



# 330B MH

## Material Handler



The Cat® 330B Material Handler is specifically designed for the scrap and material handling customer. This machine uses the most sophisticated manufacturing technology to ensure the highest level of manufacturing quality. This quality, with high Cat design standards, means that the 330B Material Handler will deliver the reliability and productivity you demand from Caterpillar.

<b>Cat Turbocharged 3306TA</b>		
<b>Diesel Engine</b>	165 kW	222 hp
<b>Operating Weight</b>	41 430 kg	91,350 lb
<b>Drawbar Pull</b>	268 kN	60,250 lb
<b>Maximum Travel Speed</b>	4.6 km/h	2.9 mph
<b>Cat Two-Piece Material Handling</b>		
<b>Linkage Arrangement</b>	14.4 m	47'3"
<b>Cat Cab Riser</b>	1.9 m	6'5"

# The Caterpillar® 330B Material Handler

*Tough, dependable, and loaded with performance-improving features.*



The 330B MH arrangement is available with the following features:

**Cat designed and built, 1.9 m (6'5") cab riser** gets your operator to an operating height with excellent visibility for loading or unloading your processing equipment, trucks and rail cars. Access to the cab is provided by a platform which extends around the riser to allow windshield cleaning. The cab riser can also be manually tilted forward 90° for shipping.



**20 kW hydraulically driven generator set** can power magnets up to 1702 mm (67") in diameter. A Baldor generator and a state-of-the-art electronic magnet controller, manufactured for Cat by Crane Systems Inc., are linked to provide trouble free service. This new controller completely eliminates traditional contactor maintenance and it is supported and warranted through your Cat dealer.

**Cat Material Handler hydraulic systems** are specifically designed to meet your hydraulic attachment requirements. The grapple open/close circuit works with the other implement circuits to deliver smooth, simultaneous, multi-function control. The rotate circuit provides a separate 40 L/min (10.6 gpm) gear pump and fully adjustable control valve, which allows this configuration to meet various grapple manufacturer's flow requirements. A separate fixed displacement gear pump is used to provide the hydraulic power to run a 20 kW generator system.



**Easy clean-out engine and hydraulic cooling cores** are mounted side-by-side for easy clean-out when operating in debris-laden environments.

**Special counterweight.** The 330B MH is equipped with a counterweight which is 40 percent heavier than the standard counterweight.

**Wide 2920 mm (9' 7") track gauge** provides the over-the-side stability required to handle heavy loads and improve productivity. Thicker carbody plates, 20 mm (0.8 in) longer higher strength swing bearing bolts (bolt grade increased from 10.9 to 11.9) plus larger box-section height team up to provide superior joint retention and durability in material handling applications.



**330B MH two-piece fronts by Caterpillar** meet your material handling needs with excellent reach, flexibility and lift performance.

**The Cat two-piece front** offers a maximum horizontal reach of 14.4 m (47' 3") from swing center and a maximum vertical pin height of 15.8 m (51' 9") at 3.9 m (12' 11") from the swing center. The two-piece fronts are an excellent match for a 0.95 m<sup>3</sup> (1.25 yd<sup>3</sup>) scrap grapple.

**Booms and sticks** are built for performance and long service life.

- **Efficient design of welded box-section structures** with thick, multi-plate fabrications in high stress areas allows structures to flex, dissipating stresses and maximizing strength.
- **Stress relieving booms and sticks** maximizes strength and minimizes structure weight.



## Cat 3306TA Engine

*With over twenty years of use in Caterpillar machines, the 3306 has proven to be one of the most durable and reliable diesel engines Caterpillar has ever produced.*

**Cat 3306TA engine** continues its tradition of powerful, efficient performance and unmatched reliability and durability.

- Cylinder liners are cast-iron alloy, induction hardened and precision honed for long life and maximum oil control.
- Direct injection fuel system is maintenance free; no periodic adjustments needed.
- Crankshaft and camshaft both made from forged steel for maximum resistance to wear.
- Low mounted oil pump for quick pressure build up at start-up to lubricate critical components and extend engine life.

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

**Turbo-charged and aftercooled** to increase engine power by burning fuel with greater efficiency and requires no derating below 2250 m (7500 ft).

