



345B L
Series II
Hydraulic Excavator



6.55 m Mass Boom, 3.0 m Stick,
and 600 mm Track

Operating Weight 48 960 kg

Cat® 3176C ATAAC Diesel Engine

Gross Power 257 kW/345 hp

Flywheel Power 239 kW/321 hp

Travel Speed (maximum) 4.4 km/h

345B L Series II Hydraulic Excavator

High performance and rugged durability combine to maximize your productivity.

Operator Station

Roomy, quiet, automatic climate controlled cab has excellent sightlines to the work area to help keep operator fatigue low and production up throughout the entire shift. **pg. 4-5**

Maestro Electronic Control System and Advanced Diesel Engine Management (ADEM) II

Maximizes fuel efficiency and performance by maintaining the optimum balance between engine speed and hydraulic demand. **pg. 6**

Hydraulics

- ✓ *Larger displacement main pumps for increased oil flow and faster cycle times.* High pressure hydraulics increase break-out and crowd forces to maximize bucket loads and lift capability while decreasing cycle times. The Cat Maestro Electronic Control system allows smooth, efficient operation. Optional auxiliary hydraulic flow control offers 4 programmable settings to precisely match hydraulic tool requirements. **pg. 7**

Outstanding performance.

Excellent control, high stick and bucket forces, impressive lift capacity, simplified service and a more comfortable operator station increase your productivity and lower your operating costs.

Undercarriage

The long variable gauge undercarriage has track roller frames which are bolted to the carbody and can be retracted for shipping. This undercarriage is stable, durable and has low maintenance. **pg. 8**

Structures

- ✓ Caterpillar design and manufacturing techniques assure outstanding durability and service life from these important components. *Heavy duty upper frame included in standard arrangement.* **pg. 9**

Engine

- ✓ *Increased horsepower for more productivity and faster cycle times.* The 345B L Series II is powered by the Cat 3176C ATAAC engine which complies with worldwide emissions requirements. This engine includes several design features which enhance performance, efficiency, reliability and durability. **pg. 10**



Environmentally Responsible Design

Quieter operation, lower engine emissions, less fluid disposal and cleaner service help you meet or exceed worldwide regulations and protect the environment. **pg. 11**

SmartBoom™

- More productive
- Faster cycle times for truck loading and rock scraping
- ✓▪ *Included in standard arrangement*
- Maintains optimum hammering frequency for effective, steady productivity. **pg. 13**

Heavy-duty Arrangements

Heavy-duty purpose designed and built machines are offered with a variety of special booms and sticks for Material Handling, Demolition, Ditch cleaning and drainage. **pg. 14**

Systems Match

The 345B L Series II is designed for matched performance with Cat articulated trucks. Five to six passes under two minutes, matched to the Cat 735 gives you maximum systems production. **pg. 12**

Booms, Sticks and Work Tools

A variety of booms, sticks and work tools are available. The reach boom has a larger digging envelope while the mass boom allows larger bucket use with greater digging forces. All booms and sticks are stress relieved. Special applications front linkages are available for a variety of custom applications. **pg. 14**

Buckets

A wide variety of bucket types, aggressive bucket designs, and larger capacity bucket options take advantage of the 345B's powerful digging forces for improved productivity. **pg. 15**

Serviceability

Fast, easy service with advanced filtration, filter access and electronic diagnostics for increased productivity. **pg. 16**

Complete Customer Support

Turns your investment into profit, from purchase to resale through:

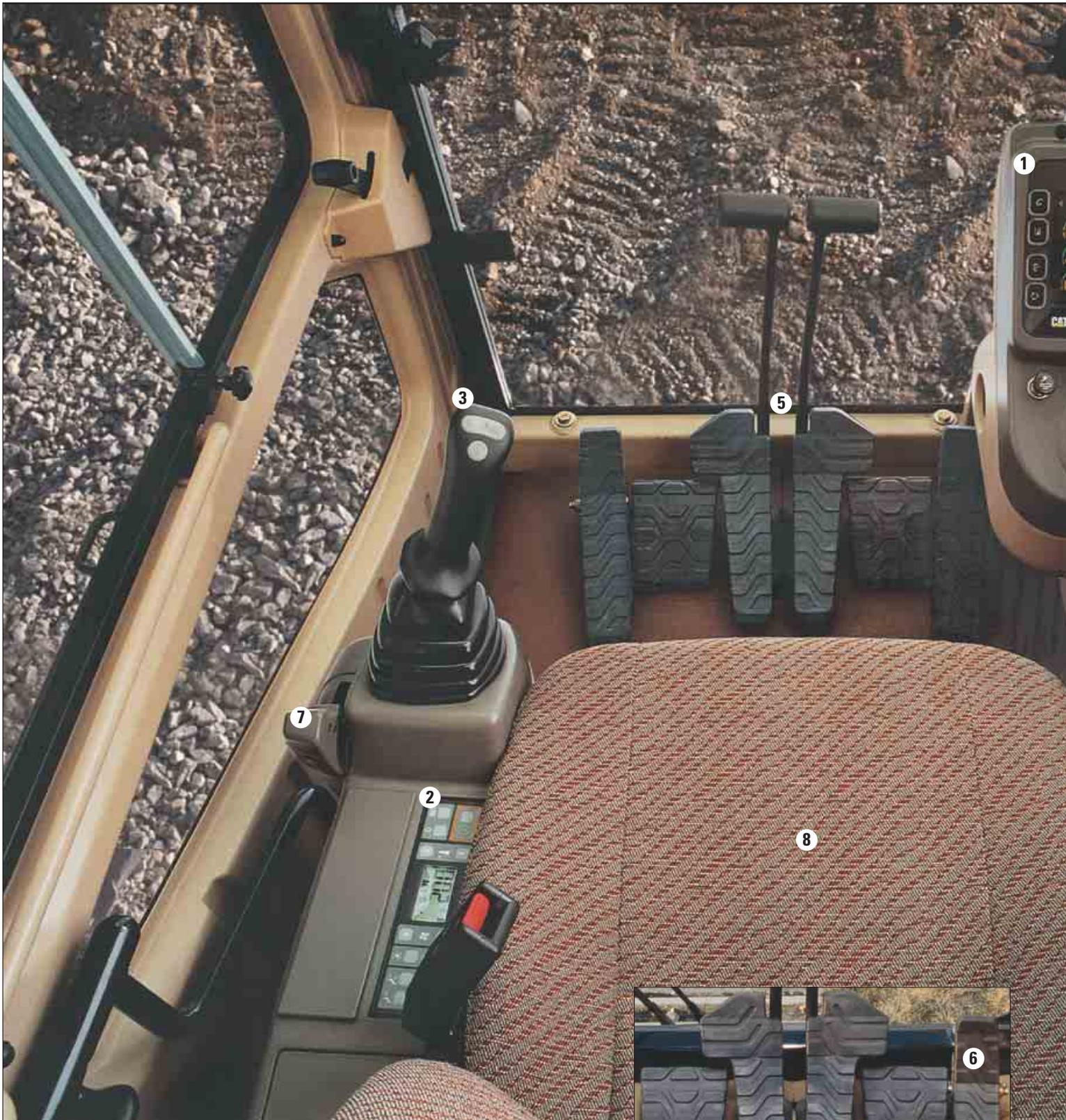
- Equipment Management Services for optimum profit
- Maintenance Services for equipment protection
- Predictive Services for optimum machine availability
- Reconditioning Services for lower repair cost
- Your Caterpillar dealer parts support for satisfaction and peace of mind



