



**345B MH**  
**Series II**  
**Material Handler**



The Cat® 345B Series II 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 345B Series II Material Handler will deliver the reliability and productivity you demand from Caterpillar.

<b>Cat® 3176 ATAAC Diesel Engine</b>	<b>239 kW</b>	<b>321 hp</b>
<b>Operating Weight</b>	<b>56 100 kg</b>	<b>123,420 lb</b>
<b>Drawbar Pull</b>	<b>322 kN</b>	<b>72,450 lb</b>
<b>Maximum Travel Speed</b>	<b>4.4 km/h</b>	<b>2.7 mph</b>
<b>Cat Two-Piece Material Handler</b>		
<b>Linkage Arrangement</b>	<b>16.5 m</b>	<b>54'0"</b>
<b>Cat Cab Riser</b>	<b>1.9 m</b>	<b>6'5"</b>

# The Caterpillar® 345B Series II Material Handler

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



The 345B Series II MH arrangement is available with the following features:

**Caterpillar 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.



**25 kW hydraulically driven generator set** can power magnets up to 1829 mm (72 in) in diameter. A Caterpillar state-of-the-art electronic magnet controller and generator are linked to provide trouble free service. The 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 38 L/min (10 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 25 kW generator system.



**A new cab mounted magnet system monitor/control** provides system information through a series of indicators, lights and a rotary selector switch, to the operator. The indicator lights provide the following information:

- **Magnet "On":** Magnet is turned on.
- **Generator "Hot":** Generator is over heated and must be cooled down. The generator should be run under "no load" until the indicator turns off.
- **Voltage Fault:** Voltage too high or too low. May indicate service is required.
- **Ground Fault:** The magnet, generator or cable is grounded. Service is required.
- **Over 75% Duty Cycle:** The "magnet on" time exceeds 7.5 minutes in a ten minute time frame indicating the operator technique needs to be adjusted.

**Rotary selector switch** allows the operator to optimize the magnet performance for different grades of scrap from within the cab.

**Easy clean-out engine and hydraulic cooling cores** are provided for operating in debris-laden environments. The oil cooler and condenser slide outboard, providing ample space between the oil cooler and radiator cores for easy and efficient cleaning.



**Wide 3720 mm (12'2<sup>1/2</sup>") track gauge** provides the over-the-side stability required to handle heavy loads and improve productivity. Carbody plates are 5 mm thicker than standard, high strength swing bearing bolts plus larger box-section height team up to provide superior joint retention and durability in material handling applications.



**345B MH two-piece fronts by Caterpillar** meet your material handling needs with excellent lift performance and working range in both close and full reach.

**The Cat two-piece front** offers a maximum horizontal reach of 16.6 m (54'0") from swing center and a maximum vertical pin height of 16.2 m (53'2") at 8.4 m (27'6") from the swing center. The two-piece fronts are an excellent match for a 1.5 m<sup>3</sup> (2.0 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 3176C ATAAC Engine

*Built for power, reliability, economy and low emissions.*



**Cat 3176C ATAAC engine** continues its tradition of powerful, efficient performance, unmatched reliability and durability.

**Advanced Diesel Engine Module (ADEM II) fuel system** controls the engine for optimal fuel injection, increased fuel efficiency, extended component life.

**Turbocharged and aftercooled** to increase engine power by burning fuel with greater efficiency.

**Two-piece piston design** provides excellent strength with the steel crown and aluminum skirt for reduced weight.

**Engine oil S•O•S sampling valve** is provided on the engine oil filter head.

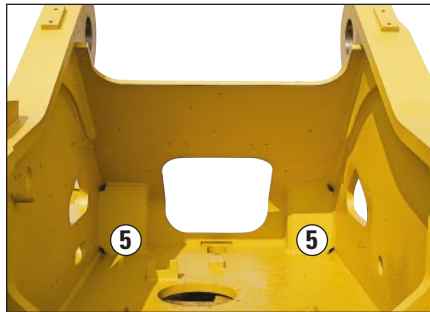
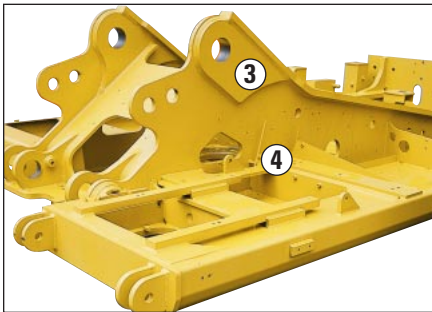
### **Automatic Engine Speed Control with convenient one-touch command.**

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.