**One-piece piston design** simplifies assembly and service. Pistons are coated with graphite to reduce liner wear. They are elliptically ground and tapered for a perfect fit when they expand at operating temperatures.

**S•O•S quick sampling valve** speeds oil sampling for easier service.



### **Automatic Engine Control with convenient one-touch command.**

Three-stage control maximizes fuel efficiency and reduces sound levels.

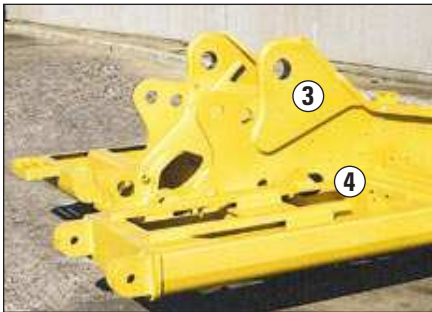
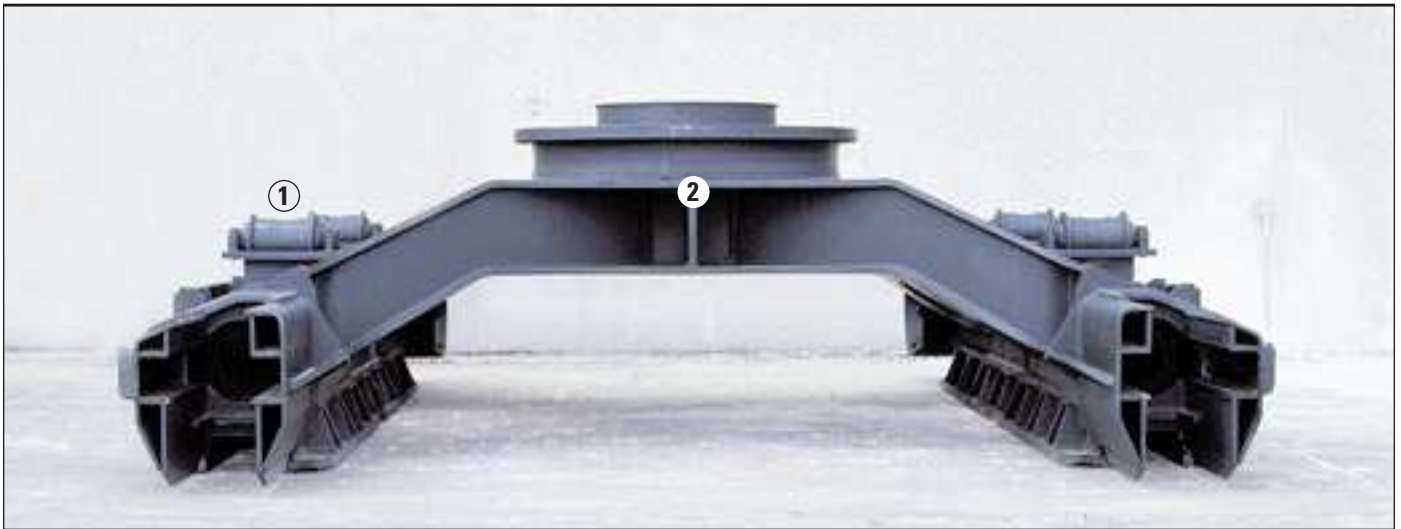
- When placed in the “OFF” mode, if a no-load condition or light-load condition continues more than three seconds, the automatic engine control reduces engine speed by a maximum of 100 rpm.
- When placed in the “ON” mode, if a no-load condition or light-load condition continues more than three seconds, the automatic engine control reduces engine speed from high idle to 1300 rpm. (This feature is deactivated when the genset is running.)
- At any time the generator is not running, the operator can activate a switch on the top of the right control lever to reduce the engine speed to 1000 rpm. This feature, referred to as one-touch idle, can be used both to conserve fuel and to reduce engine sound levels. Activate switch again to return to previous level.

### **Meets all current and proposed worldwide emission standards**

up to the year 2001. High fuel injection pressures ensure proper mixing of fuel and air. This high injection pressure, coupled with the precise metering and timing of the fuel injection, results in superior fuel efficiency and reduced emissions.