✓ *New feature*

Operator Station

Designed for comfort and ease of operation.





This operator work station is quiet with ergonomic control placement and convenient adjustments, low lever and pedal effort, ergonomic seat design, and highly efficient ventilation. The result is a cab that puts the operator firmly and comfortably in control to enhance productivity.

Excellent viewing area through wide windows. A large skylight provides upward visibility. The upper and lower front windows include top and bottom mounted wipers. The front window is also flat for easy service replacement. The upper left side door window can slide open. The lower window provides visibility to the tracks and the ground next to the machine.

Greater control convenience. Each of the controls is positioned within easy reach of the operator.

The fabricated, roll formed cab shell is mounted to the swing frame using butyl rubber mounts for reduced sound and vibration.

1 Caterpillar Maestro Electronic Control System panel includes fuel level, hydraulic oil and engine coolant temperature gauges, machine condition indicators and operator controls in a single console for ease of use (refer to Maestro Electronic Control System on page 6).

2 Automatic climate control maintains constant temperature in the cab in both hot and cold weather conditions. The operator can switch to standard air conditioning system with fresh or recirculated air.

3 Joysticks control all implements and swing functions with minimal effort. All electrical provisions are standard for easy retro-fit of auxiliary circuits. This includes two switches on each joystick. The integrated joystick consoles adjust to operator preference. Joystick consoles are suspended as part of the seat arrangement. Height can be adjusted independently of the seat.

4 Dial throttle with ten settings for simple, precise, repeatable engine speed adjustment.

5 Hand or foot actuated travel controls allow the operator to move the excavator while working the boom, stick and bucket. Hand levers are easily removable.

6 Optional straight travel pedal provides forward or reverse straight line travel. Steering adjustments can be made by using right or left travel pedals in combination with the straight travel pedal.

7 Hydraulic activation control lever deactivates hydraulic functions and helps prevent operation when the operator exits the cab.

8 The fully adjustable suspension seat includes an impressive range of comfort features. In addition to fore/aft height and weight adjustments, it also offers lumbar, wide arm support/rests and a retractable seat belt.

Maestro Electronic Control System

Manages the engine and hydraulics for maximum performance.

Maestro Electronic Power Unit Control System

controls state-of-the-art hydraulics and engine performance for maximized productivity, increased fuel efficiency, and lower emission and sound levels.

Electronic Engine Underspeed Control

balances engine and hydraulic output for maximum performance and fuel efficiency.

- It adjusts hydraulic pump output to maintain engine rpm in optimum range.
- 100 percent of engine power is available for the hydraulic system.

Operator control panel allows optimal performance in all applications. The high contrast back-lit liquid crystal display includes:

1 Power Mode Selector changes engine power and speed at the touch of a switch.

- **Economy Mode** sets hydraulic power at 90 percent and is used during normal and utility operations to reduce fuel consumption and sound levels.
- **Power Up Mode** sets hydraulic power at 100 percent for high production truck loading, trenching, and high speed travel.

2 Automatic Engine Speed Control (AEC)

reduces engine speed to 1300 rpm during light-load or no-load applications when activated. A switch on the right joystick control lever engages the low idle function reducing engine speed to 950 rpm. Press again to return to previous setting (page 10).

Work Mode Selector matches hydraulic characteristics to the application.

3 Boom Priority Mode gives priority flow to the boom for deep trenching and same level truck loading, where there is significant boom movement relative to swing.



4 Swing Priority Mode gives swing flow priority and is especially suited for crowding the sidewall while digging and extreme swing angle loading.

5 Fine Control Mode optimizes hydraulic pump output for applications like slope finishing or precision lifting which require smoother control.

6 User Mode allows the operator to choose from two submodes:

- **Tamping Mode** adjusts boom speed and force to keep machine shocks at a minimum when compacting material with the bucket.
- **Customer Mode** allows a set of hydraulic performance attributes to be selected, recorded, and recalled for later use.

Machine monitoring system uses a progression of indicators, action lamps, and alarms to inform the operator of machine conditions.

Service Level Mode delivers fast, detailed diagnosis of machine conditions improving uptime (refer to Serviceability on page 16).

Diagnostic functions primarily intended for service technicians provide a swift electronic scan of the Maestro Electronic Control System from troubleshooting to testing. Rapid diagnosis helps maximize uptime to reduce operating costs.

Hydraulics

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



Dramatic control responsiveness

aids operation and improves cycle time.

- Control movements are matched to hydraulic action for improved operator performance.
- Swing dampening restrains drift and improves positioning during truck loading and lifting applications for reduced operator fatigue.

Full-time high hydraulic relief pressure

provide excellent boom, stick, and bucket forces for better productivity, higher lift capacity and a wider range of workable material.

Hydraulic cross-sensing system

improves productivity with fast implement speeds and quick, smooth pivot turns.

- 100 percent of hydraulic horsepower is deliverable to implements.
- Full power to a single motor for strong, fast turns. Balanced power to both motors for straight travel.

Boom regeneration circuit diverts oil within the boom cylinder circuit to lower the boom. This allows pumps to have more pressure and flow available for other circuits.

