattern).

Boom/Bucket Controls (Right Joystick)

- move forward and backward to lower and raise boom
- move left and right to control bucket curl and dump
- button on top is boom float control

Stick/Swing Controls (Left Joystick)

- move forward and backward to move stick out and in
- move left and right to control direction of swing
- button on top controls horn

Other Features

- oblique movement of either lever operates two functions simultaneously
- manually applied lever on left console cuts off pilot pressure for joysticks and travel controls and electrical power for engine starting circuit
- armrests contain switches for dead engine boom lower

Service Refill Capacities

	L	Gallons
Fuel Tank	5330	1386
Cooling System	455	120
Engine Oil	216	57
Pump Drive	90	23
Swing Drive (each)	14	3.7
Final Drive (each)	94	24
Hydraulic System (including tank)	2200	581
Hydraulic Tank	1574	416

Cab

Caterpillar cab with integral Falling Object Guard is standard in North America, Europe and Japan.

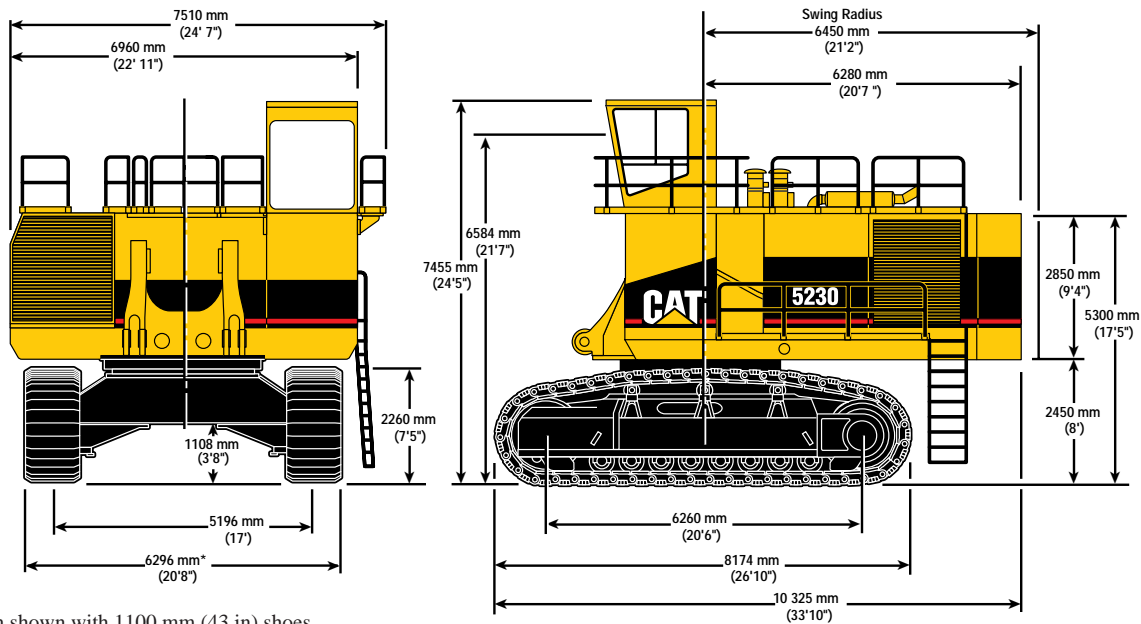
Cab Certifications

- The cab structure is designed to protect the operator from falling objects, and is certified under SAE J1356 FEB88 and ISO 3449-1984 specifications. A guard is available for the front windshield and is also certified under SAE J1356 FEB88. Currently there is no ISO specification for front guard structures.

Note

When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 MAY90, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture. The operator sound pressure level is from 72 dB(A) when measured per ISO 6394 or 86/662/EEC.

Dimensions All dimensions are approximate.