## Structures

The 330B MH structural components are the backbone of the machine's durability.



**Advanced carbody design (1)** stands up in the toughest applications.

- Modified X-shaped, box-section carbody provides excellent resistance to torsional bending.
- Upper structure weight and stresses are distributed evenly across the full length of the track roller frame.
- Smooth transitions and long welds reduce stresses at the carbody-to-roller frame junctions for excellent durability.
- Robotic welding helps ensure consistent, high-quality welds throughout the manufacturing process.

**Thicker carbody plates (2)** and increased box-section height for increased weight and load capacities.

**Robot-welded track roller frames** are press-formed, pentagonal units to deliver exceptional strength and service life.

**The upper frame** is specifically designed for the scrap and material handling market. It is built of higher strength material and thicker steel sections to handle the increased swing loads developed with the longer fronts and heavier counterweights used in material handling.

- Boom tower doubler plates (3) add reinforcement for increased side loads and payloads.
- Box-section reinforcement of the cab outrigger frames (4) support cab risers.

- Box-section cross member (5) and box-section cylinder mounts (6) help handle increased torsional loads and payloads.
- Horizontal mounting plate (7) provides more surface area for swing drive and swing bearing mounting bolts to handle increased loads and movement.
- Outer frame utilizes curved side rails, which are die-formed, for excellent uniformity and strength throughout the length.
- Inverted U-channels span the width of the main frame and are formed, rather than fabricated, for superior strength and reduced weight.
- Boom foot and engine mount areas are reinforced for additional strength.
- Sheet metal supporting structure is improved by integrating the mounting into upper frame structure.

---

## Serviceability

*Simplified service and maintenance features save you time and money.*

---

**Faster, easier maintenance** means improved uptime and a better value.

**More ground level service points** for fuel-water separator, engine oil filter, battery, radiator fluid level, window washer fluid level and pilot system filter.

**Improved filters and filter locations** makes maintenance easier.

- Hydraulic capsule filter moved to outside hydraulic tank. New design avoids spills and contamination during replacement. Indicator in cab signals when the filter needs to be replaced, extending filter service life.
- Radial seal air cleaner has double layered filter core for better filtration. No tools required to change. Operator is alerted to clogs.

- Engine oil filter moved to pump compartment. Filter opening faces up to avoid spills during changes.
- Pilot hydraulic system filter keeps contaminants away from the pilot system. This system includes a Scheduled Oil Sampling port to simplify sampling.
- Swing and travel motor filter removes contaminants, keeping them from returning to the tank.

**Water separator removes water from fuel** even when under pressure and is located in the radiator compartment.

**Remote greasing block** on the boom and stick and two grease points for the swing bearing deliver grease to hard to reach locations.

**Electronic Power Unit Control** has diagnostic capabilities for Cat Dealer's use.

- Dealer service technicians can quickly and easily diagnose and adjust machine components, maximizing uptime.

---

## Complete Customer Support

*Cat Dealer services help you operate longer with lower costs.*

---

Cat Dealers offer a wide range of services under a customer support agreement when equipment is purchased. The dealer will help choose a plan that can cover everything from machine and attachment selection to replacement for the best return on your investment.

**Selection.** Make detailed comparisons of the machine being considered before a purchase. How long do components last? What is the cost of preventative maintenance? What is the true cost of lost production? Your Cat Dealer can give precise answers to these questions.

**Purchase.** Look past initial price. Consider the financing options available as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

**Maintenance.** Choose from a wide range of maintenance services at the time you purchase a machine. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as Scheduled Oil Sampling and Technical Analysis help you avoid unscheduled repairs.

**Replacement.** Repair, rebuild or replace? Your Cat Dealer can help you evaluate the cost involved so you can make the right choice.

**Product support.** Cat Dealers utilize a world-wide computer network to find in-stock parts to minimize machine down time. Save money with remanufactured parts. Receive the same warranty and reliability as new products at cost savings of 40 to 70 percent.

## Engine

Caterpillar four-cycle quad, turbocharged and aftercooled 3306TA diesel engine.