Stick regeneration circuit also diverts oil within the stick cylinder circuit to allow fast stick in speed during multiple function operation.

Pump flow decreases when controls are in neutral for reduced fuel consumption and sound.

Auxiliary hydraulic valve is standard on the 345B L Series II for use with optional hydraulic circuits.

Auxiliary hydraulic flow control system option provides up to four programmable flow presets to precisely match hydraulic tool requirements (i.e., hammers, shears, processors, brush cutters, etc.).

Hydraulic cylinder snubbers at rod-end of boom cylinders and both ends of stick cylinder cushion shocks, reduce sound and increase cylinder life.

Cat's XT hose and reusable couplings meet the critical flexibility and strength demands of the 345B L Series II.

- O-ring face seal couplings provide positive sealing for reliable, leak-free connections.
- Hydraulic tank located close to pumps for increased hydraulic efficiency.
- Optional shut-off valve for the hydraulic tank.

Caterpillar Hydraulic oil offers maximum protection against rusting, mechanical and corrosive wear in all hydraulic systems. The machine is compatible with factory fill Cat HEES hydraulic bio-oil for ecologically sensitive applications.

Scheduled Oil Sampling allows for scheduled replacement or repair of components before the machine is stopped because of a major breakdown.

Remanufactured components such as cylinders, pumps, as well as other hydraulic repair options offer improved machine availability and considerably reduced repair costs.

Undercarriage

Durable undercarriage absorbs stresses and provides excellent stability.



Variable Gauge (VG) heavy-duty, H-shaped long undercarriage provides ease of transport and a stable platform when working on a variety of sites. With 600 mm standard track shoes, track roller frames can be retracted for less than three meter transport width. A variety of standard and heavy duty track shoes are available for various underfoot conditions.

Precision robotic welding ensures a quality weld every time. These welds increase rigidity, reduce internal stresses and enhance durability for the chassis and track roller frames.

Heavy-duty, H-shaped chassis design.

Cat undercarriage components are purposely oversized to offer heavy-duty performance and durability.

Strutted track links are sealed for long life. Track rollers, carrier rollers and idlers are also sealed and lubricated for excellent service life.

Smooth autoshifting two-speed travel

motors offer top travel speeds and plenty of pull on slopes or turns.

Standard idler guards and center track guides

maintain track alignment. Optional sprocket guiding guards or full length track guiding guards are available for additional protection on steep side slopes.

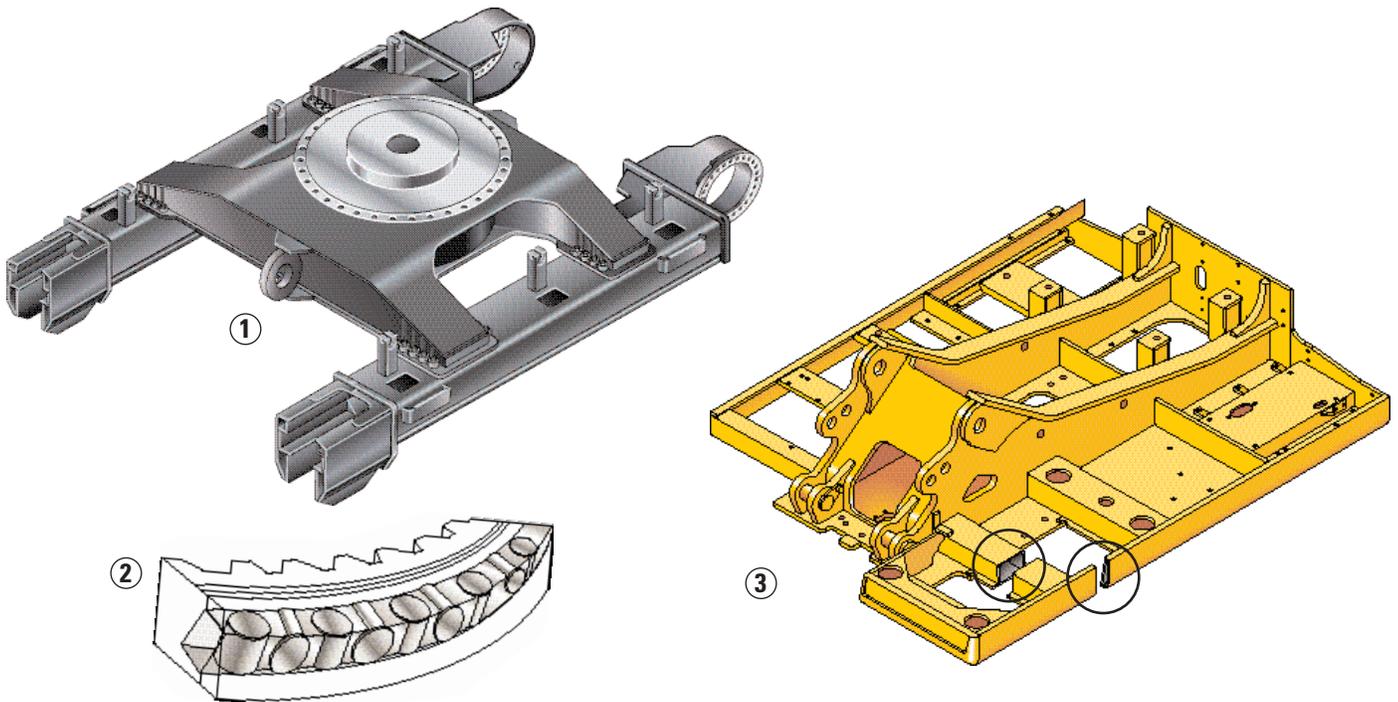
Bolt-on Step allows for ergonomic foot position in accordance with the EC standard for various track widths and for easy replacement.

Your Cat dealer's Custom Track Service

maximizes undercarriage wear life, reduces unscheduled downtime and saves money.

Structures

The 345B L Series II structural components are the backbone of the machine's durability.



345B L Series II carbody is a heavy-duty H-shaped design. Cat undercarriage components are purposely oversized to offer true heavy duty performance and durability, even in the hardest working conditions.

1 Advanced carbody design stands up in the toughest applications.

- Modified H-shaped, box-section carbody provides excellent resistance to torsional bending.
- Variable gauge undercarriage has track roller frames which are bolted to the carbody and can be retracted for shipping.
- Robot-welded track roller frames with fabricated U-section design.
- Robot welding ensures consistent, high-quality welds throughout the manufacturing process.