* Dimension shown with 1100 mm (43 in) shoes

Supplemental Specifications Shipping Dimensions*

Truck	Module		Weight		Length		Width		Height	
			kg	lb	mm	in.	mm	in.	mm	in.
1	Carbody		24 770	54,610	4470	176	4064	160	1981	78
2	Swing Frame		40 591	89,490	8890	350	3327	131	3480	137
3/4	Track Roller (each)									
	1100 mm/43 in.		45 396	100,080	8026	316	1829	72	2362	93
	1300 mm/51 in.		46 557	102,640	8026	316	1829	72	2362	93
	1500 mm/59 in.		48 082	106,000	8026	316	1829	72	2362	93
5	Boom	FS	22 013	48,530	7620	300	2210	87	2515	99
		ME	27 588	60,820	10 033	395	3962	156	2489	98
6	Stick	FS	11 571	25,510	5258	207	1880	74	2210	87
	Parts Box	FS	2830	6240	2235	88	1092	43	1194	47
	Parts Box	FS	2500	5520	2235	88	1092	43	991	39
	Pin Box	FS	850	1880	2311	91	432	17	508	20
	Stick	ME	11 032	24,320	6248	246	1346	53	2565	101
	Handrail Skid	ME	1350	2980	3988	157	2286	90	1118	44
	Guard Skid	ME	940	2080	2083	82	1702	67	838	33
	Bracket Skid	ME	2590	5720	1778	70	1676	66	889	35
7	Bucket	FS	29 820	65,740	4521	178	3454	136	3785	149
	Bucket	ME	16 379	36,110	4013	158	3251	128	3099	122
8	Right Hand Module		21 156	46,640	7772	306	2489	98	3581	141
9	Left Hand Module		12 580	27,740	7239	285	2489	98	3226	127
	Cab		2380	5240	2337	92	2007	79	2997	118
	Guard Box	FS	970	2140	2083	82	1702	67	838	33
	Parts Box	ME	2380	5250	2235	88	1092	43	991	39
10	Counterweight		41 386	91,240	7315	288	1219	48	3048	120
11	Misc. Parts	FS								
	Handrail Skid	FS	1350	2980	3988	157	2286	90	1118	44
	Cyl. Skid (2)	FS	2540	5610	4166	164	914	36	686	27
	Cyl. Skid (2)	FS	2540	5610	4166	164	914	36	686	27
	Cylinder Skid (2)	FS	3430	7560	4166	164	610	24	762	30
	Misc. Parts	ME								
	Cyl. Skid (Boom) (2)	ME	3290	7260	4166	164	914	36	737	29
	Cyl. Skid (Stick) (2)	ME	4350	9580	4166	164	914	36	737	29
	Cylinder Skid (2)	ME	3130	6900	4877	192	610	24	813	32
	Parts Box	ME	2170	4780	2235	88	1092	43	991	39
	Parts Box	ME	2220	4900	2235	88	1092	43	991	39

* Items that are not marked with an FS or an ME apply to both machines.

Standard Equipment

Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

Action Alarm	Engine, Cat 3516 Diesel
Air conditioner/heater/defroster system	Engine oil quick change system
Air cleaner, dry type, with precleaner	Lights, Halogen, working
Alarm, travel	Fuel tank — fast refill system
Alternator, 105 amp	Locks, door and cap — one key system
Automatic engine speed control	Manual lube reel (ME only)
Automatic lubrication system	Mirrors, rearview, left on cab
Air powered Lincoln 55 gallon capacity	Refillable lube barrel
Cab, resiliently mounted, sound suppressed and pressurized (see operators station for features)	Seat belt, retractable
Cat Underspeed	Starting, Ingersoll air
	Vital Information Management System (VIMS)
	Window screens, front, rear, and side

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics.

Backhoe Arrangement
Buckets (see below)
Central service center, Wiggins
Cold weather starting options
Engine Prelube
Front Shovel Arrangement
Generator, hydraulically driven 12.5 kVA (240V)
Ground Engaging Tools
General purpose rock tips with coupler
Short rock tips with coupler
One piece penetration tips
Edge protectors
Side bar protectors
Seat, Isringhausen, operator
TDI Airstart Turbine
Track shoes:
1100 mm/(43") rock shoes
1300 mm/(52") general purpose shoes
1500 mm/(60") soft underfoot
Windshield guard, front

Buckets

5230 Front Shovel — Bucket Specifications

	Capacity		Weight		Width		Teeth	Mat'l Weight	
	m ³	yd ³	kg	lb	mm	in.		t/m ³	lb/yd ³
Rock	17.0	22.2	29 820	65,740	4360	173	6	1.7	2,900
Rock with ARM Wear Protection	17.0	22.2	39 995	68,330	4360	173	6	1.7	2,900
High Density with ARM Wear Protection	15.5	20.2	26,960	59,440	3670	146	5	1.8	3,100