Ratings at 1800 rpm	kW	hp
Gross power	176	236
Net power	165	222

The following ratings apply at 1800 rpm when tested under the specified standard conditions for the specified standard:

Net Power	kW	hp
Caterpillar	165	222
ISO 9249	165	222
EEC 80/1269	165	222
SAE J1349	165	222

### Dimensions

Bore	121 mm	4.75 in
Stroke	152 mm	6.0 in
Displacement	10.5 liters	640 in <sup>3</sup>

### Power rating conditions

- based on standard 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 (7550 ft) altitude

## Drive

Drive system is fully hydrostatic.

### Ratings

Maximum drawbar pull	268 kN	(60,250 lb)
Maximum travel speed	4.6 kph	(2.9 mph)
Maximum gradeability (based on engine performance)	70%	

### Features

- each track is driven by one independent, automatic shifting, two-speed axial-piston hydraulic motor via integral planetary final drives
- multiple disc brakes have increased braking capacity, are spring-engaged and pressure released
- each drive module is well integrated into the roller frame for total protection.

## Hydraulic System

The 330B hydraulic system provides efficient, dependable power when and where it's needed.

### Main Implement System

Maximum flow	2 x 240 L/min	2 x 63.4 gpm
Maximum pressure:		
Swing	29 400 kPa	4330 psi
Implements	34 300 kPa	4980 psi
Travel	34 300 kPa	4980 psi
Pilot system:		
Maximum flow	37 L/min	9.8 gpm
Maximum pressure	4100 kPa	595 psi
Rotate Circuit for Grapple:		
Maximum flow	40 L/min	10.6 gpm
Maximum pressure	20 000 kPa	2500 psi
Generator Aux. Pump:		
Maximum flow	178 L/min	47 gpm
Maximum pressure	17 200 kPa	2500 psi

### Features

- two, variable-displacement, axial-piston pumps power the boom, sticks, grapple swing and travel circuits
- one, single-section, gear pump powers the generator circuit
- one, single-section, gear-type pump powers the pilot circuit
- one, single-section, gear-type pump powers the rotate circuit
- snubbers are used at the rod ends of the boom cylinders and at both ends of the stick cylinders

## Weights\*

	kg	lb
Operating weight	41 430	91,350
Upper	10 702	23,598
Counterweight	8333	18,375
Undercarriage (includes carbody)	16 425	36,217
Two-Piece Front (with cylinders)	5970	13,164

\* All weights shown are for machines equipped with 850 mm (33.5") track and 20 kW generator.

## 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

## Brakes

Meets the following standards:  
SAE J1026 APR90

### 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

## Swing Mechanism

Hydrostatic with independent planetary reduction.

### Ratings

Swing Torque	106 kN·m (78,200 lb·ft)
Swing Speed	9.0 rpm

### Features

- the swing mechanism is driven by a pinion gear sealed in a grease bath, through a double reduction planetary gear set

## Cab/FOGS

Integral Falling Object Guard System (FOGS) is an attachment in Asia, Australia, and North America.

### Cab Certifications

Integrated Falling Object Guard System is designed to protect the operator from falling objects, and is certified under SAE J1356 FEB88 and ISO 3449-1984 specifications. The front guard is also certified under SAE J1356 FEB88.

### 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.

## Track

Caterpillar designed and built track-type undercarriage purpose built for material handlers.

Track shoes	850 mm	(33.5")
Ground clearance	750 mm	(30")
Gauge	2921 mm	(9' 7")
Shoes each side		49
Rollers each side		8
Overall track length	5020 mm	(16' 6")

### Features

- robot-welded, pentagonal track roller frames with hydraulic adjusters
- sealed and lubricated rollers and idlers
- sealer track with triple grouser shoes

## Service Refill Capacities

	L	Gallons
Fuel Tank	560	145
Cooling System	55	14.5
Engine Oil	30	7.9
Swing Drive	15	4.0
Final Drive (each)	15	4.0
Hydraulic system (including tank)	400	106
Hydraulic tank	185	49



## Standard Equipment

Note: Standard equipment may vary. Consult your Caterpillar Dealer for specifics.