2 Swing bearing. Large diameter cross roller bearing offers more contact area than ball bearing design for superior support.

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

3 Rugged main frame is designed for maximum durability and efficient use of materials.

- *Heavy Duty Reinforced main frame delivers superior level of durability in rugged applications such as demolition, material handling, quarries, riverbeds, and alpine construction work.*
- Robot welding for consistent, high-quality welds.
- Outer frame utilizes curved side rails, which are die-formed, for excellent uniformity and strength throughout the length.
- Box section channels improve upper frame rigidity under the cab.
- Boom tower and one piece main rails are constructed of solid, high-tensile strength steel plates.
- New boom foot design transfers load more efficiently with less stress in critical areas.
- Sheet metal supporting structure is strengthened by integrating the mounting into the upper frame structure.
- Reinforced lift cylinder and swing drive mounts increase structural durability in rock and quarry applications.

Caterpillar excavator booms and sticks are built for performance and long service life.

- All standard application booms and sticks are stress relieved to maximize material strength and durability, while minimizing weight for improved performance and service life.
- Castings and forgings are used at high stress areas such as boom nose, boom foot, boom cylinder and stick foot.
- Large, welded, box-section structures with thick, multi-plate fabrications are also used in high-stress areas.
- Construction allows structures to flex and dissipate stresses.

Cat 3176C ATAAC Engine

Built for power, reliability, economy and low emissions.



Cat 3176C ATAAC (air to air aftercooled) engine. The electronically controlled 3176C engine features the Advanced Diesel Engine Management (ADEM II) system to optimize fuel injection volume and timing for improved fuel efficiency and engine performance. The 3176C engine uses a lined cast iron block, cast iron cylinder head, steel forged crankshaft, carbonized steel camshaft and an electronically controlled, manually-actuated unit injector fuel system to provide unmatched reliability and enhanced durability.

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

Caterpillar oils used in the drive train maximize equipment performance and service life as a result of advancements in diesel engine lube technology.

Factory remanufactured parts. A large choice of factory remanufactured parts and dealer proposed repair options increase machine availability and reduce total repair cost in case you need it.

Easy maintenance, is designed into the machine

- built-in pressure taps reduce troubleshooting time.
- good access to lubrication points and fluid level checks increases operator safety and ease of maintenance.

Meets all current known proposed worldwide emissions standards including the new 97/68/EC.

Automatic Engine Speed Control (AEC) with convenient one-touch command.

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

- When monitor switch is placed in the “ON” mode, if a no-load condition or light-load condition continues for more than three seconds, the automatic engine control reduces engine speed from high idle to 1300 rpm.
- When monitor switch is placed in the “OFF” mode, if a no-load condition or light-load condition continues for more than three seconds, the automatic engine control reduces engine speed by 100 rpm.
- At any time, the operator can activate a switch on the top of the right joystick control lever to reduce the engine speed to 950 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.

Environmentally Responsible Design

Caterpillar machines not only help you build a better world, they help maintain and preserve the fragile environment.



More performance. The 345B L Series II is designed to provide more performance than ever before in a machine this size. That means more work done in a day, less fuel consumption and minimal impact on our environment.

Low exhaust emissions. The Cat 3176C ATAAC engine used in the 345B L Series II is a low emission engine designed to meet the world's toughest emission regulations. Refinements to the turbocharger, cylinder head and pistons improve fuel combustion so there are less emissions. Plus the Advanced Diesel Engine Module (ADEM II) fuel system offers optimal fuel injection control to burn fuel efficiently and cleanly.

Quiet operation. The cooling fan, traditionally a major contributor to noise, is now hydraulically driven. The result is cool, quiet operation with less disturbance to the environment. The exterior sound power level is 109 dB(A) measured according to the dynamic test procedures and conditions specified in ISO 6395. As manufactured by Caterpillar, this machine's exterior sound power level meets the criteria specified in the European Directives noted on the certificate of conformity and the accompanying labeling.

Ozone protection. To help protect the earth's ozone layer, the 345B's air conditioning unit uses only R-134a refrigerant which does not contain harmful chlorofluorocarbons (CFC's).

Fewer leaks and spills. Engine oil and encapsulated hydraulic oil filters are positioned vertically and are easy to reach to minimize spillage. Lubricant fillers and drains are also designed to minimize spills. Cat o-ring face seals, XT hose and hydraulic cylinders are all designed to help prevent fluid leaks that can rob machine performance and cause harm to the environment. Additionally, the 345B L Series II is compatible with Cat HEES hydraulic bio-oil for ecologically sensitive applications. Finally, the new Cat Extended Life Coolant/Antifreeze provides extended service (up to 6000 h) so there is less need for fluid disposal.

Rebuildable components. Many of the major components used in the 345B L Series II are designed for rebuildability. That means you have high-quality, certified rebuilt replacement parts available to you at a fraction of the cost of new.

Systems Match

The 345B L Series II is designed for matched performance with Cat Articulated Trucks



Optimum pass match design. Five to six passes under two minutes, matched to the Cat 735, gives you maximum systems production at the lowest cost per ton of material moved.

Wide range of front end attachments provides choices for systems matching to a range of Cat articulated trucks from the 730 to the 740. This adds flexibility for a wide range of job conditions in a variety of applications such as construction, mining or quarry. Additionally, systems match offers versatility in job set-up whether top loading or same level truck loading.

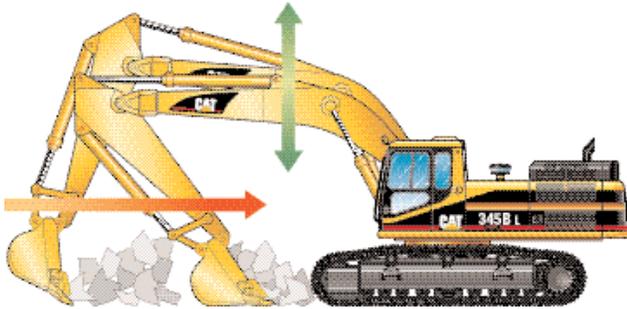
- Mass excavation front linkages with larger U-family buckets offer maximum matched systems productivity for mass earthmoving and allow easy loading into the truck body.
- Reach front linkages with T-family buckets give you maximum flexibility for trenching or excavation without sacrificing truck body match when additional reach is necessary.
- The 345B L Series II is matched to reach into the 735 truck body even when top loading over the rear. This means excellent load placement and distribution into the truck body, whether you are moving dirt for general construction or loading rock in a quarry.