5230 Mass Excavator Buckets — Bucket Specifications

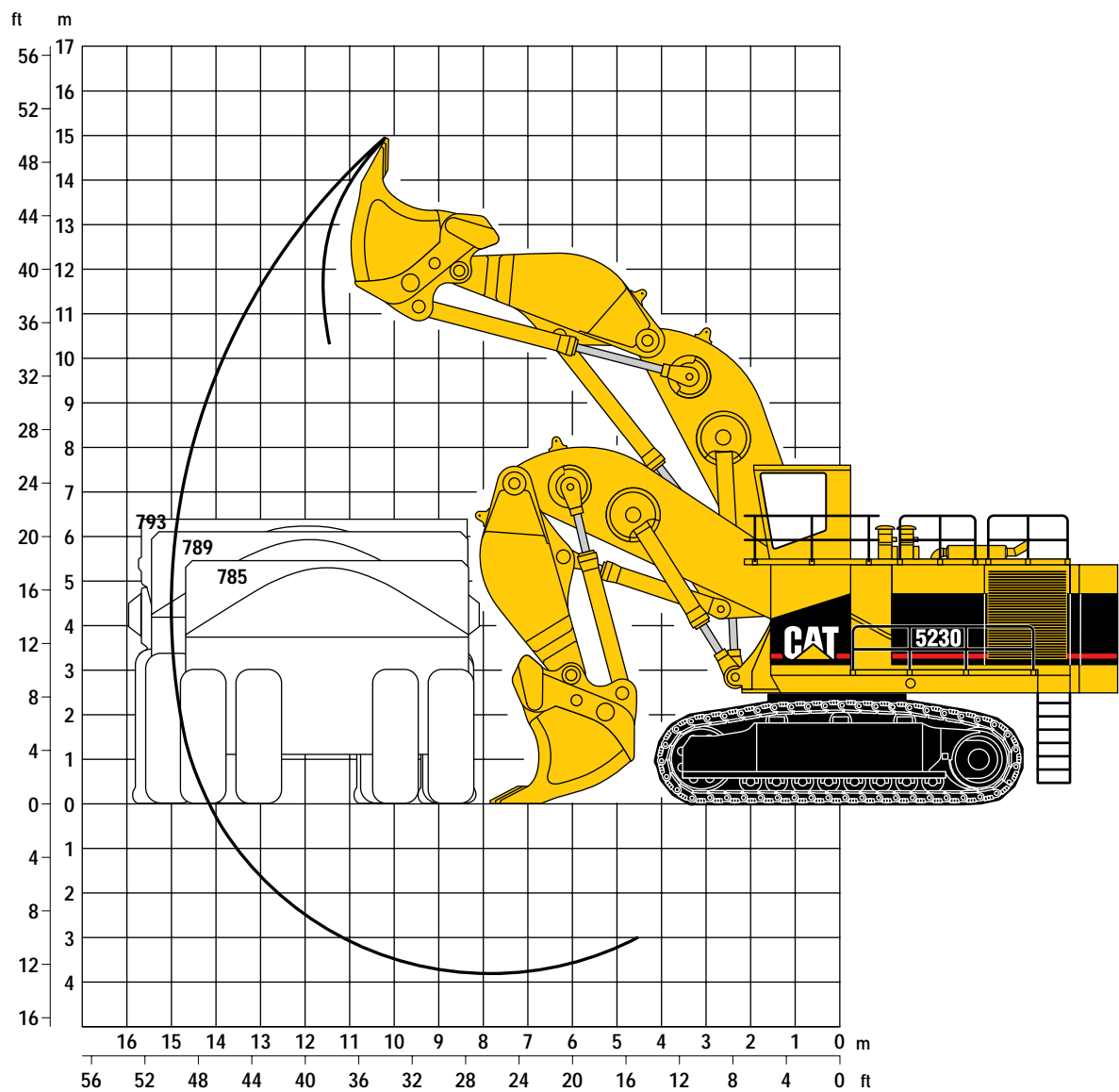
	Capacity		Weight		Width		Teeth	Mat'l Weight	
	m ³	yd ³	kg	lb	mm	in.		t/m ³	lb/yd ³
Rock	16.0	21.0	16 380	36,110	3940	156	5	1.7	2900
Light Material	18.0	23.5	16 785	37,000	3940	156	5	1.4	2400
Coal	27.5	36.0	14 960	32,975	4350	173	9	0.9	1600

Note

Other bucket options are available. Contact your dealer for additional bucket specifications.