Air conditioner	Cold weather start
Alarm, travel	Comprehensive self-diagnostics
Alternator (52-amp)	Cooling, side-by-side, easy clean
Automatic engine control	Counterweight, Material Handling
Automatic swing brake	Electronic Memory System
Boom lowering check valves	Engine, Cat Turbocharged 3116
Cab, sound suppressed, includes:	Ether starting aid
Ash tray	Fine Swing Control
Cigar lighter	Generator hydraulics
Coat hook	Grapple hydraulics
Compartments:	Hydraulic system pressure taps
Literature	Lights, working:
Storage, lunch box	Boom, left side (1)
Drink holder	Cab-mounted (2)
Floor mat	Frame-mounted (1)
Heater with defroster	Locks, door and cap, one-key system
Horn, signaling/warning	Material Handling front, Cat two-piece
Hydraulic/starting systems lock lever	Mirrors:
Instrument panel	Cab, left
Joysticks, pilot-operated, adjustable	Frame, right
Lights, interior	Power Mode Selector
Radio mount	Rotate hydraulics
Seat, adjustable suspension	Stick lowering check valves
Seat belt, retractable	Straight travel circuit
Skylight, opening	Track shoes:
Travel controls, pedals with	850 mm (33.5") triple grouser
removable levers	Travel, two-speed
Windshield wipers and washers	Undercarriage, wide gauge
Cab riser, 1.9 m (6' 5")	Ventilation, positive filtered
Catwalks, left and right	Windshield, two-piece retractable

## Optional Equipment

Note: Optional equipment may vary. Consult your Caterpillar Dealer for specifics.

Generator, 20 kW manufactured for Caterpillar by Crane Systems Inc.  
Grapples, four tine, by Young Corporation  
Guards, falling object  
Rain protector, front window  
Track guiding guard

## Implement Controls

Two joystick hand levers and switches actuate boom, stick, grapple or generator and swing (ASTM pattern).

### Boom/Bucket Controls (Right Joystick)

- move forward and backward to lower and raise boom
- buttons on top, grapple cw and horn
- buttons on front of control lever, close grapple or magnet on

### Stick/Swing Controls (Left Joystick)

- move forward and backward to move stick in and out
- move left and right to control direction of swing
- buttons on top controls grapple ccw and horn
- buttons on front of control lever, open grapple or magnet off