Maestro Electronic Control Systems settings. The various Maestro settings allows you to optimize the Excavator to the job layout. Boom priority enhances productivity in short swing angles while swing priority maximizes production for longer swing angles.

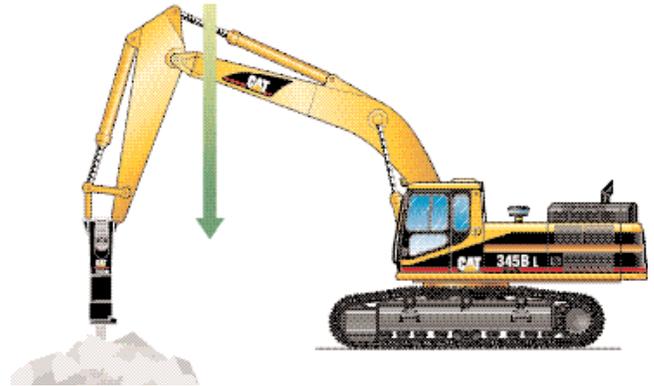
Matched design commonality. When you operate a Caterpillar loading system, you also have the advantage of similar Caterpillar parts, components, service items as well as Caterpillar “5-Star Customer Service” which leads to maximum systems availability.

SmartBoom™

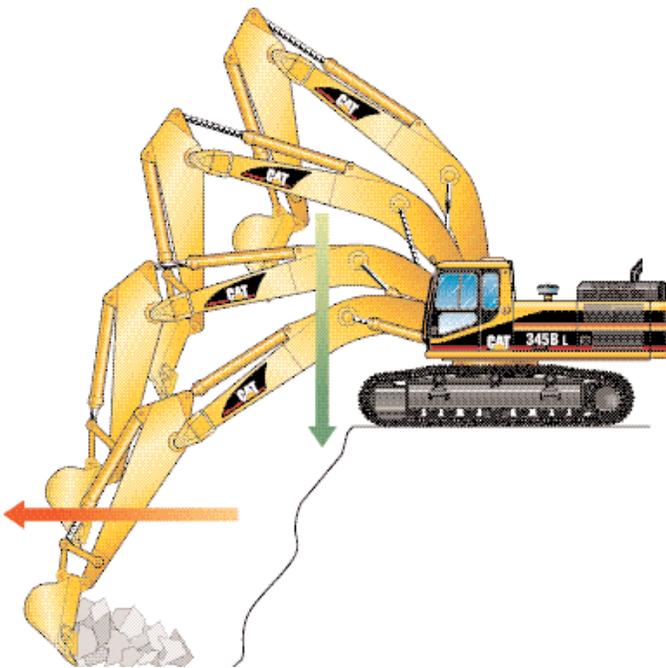
Reduces stress and vibrations transmitted to the machine and provides a more comfortable environment ensuring less operator fatigue.



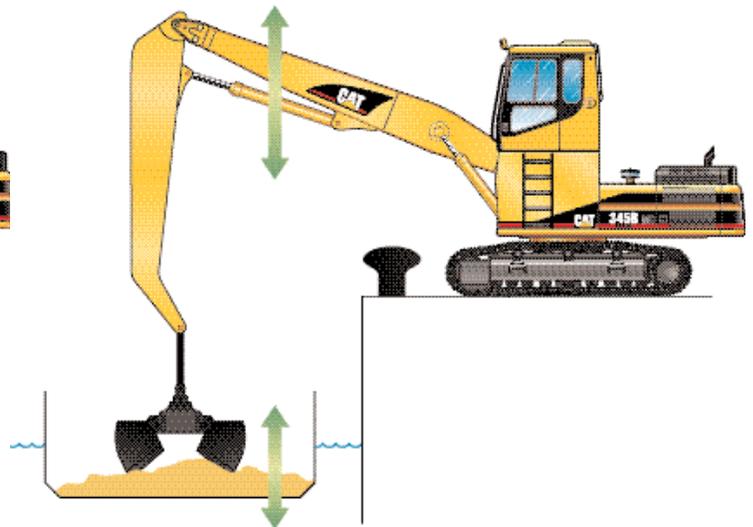
Scraping rock and finishing work is easy and fast. SmartBoom™ simplifies the task and allows the operator to fully concentrate on stick and bucket, while boom freely goes up and down without using pump flow.



Hammer work has never been this productive and operator-friendly. The front parts automatically follow the hammer while penetrating the rock. Blank shots or excessive force on the hammer are avoided resulting in longer life for the hammer and the machine. Similar advantages are applicable when using vibratory plates.



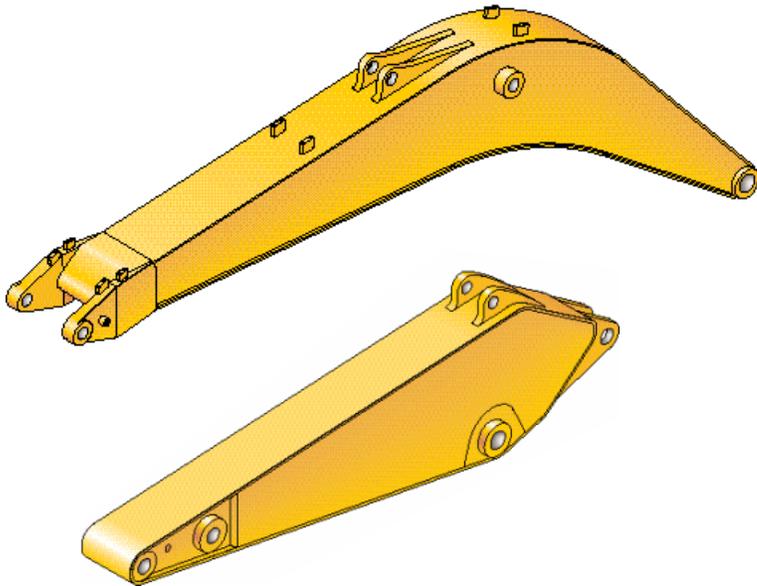
Loading trucks from a bench is more productive and more fuel efficient as the return cycle is reduced while the boom down function does not require pump flow.