## Structures

The 345B Series II 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.
- Track roller frames may be extended to provide 4470 mm (14'8") overall width with 750 mm (30") track shoes. Track frames are bolted to the carbody and may be removed for shipping.
- 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 and fabricated in a "U" section design unit 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 cylinder mounts (5) help handle increased torsional loads and payloads.

- Horizontal mounting plates (6) provide 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.

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## Serviceability

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

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**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.

- Two hydraulic capsule filters are mounted 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 is located in the pump compartment for easy access. 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 case drain 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 for easy access.

**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.

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## Complete Customer Support

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

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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 3176C ATAAC diesel engine.

Ratings at 2000 rpm*	kW	hp	PS
Net power	239	321	325

The following ratings apply at 2000 rpm when tested under the specified standard conditions for the specified standard:

Net power	kW	hp	PS
Caterpillar	239	321	325
ISO 9249	239	321	325
SAE J1349	239	321	325
EEC 80/1269	239	321	325

### Dimensions

Bore	125 mm	4.92 in
Stroke	140 mm	5.51 in
Displacement	10.3 liters	630 in <sup>3</sup>

### \*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 engine derating needed up to 2300 m (7,500 ft)

## Drive

Drive system is fully hydrostatic.

### Ratings

Maximum drawbar pull	331 kN	(74,380 lb)
Maximum travel speed	4.4 km/h	(2.7 mph)

### Features

- each track is driven by one independent, automatic shifting, two-speed slipper type 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

Two variable displacement, axial-piston pumps power the boom, stick, swing, bucket, auxiliary and travel circuits.

### Main Implement System

Maximum flow	360 x 2 liters/min	(95.1 x 2 gpm)
Maximum pressure		
Implements	34 340 kPa	(4980 psi)
Travel	34 340 kPa	(4980 psi)
Swing	28 440 kPa	(4130 psi)

### Pilot System

Maximum flow	41 liters/min	(10.8 gpm)
Maximum pressure	4655 kPa	(675 psi)

### Rotate Circuit for Grapple

Maximum flow	38 L/min	10 gpm
Maximum pressure	20 690 kPa	3000 psi

### Generator Aux. Pump

Maximum flow	155 L/min	41 gpm
Maximum pressure	19 300 kPa	2800 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	56 100	123,420
Upper	12 930	28,500
Counterweight	11 000	24,255
Undercarriage (includes carbony)	21 130	46,592
Two-Piece Front (with cylinders)	8035	17,717

\* All weights shown are for machines equipped with 750 mm (30") track and 25 kW generator, full fuel tank, operator and 2 yd<sup>3</sup> grapple.

## 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

## Cab

Operator protection guards meeting SAE J1356 and ISO 3449 are available as an attachment. Some applications and/or attachments may require additional cab guarding. Please contact your Caterpillar dealer for further information.

### 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.

## 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

## Track

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

Track shoes	750 mm	(30")
Ground clearance	740 mm	(29")
Gauge	3720 mm	(12'2 <sup>1/2</sup> ")
Shoes each side		52
Rollers each side		9

Overall track length	5360 mm	(17'7")
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### Features

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

## Swing Mechanism

Hydrostatic with independent planetary reduction.