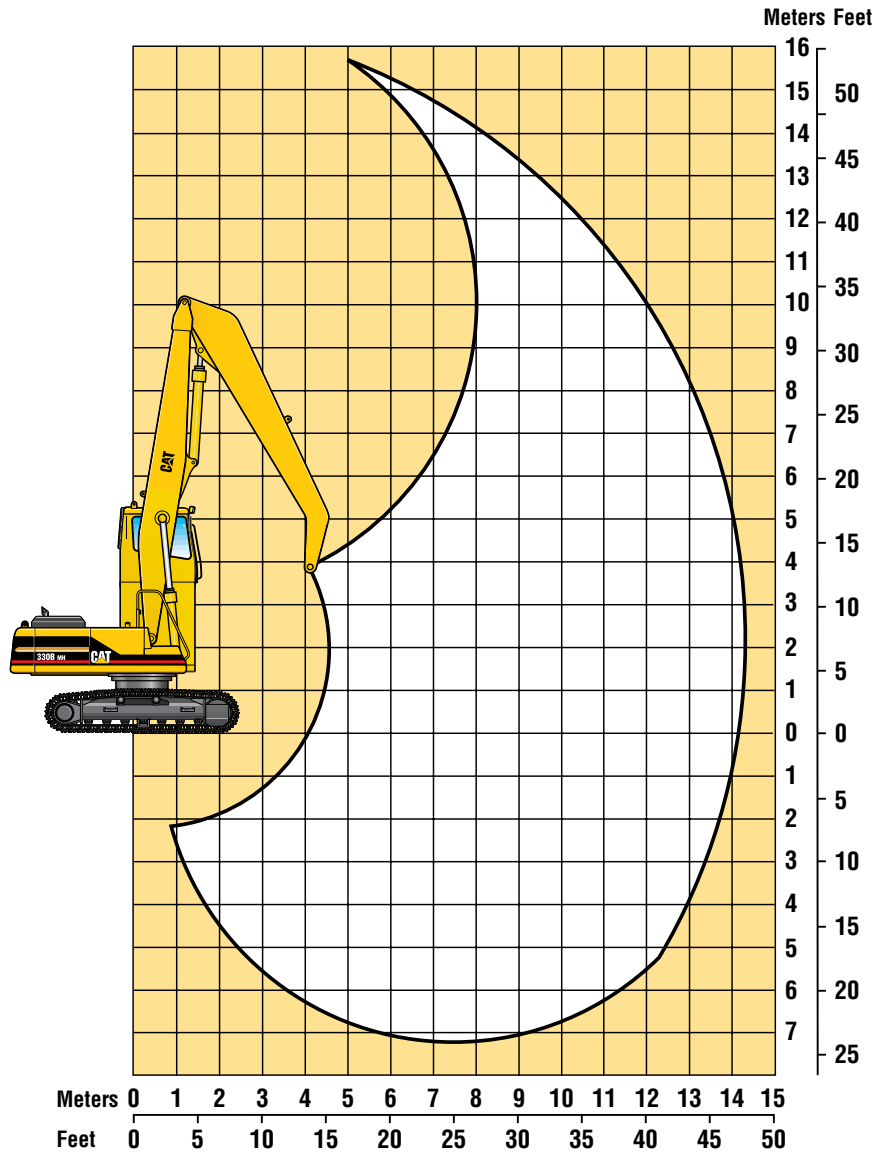
### Other Features

- 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
- toggle switch in cab switches between magnet operation and grapple operation

# Working Ranges – Two-Piece Front

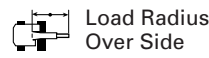
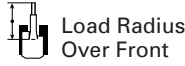
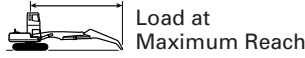
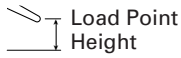
Machine equipped with 14.4 m (47' 3") two-piece front. Check with your Cat Dealer for other available options.


Maximum reach at 1.5 m (5')	14.4 m	47' 3"
Maximum height at 5.09 m (16' 8")	15.65 m	51' 4"



# Lift Capacities

330B MH equipped with Cat two-piece, 14.4 m (47' 3") Front, 850 mm triple grouser shoes