Material handling is more efficient and productive due to faster return cycles. Unloading barges is easier because SmartBoom™ avoids excessive force being put on the floor of the barge allowing the operator to fully concentrate on production.

Booms, Sticks and Work Tools

The 345B L Series II is designed with the flexibility to help deliver higher production and efficiency.



Select the right combination for the job with your Cat dealer to help ensure top production from the start.

All Caterpillar booms and sticks have internal baffles which give the structures extra strength and durability to better withstand torsional loads.

The choice of two booms and four sticks, plus a wide selection of buckets and attachments, means the 345B offers a large combination of reach and digging forces for optimum versatility.

The Mass Excavation (M) boom 6.55 m maximizes excavating power and productivity and features two stick choices. Also offers added durability for more severe applications.

- The M 3.0 m stick provides an excellent digging envelope with large bucket capacity and high force levels.
- The M 2.5 m stick is intended for mass earth moving applications. Buckets are very large with high force levels.

The Reach boom (R) 6.9 m features an optimum design that maximizes digging envelopes with two stick choices.

- The R 3.35 m stick uses high capacity buckets and is best suited to trenching, excavation and general construction applications.
- The R 2.9 m stick has a tighter working envelope but uses the largest buckets of the reach stick family.

Caterpillar excavator booms and sticks are built for performance and long service life.

- Castings and forgings are used at high stress areas such as boom nose, boom foot, boom cylinder and stick foot.
- Large, welded, box-section structures with thick, multi-plate fabrications in high-stress areas.
- Construction allows structures to flex and dissipate stresses.
- All booms and sticks are stress relieved to maximize fatigue life and durability, while minimizing weight for improved performance.

Heavy-duty purpose designed and built machines are offered with a variety of special booms and sticks for

- Material Handling
- Demolition
- Long Reach Excavation

Variety of work tools. Choose from a variety of work tools such as hammers, compactors, grapples or crushers. Ask your Cat dealer for information on attachments or special configurations.

Multi-Processor. The Caterpillar Multi-Processors can be equipped with different jaw types depending on your need.

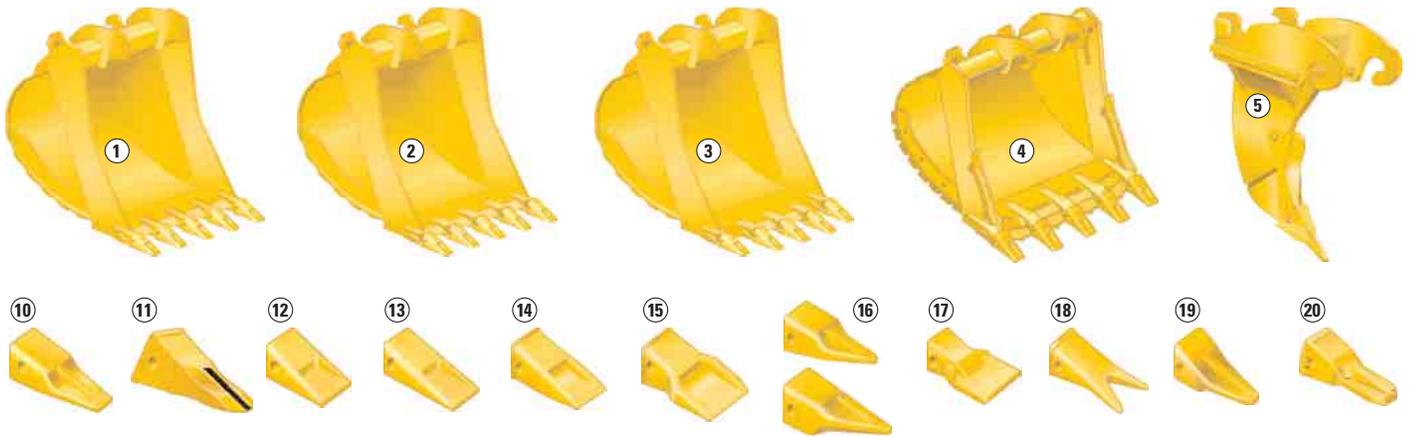
Multi-Grapple. The multi-grapple with unlimited left and right rotation is the ideal tool for stripping, sorting, handling and loading.

Orange Peel Grapple. Specifically designed for handling scrap and rock in recycling and transfer applications.

Hammer. With their wide variety of tools, Cat hammers provide the perfect match for maximum life, efficiency, and productivity.

Buckets and Quick Couplers

A wide variety of buckets help optimize machine performance. Purpose designed and built to Caterpillar's high durability standards.



1 Excavation Bucket. Digs and loads soft to medium materials such as clay and earth. Features weld on tip adapters, hardened cutting edge and side bars.

2 Extreme Excavation Bucket. Digs and loads compact/abrasive materials like earth/rock, sand/clay, sand/gravel, coal, chalk and low abrasion ores. Features abrasion resistant steel for all wear parts.

3 Rock Bucket. Digs and loads mixed earth/rock soils containing high percentage of rock or other abrasive materials. Features V-spade cutting edge, thicker base and wear surfaces.

4 Heavy Duty Rock Bucket. For aggressive bucket loading in highly abrasive applications such as shot rock and granite.

5 Ripper. Ripper tooth breaks up hard soil during ground preparation. This work tool is optimal for use in quarries to loosen compact rock soils before loading into dump truck or crusher. It is also perfectly suited for pipeline and trenching work. Optionally available with shank protector.

Tip selection

- 10 Penetration
- 11 Penetration Long Life
- 12 Short
- 13 Long
- 14 Heavy Duty Long
- 15 Heavy Duty Abrasion
- 16 Sharp / Corner Sharp
- 17 Wide
- 18 Twin Sharp
- 19 Long Sharp
- 20 Penetration Plus

Quick Couplers. Caterpillar Quick Couplers enable the operator to simply release one work tool and pick up another. Your hydraulic excavator becomes highly versatile. To suit your business and application needs, Caterpillar offers two different types of Quick Couplers.

CW-Series Dedicated Quick Coupler. The dedicated CW-Series quick coupler enables a quick tool exchange while maintaining top machine performance. It is available in a hydraulic and spindle version.