### Ratings

Swing torque	149 kN·m (110,260 lb ft)
Swing speed	8.6 rpm

### Features

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

## Service Refill Capacities

	L	Gallons
Fuel Tank	720	190
Cooling System	45	12
Engine Oil	30	7.9
Swing Drive	11	2.9
Final Drive (each)	15	4
Hydraulic System (including tank)	520	137
Hydraulic Tank	210	55



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## Standard Equipment

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

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Air conditioner	Cold weather start
Alarm, travel	Comprehensive self-diagnostics
Alternator (75-amp)	Cooling, easy clean slide out
Automatic engine control	Counterweight, Material Handling
Automatic swing brake	Electronic Memory System
Boom lowering check valves	Engine, Cat 3176 ATAAC
Cab, sound suppressed, includes:	Ether starting aid
Ash tray	Generator hydraulics
Cigar lighter	Grapple hydraulics
Coat hook	Hydraulic system pressure taps
Compartments:	Lights, working:
Literature	Boom, left side (1)
Storage, lunch box	Cab-mounted (2)
Drink holder	Frame-mounted (1)
Floor mat	Locks, door and cap, one-key system
Heater with defroster	Material Handling front, Cat two-piece
Horn, signaling/warning	Mirrors:
Hydraulic/starting systems lock lever	Cab, left
Instrument panel	Frame, right
Joysticks, pilot-operated, adjustable	Power Mode Selector
Lights, interior	Rotate hydraulics
Radio mount	Stick lowering check valves
Seat, adjustable suspension	Straight travel circuit
Seat belt, retractable	Track shoes:
Skylight, opening	750 mm (30") triple grouser
Travel controls,	Travel, two-speed
pedals with removable levers	Undercarriage, wide gauge
Windshield wipers and washers	Ventilation, positive filtered
Cab riser, 1.9 m (6'5")	Windshield, two-piece retractable

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## Optional Equipment

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

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Cab Guard System  
    Operator protection top and front  
Cat 25 kW generator  
Grapples, four tine, manufactured by  
    Young Corporation  
Rain protector, front window  
Track guiding guard

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## Implement Controls

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

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### Right Joystick Controls

- move forward and backward to lower and raise boom
- top buttons control grapple rotate clock-wise and AEC switch (Automatic Engine Control)
- button on front of control lever closes grapple or turns magnet on

### Left Joystick Controls

- move forward and backward to move stick in and out
- move left and right to control direction of swing
- top buttons control grapple rotate counterclock-wise and horn
- button on front of control lever opens grapple or turns magnet off