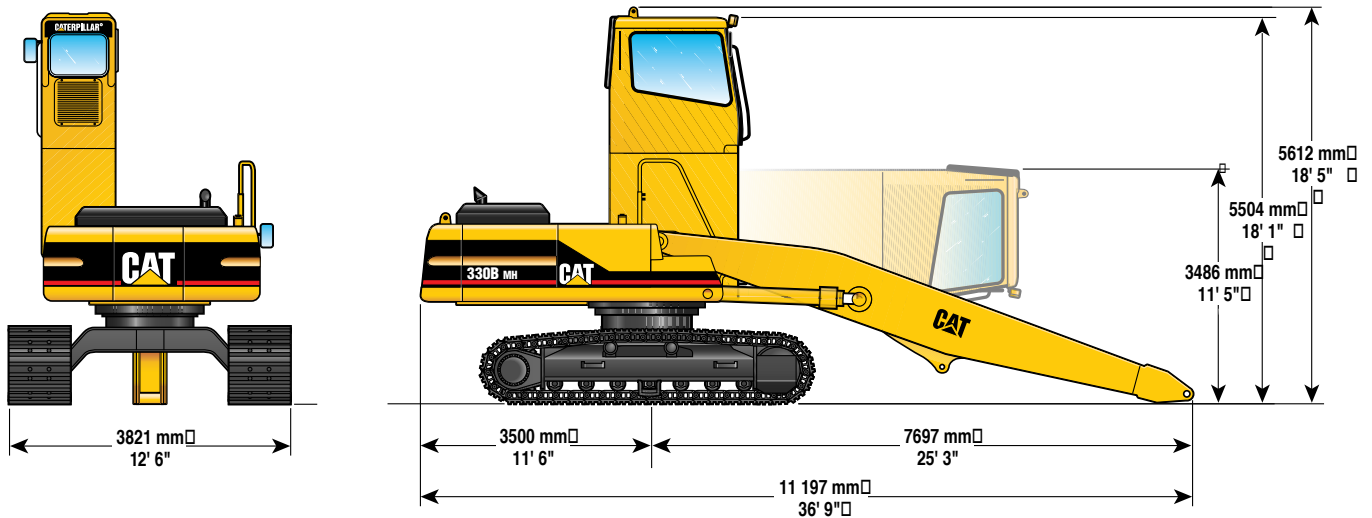


		3.0 m (10.0 ft)	4.5 m (15.0 ft)	6.0 m (20.0 ft)	7.5 m (25.0 ft)	9.0 m (30.0 ft)	10.5 m (35.0 ft)	12.0 m (40.0 ft)	13.5 m (46.0 ft)		m ft
13.5 m 46.0 ft	kg lb				*7600 *17,200					*6600 *15,200	8.93 26.37
12.0 m 40.0 ft	kg lb					*6700 *15,000	*6000 *6000			*5900 *13,300	10.56 34.05
10.5 m 35.0 ft	kg lb					*6500 *14,800	*6200 *14,100			*5500 *12,200	11.78 38.25
9.0 m 30.0 ft	kg lb					*6500 *14,600	*6200 *13,700	*5800 *13,000	5300 11,300	*5200 *11,600	12.70 41.41
7.5 m 25.0 ft	kg lb					*6700 *14,800	*6200 *13,800	*5800 *12,900	5300 11,400	*5100 *11,300	13.39 43.76
6.0 m 20.0 ft	kg lb				*7700 *17,000	*7700 *17,000	*7000 *15,400	*6400 *15,400	*6400 *14,100	*5900 *13,900	13.89 45.47
4.5 m 15.0 ft	kg lb			*9800 *21,300	*9800 *21,300	*8400 *18,400	*8400 *18,400	*7400 *16,200	*7400 *16,200	*6600 *14,500	14.21 46.57
3.0 m 10.0 ft	kg lb			*11 200 *24,300	*11 200 *24,300	*9200 *20,000	*9200 *20,000	*7900 *17,100	7700 16,600	*6900 *15,000	14.36 47.10
1.5 m 5.0 ft	kg lb			*12 300 *26,800	*12 300 *26,800	*9800 *21,400	9600 20,600	*8200 *17,900	7400 16,000	*7100 *15,400	14.35 47.10
0.0 m 0.0 ft	kg lb		*7600 *18,800	*7600 *18,800	*13 000 *26,200	12 500 26,800	*10 200 *22,200	9200 19,700	*8400 *18,300	7100 15,400	14.19 46.55
-1.5 m -5.0 ft	kg lb	*2900 *6800	*2900 *6800	*7200 *17,000	*7200 *17,000	*12 900 *28,000	12 000 25,900	*10 200 *22,100	8900 19,100	*8300 *18,100	13.86 45.45
-3.0 m -10.0 ft	kg lb	*4600 *10,600	*4600 *10,600	*8300 *19,200	*8300 *19,200	*12,200 *26,300	11,800 25,400	*9700 *21,100	8700 18,700	*7900 *17,200	13.35 43.75
-4.5 m -15.0 ft	kg lb	*6300 *14,400	*6300 *14,400	*9900 *22,700	*9900 *22,700	*10,800 *23,600	*10,800 *23,600	*8700 *18,900	8600 18,600	*7100 *15,300	12.65 41.37
-6.0 m -20.0 ft	kg lb		*10 600 *23,200	*10 600 *23,200	*8700 *18,900	*8700 *18,900	*7100 *15,300	*7100 *15,300	*5600 *12,100	*5600 *12,100	

\* Indicates that the load is limited by hydraulic capacity rather than tipping capacity. Lift capacity ratings are based on SAE standard J1097. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

# Dimensions

Note: Standard equipment may vary. Consult your Caterpillar Dealer for specifics.



NOTE: Track width with 850 mm (33.5") track shoes

# 330B Material Handler

AEHQ5309-01 (07-99)  
replaces AEHQ5309

[www.CAT.com](http://www.CAT.com)

© 1998, 1999 Caterpillar  
Printed in U.S.A.

Materials and specifications subject to change without notice.