- The hydraulic version is available in a standard and a narrow version and makes it very easy for the operator to switch tools without having to leave the cab.
- The spindle version is a user-friendly mechanical version that can later be easily converted into the hydraulic version if required. The spindle version is also available in the narrow and standard version.
- A lifting hook is added to the dedicated Quick Coupler for maximum lift capacity.



Pin Grabber Plus Quick Coupler. This hydraulically controlled Pin Grabber Plus quick coupler makes changing buckets and other popular work tools simple and fast. The Pin Grabber Plus coupler mounts to the end of the stick and allows buckets, clamshells and other work tools to be used with little or no modification.

- Each model fully adjusts to different pin spreads of various tools regardless of manufacturer – it is the only coupler that accommodates a wide range of work tool makes and models.
- Pin-on assembly makes coupler installation and removal fast and easy.
- Coupler retains the same bucket opening and closing angles.
- Buckets can be reversed for greater flexibility when working around and under obstructions.
- Integrated lift eye.



A factory installed Quick Coupler hydraulic circuit avoids difficult and costly retrofitting of Quick Coupler hydraulics and allows usage of the most frequently used Quick Coupler systems. Ask your Cat dealer for more specific information.

Serviceability

Simplified service and maintenance features save time and money.

Fast, easy maintenance improves uptime for a better value.

Easy access service points for the fuel-water separator, engine oil filter, battery, radiator fluid level, window washer fluid level and pilot system filter.

Efficient filters and convenient filter locations make maintenance easier.

- Two hydraulic capsule filters are mounted outside the hydraulic tank. This design reduces spills and hydraulic system contamination during replacement. Indicator in cab signals when the filters need to be replaced, extending filter service life.
- Radial seal air cleaner with built-in air precleaner has double layered filter core for better filtration. No tools are required to change filter. Operator is alerted to the need for filter maintenance.
- The engine oil filter is located in the pump compartment for easy access. To help reduce spills during oil changes, filter opening faces up.
- Pilot hydraulic system filter keeps contaminants away from the pilot system. This system includes a Scheduled Oil Sampling port to simplify sampling.
- A swing and travel motor case drain filter keeps contaminants from returning to the tank.

Design and layout advancements translate to ease of service.

- Front linkage pin puller holes promote easy disassembly of front linkage.
- Cotter pin retained track master pin simplifies disassembly and assembly.



Environmentally sound features help protect the environment.

- Optional hydraulic tank shutoff valve reduces hydraulic spills during repair service.
- The hydraulic system is compatible with optional factory fill Caterpillar HEES biodegradable oil to reduce environmental impact.
- Engine emission and sound levels meet or are superior to EC regulations.

Water separator removes water from fuel even when under pressure and is easily accessible.

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

Optional Advanced Auto Lubrication system greatly reduces the time and effort required for greasing. The auto-lubricator can be programmed for specific intervals and volume.

Maestro Electronic Power Unit Control has diagnostic capabilities for Cat dealers' use.

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

Engine

Caterpillar four-cycle 3176C ATAAC (air to air aftercooled) diesel engine.

| Ratings at 2000 rpm | kW | hp |
|---------------------|-----|-----|
| Gross power | 257 | 345 |
| Net power | 239 | 321 |

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

| Net power | kW | hp |
|-------------|-----|-----|
| ISO 9249 | 239 | 321 |
| EEC 80/1269 | 239 | 321 |

Dimensions

| | |
|--------------|-------------|
| Bore | 125 mm |
| Stroke | 140 mm |
| Displacement | 10.3 liters |

Hydraulic System

Two variable displacement, axial-piston pumps power the boom, stick, swing, bucket, auxiliary and travel circuits. One single-section, gear-type pump powers the pilot circuit.

Main Implement System

| | |
|------------------|--------------------|
| Maximum flow | 360 x 2 liters/min |
| Maximum pressure | |
| Implements | 34 320 kPa |
| Travel | 34 320 kPa |
| Swing | 31 380 kPa |

Pilot System

| | |
|------------------|---------------|
| Maximum flow | 41 liters/min |
| Maximum pressure | 4650 kPa |

Cylinders, Bore and Stroke

| | |
|------------|---------------|
| Boom (2) | 160 x 1575 mm |
| Stick (1) | 190 x 1758 mm |
| Bucket (1) | |
| T family | 160 x 1356 mm |
| U family | 170 x 1366 mm |

Features

- main hydraulic pumps are electronically and hydraulically controlled and dependent on engine speed
- power modes match hydraulic output to application severity

Power rating conditions

- 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 altitude

Exhaust emissions

The 3176C meets the following emission requirements:
EU directive 97/68/EC Stage II

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
- when the idlers are in front, 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
- optional straight travel third pedal drives both tracks forward or reverse at the same speed. Steering adjustments can be made by simultaneously pressing right or left pedal.

Drive

Drive system is fully hydrostatic.

Ratings

| | |
|----------------------|----------|
| Maximum drawbar pull | 331 kN |
| Maximum travel speed | 4.4 km/h |

Features

- each track is driven by one independent, automatic shifting, two-speed slipper-type piston motor via integral planetary final drives
- multiple disc brakes, are spring-applied and pressure released and Cat HEES bio oil compatible
- each drive module is well integrated into the roller frame for total protection

Brakes

Meets the following standards:
ISO 10265:1998

Service and parking brake features

- 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

Swing Mechanism

Hydrostatic with independent planetary reduction

Ratings

| | |
|--------------|---------|
| Swing torque | 149 kNm |
| 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
- swing priority is available as a work mode

Cab/FOGS

Bolt-on Falling Object Guard System (FOGS) is available as an attachment.

Cab Certifications

Optional Falling Object Guard System is designed to protect the operator from falling objects, and is certified under ISO 3449-1984 specifications.

Track

Caterpillar designed and built track-type undercarriage.

| | |
|--------------------------------|--------|
| Track width variable gauge | |
| Standard 600 mm triple grouser | |
| Ground clearance | 705 mm |

Optional

- 900 mm triple grouser
- 600 mm heavy duty double grouser
- 600 mm heavy duty triple grouser
- 750 mm heavy duty triple grouser

Service Refill Capacities

| | Liters |
|-----------------------------------|--------|
| Fuel Tank | 720 |
| Cooling System | 66 |
| Engine Oil | 30 |
| Swing Drive (each) | 10 |
| Final Drive (each) | 15 |
| Hydraulic system (including tank) | 520 |
| Hydraulic tank | 210 |

Implement Controls

Two joystick hand levers actuate boom, stick, bucket and swing (SAE pattern), as well as optional auxiliary hydraulic functions.