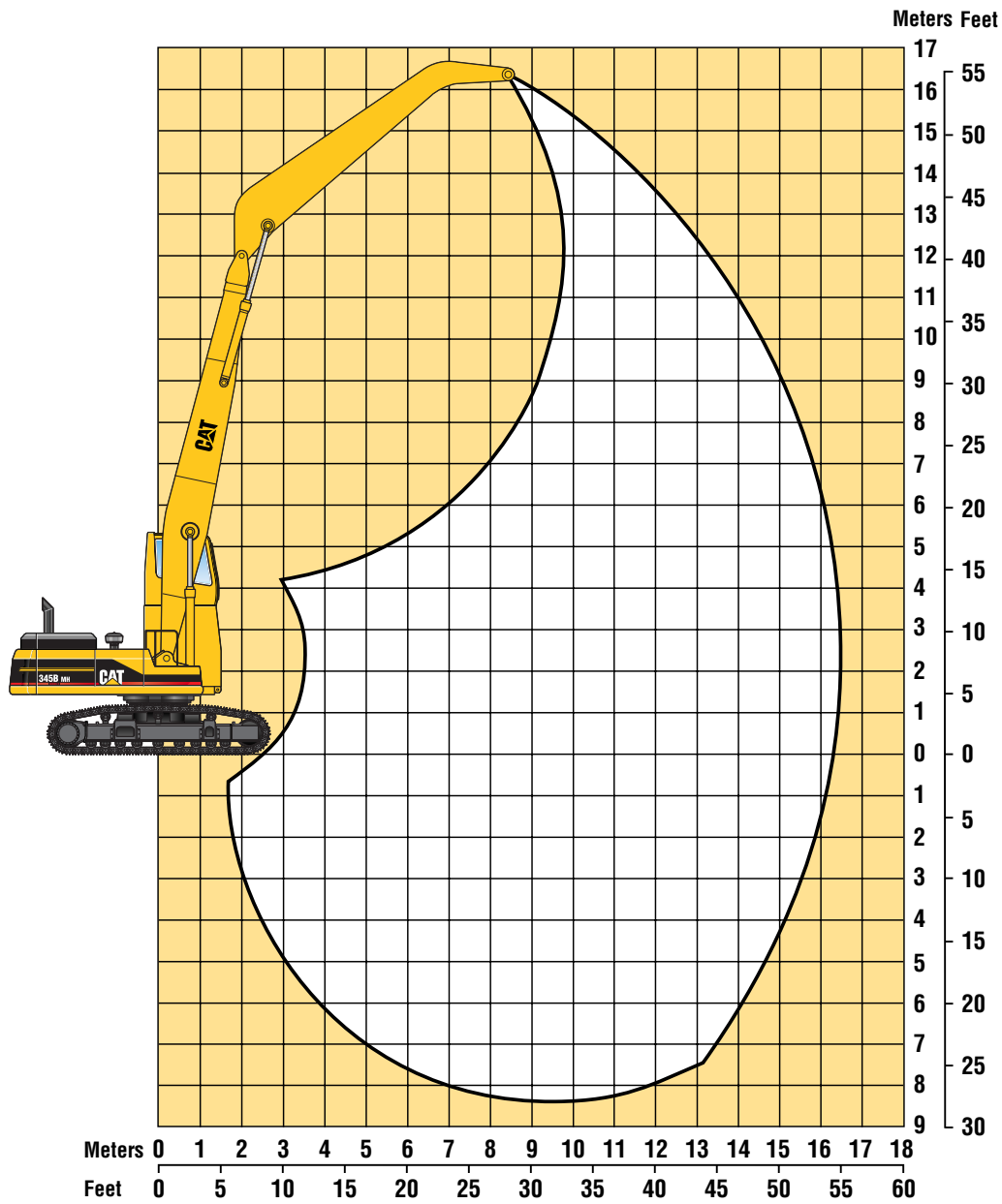
### Other Features

- oblique movement of either lever with switch combinations operate multiple 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 16.5 m (54'0") two-piece front. Check with your Cat Dealer for other available options.

Maximum reach at 1.5 m (5'0")	16.5 m	54'0"
Maximum height at 8.4 m (27'6")	16.2 m	53'2"



# Lift Capacities

345B MH equipped with Cat two-piece, 16.5 m (54'0") front, 900 mm triple grouser shoes