Front Shovel Working Ranges

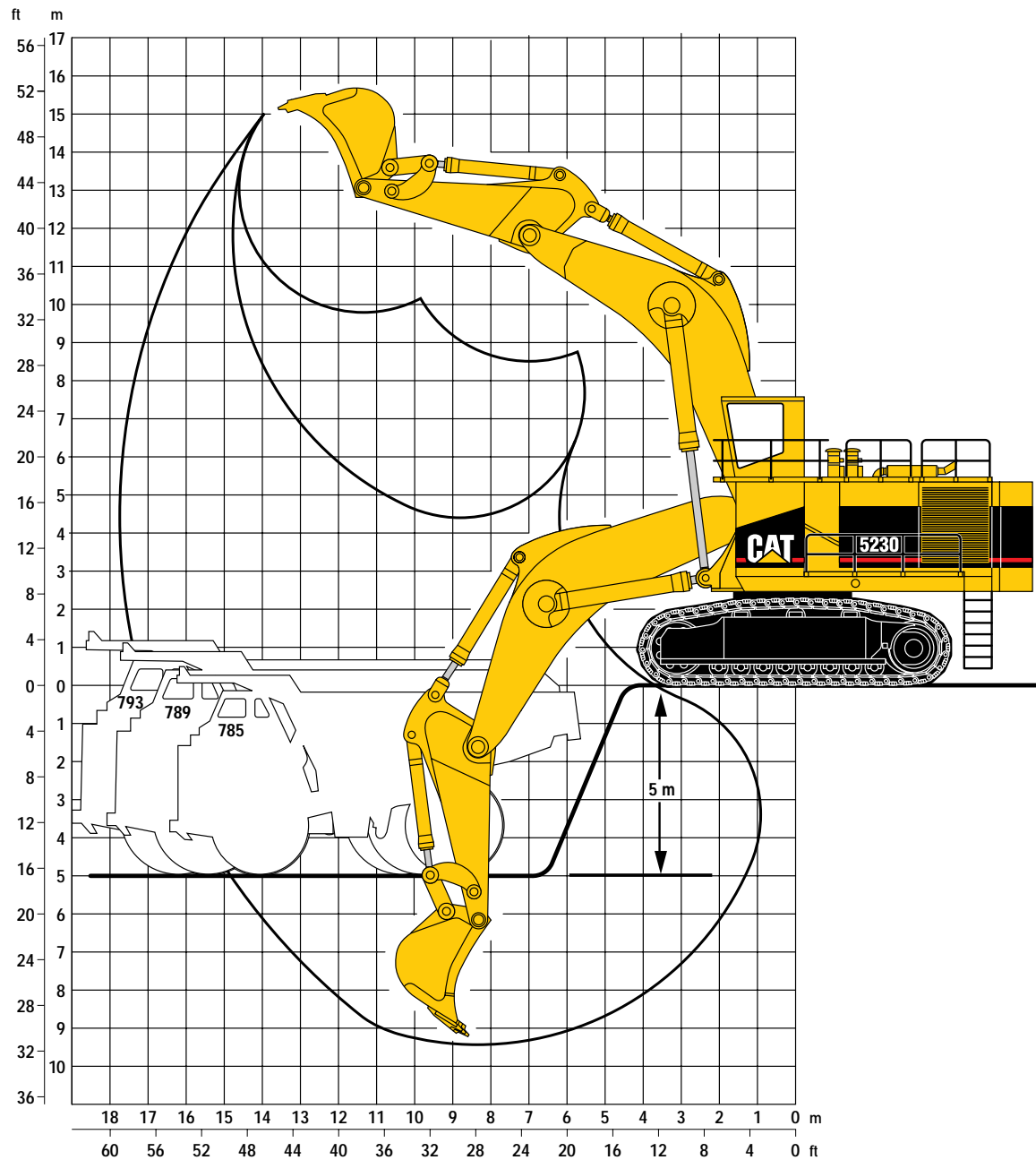
Front Shovel (F.S.) configuration



Max. Reach.....	14.8 m (48.5')
Max. Level Crowd Distance	5.5 m (18.0')
Max. Reach at Ground Level	14.1 m (46.2')
Max. Loading Height	10.3 m (33.8')
Breakout: Force	1125 kN (253,000 lb)
Crowd: Force	1250 kN (281,000 lb)

Backhoe Working Ranges

Mass Excavation (M.E.) configuration



Max. Reach.....	17.7 m (58')
Max. Digging Depth	9.4 m (30.9')
Max. Loading Height	9.8 m (32.2')
Breakout: Force	873 kN (196,258 lbs)
Crowd: Force	874 kN (196,483 lbs)

5230 Hydraulic Shovel/Backhoe

AEHQ5044-02 (4-97)
(Replaces AEHQ5044-01)

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Materials and specifications are subject to change without notice.