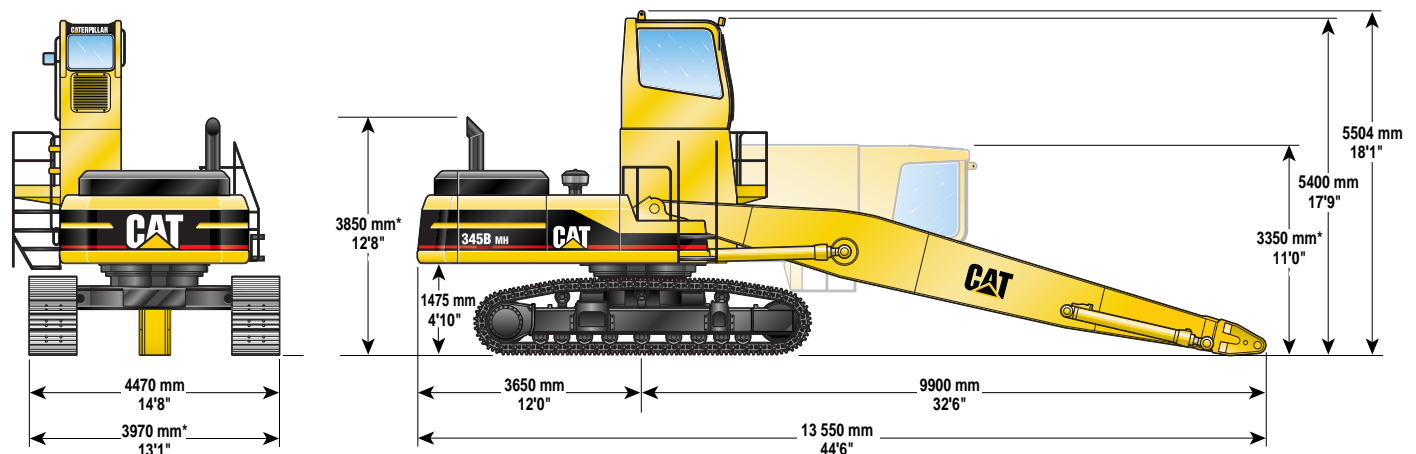


		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)		9.0 m (30.0 ft)		10.5 m (35.0 ft)		12.0 m (40.0 ft)		13.5 m (45.0 ft)		15.0 m (50.0 ft)		m ft		
15.0 m 50.0 ft	kg lb									*15,100	*15,100									*5700	*5700	10.16 32.30
13.5 m 45.0 ft	kg lb											*7400	*7400							*5300	*5300	11.84 38.15
12.0 m 40.0 ft	kg lb											*8300	*8300	*7100	*7100					*5000	*5000	13.13 42.60
10.5 m 35.0 ft	kg lb											*8300	*8300	*7700	*7700	*6300	*6300			*4900	*4900	14.15 46.08
9.0 m 30.0 ft	kg lb											*8400	*8400	*7700	*7700	*7200	*7200			*4900	*4900	14.94 48.80
7.5 m 25.0 ft	kg lb									*9600	*9600	*8600	*8600	*7900	*7900	*7200	7200	*6300	6000	*4900	*4900	15.55 50.88
6.0 m 20.0 ft	kg lb							*11 500	*11 500	*10 100	*10 100	*9000	*9000	*8100	*8100	*7300	7000	*6700	5900	*4900	*4900	15.99 52.39
4.5 m 15.0 ft	kg lb					*15 200	*15 200	*12 500	*12 500	*10 700	*10 700	*9300	*9300	*8300	8300	*7500	6900	6700	5800	*5100	5100	16.28 53.39
3.0 m 10.0 ft	kg lb			*22 900	*22 900	*16 800	*16 800	*13 400	*13 400	*11 200	*11 200	*9700	*9700	*8500	8000	*7500	6700	6600	5700	*5300	4900	16.43 53.90
1.5 m 5.0 ft	kg lb			*14 100	*14 100	*18 000	*18 000	*14 100	*14 100	*11 600	*11 600	*9900	9400	*8600	7800	7500	6500	6500	5600	*5500	4800	16.44 53.94
0.0 m 0.0 ft	kg lb			*9300	*9300	*18 400	*18 400	*14 400	*14 400	*11 800	11 300	*10 000	9100	*8600	7500	7400	6400	6300	5500	5600	4800	16.31 53.51
-1.5 m -5.0 ft	kg lb	*5500	*5500	*8500	*8500	*14 900	*14 900	*14 300	14 000	*11 700	10 900	*9900	8800	*8400	7300	7200	6200	*6200	5400	*5400	4900	16.04 52.60
-3.0 m -10.0 ft	kg lb	*14,300	*14,300	*8700	*8700	*13 300	*13 300	*13 600	*13 600	*11 200	10 600	*9500	8600	*8100	7200	*6800	6200	*5700	5300	*5200	5100	15.61 51.18
-4.5 m -15.0 ft	kg lb	*7100	*7100	*9200	*9200	*13 000	*13 000	*12 400	*12 400	*10 400	*10 400	*8800	8500	*7400	7100	*6200	6100	*4900	*4900			
-6.0 m -20.0 ft	kg lb			*9700	*9700	*12 600	*12 600	*10 700	*10 700	*9100	*9100	*7700	*7700	*6400	*6400	*5100	*5100					
-7.5 m -25.0 ft	kg lb					*9700	*9700	*8500	*8500	*7300	*7300	*6100	*6100	*4900	*4900							

\* 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 750 mm (30") track shoes.

\*Requires removal of exhaust extension group, handrail group on right-hand side of toolbox, ladder, walkway and handrail assemblies attached to left-hand side of cab riser group. Retracted gauge for shipping purposes only.

# 345B Series II Material Handler

AEHQ5328-01 (02-00)  
(Replaces AEHQ5328)

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