Boom/Bucket Controls (right joystick)

- move forward and backward to lower and raise boom
- move left and right to control bucket curl and dump
- switch on top is one-touch low idle
- 2 switches for auxiliary functions

Stick/Swing Controls (left joystick)

- move forward and backward to move stick out and in
- move left and right to control direction of swing
- switch on top controls horn
- 2 switches for auxiliary functions

Other Features

- oblique movement of either lever operates two functions simultaneously
- manually applied hydraulic actuation lever on left console cuts off pilot pressure for joysticks and travel controls and electrical power for engine starting circuit

Booms, Sticks and Buckets

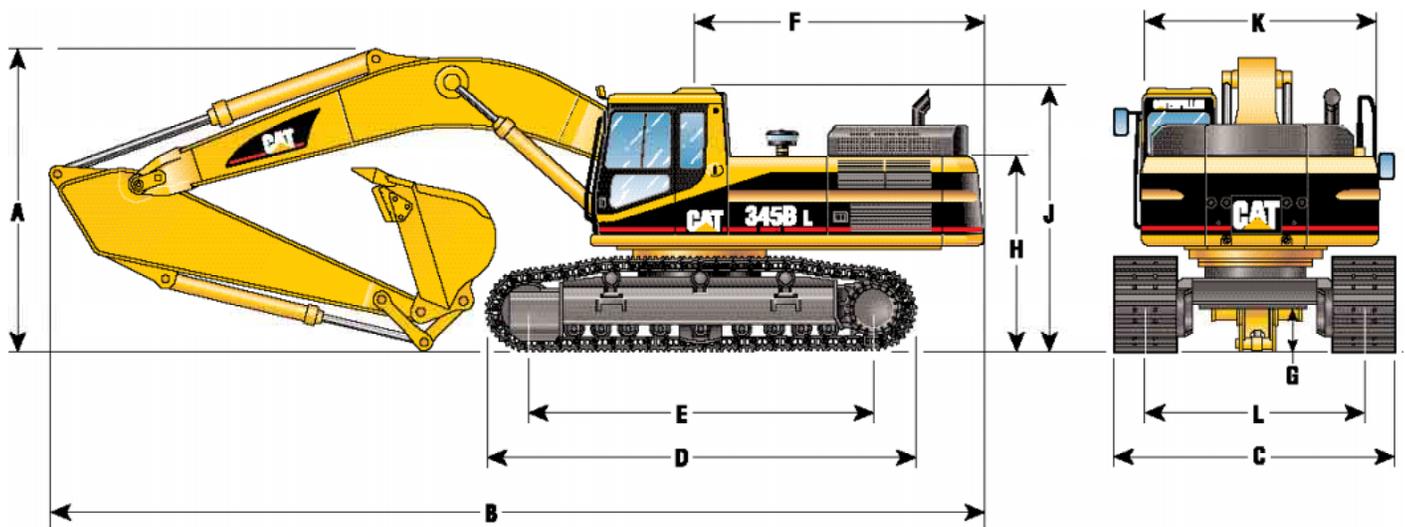
Contact your Caterpillar dealer for special bucket requirements. All buckets are available to fit the Cat quick coupler.

| Bucket type | Linkage | Width mm | Weight kg | Capacity m ³ | 6.55 m ME boom | | 6.9 m Reach boom | |
|--|---------|-------------|--------------|----------------------------|-------------------|-------|---------------------|--------|
| | | | | | Stick | | Stick | |
| | | | | | 2.5 m | 3.0 m | 2.9 m | 3.35 m |
| Excavation | T | 1350 | 1890 | 1.8 | × | × | | |
| | T | 1450 | 1975 | 2.0 | × | × | | |
| | T | 1570 | 2075 | 2.2 | × | × | | |
| | U | 1750 | 2690 | 3.5 | | | × | × |
| Extreme Excavation | T | 1350 | 2035 | 1.8 | × | × | | |
| | T | 1450 | 2090 | 2.0 | × | × | | |
| | T | 1570 | 2230 | 2.2 | × | × | | |
| | U | 1590 | 2530 | 2.6 | | | × | × |
| | U | 1680 | 2630 | 2.8 | | | × | × |
| Rock | U | 1820 | 2805 | 3.1 | | | × | × |
| | T | 1350 | 2295 | 1.8 | × | × | | |
| | T | 1450 | 2390 | 2.0 | × | × | | |
| | T | 1570 | 2520 | 2.2 | × | × | | |
| | U | 1590 | 2680 | 2.6 | | | × | × |
| | U | 1680 | 2800 | 2.8 | | | × | × |
| Maximum load in kg (payload plus bucket) | | | | | 7567 | 7090 | 6924 | 6313 |

| | |
|---|--|
|  | Max. Material Density 1200 kg/m ³ |
|  | Max. Material Density 1500 kg/m ³ |
|  | Max. Material Density 1800 kg/m ³ |
|  | Not compatible |

Dimensions

All dimensions are approximate.



| | | | | | |
|--|------|--------------------------|-------|---------------------------------------|------|
| A Shipping height (with bucket) | m | B Shipping length | m | C Shipping width | m |
| Mass boom | | Mass boom | | retracted position | |
| 2.5 m stick | 3.87 | 2.5 m stick | 11.46 | 600 mm shoes (standard) | 2.99 |
| 3.0 m stick | 3.96 | 3.0 m stick | 11.40 | 750 mm shoes | 3.14 |
| Reach boom | | Reach boom | | 900 mm shoes | 3.29 |
| 2.9 m stick | 3.66 | 2.9 m stick | 11.72 | D Track length | 5.37 |
| 3.35 m stick | 3.69 | 3.35 m stick | 11.72 | E Length to centers of rollers | 4.34 |
| | | | | F Tail swing radius | 3.65 |
| | | | | G Ground clearance | 0.71 |
| | | | | H Body height | 2.53 |
| | | | | J Cab height | 3.47 |
| | | | | with FOGS | 3.65 |
| | | | | K Body width* | 2.99 |
| | | | | L Track gauge | |
| | | | | extended | 2.89 |
| | | | | retracted | 2.39 |

* No mirrors or handrails

Machine and Major Component Weights

Actual weights and ground pressures will depend on final machine configuration.

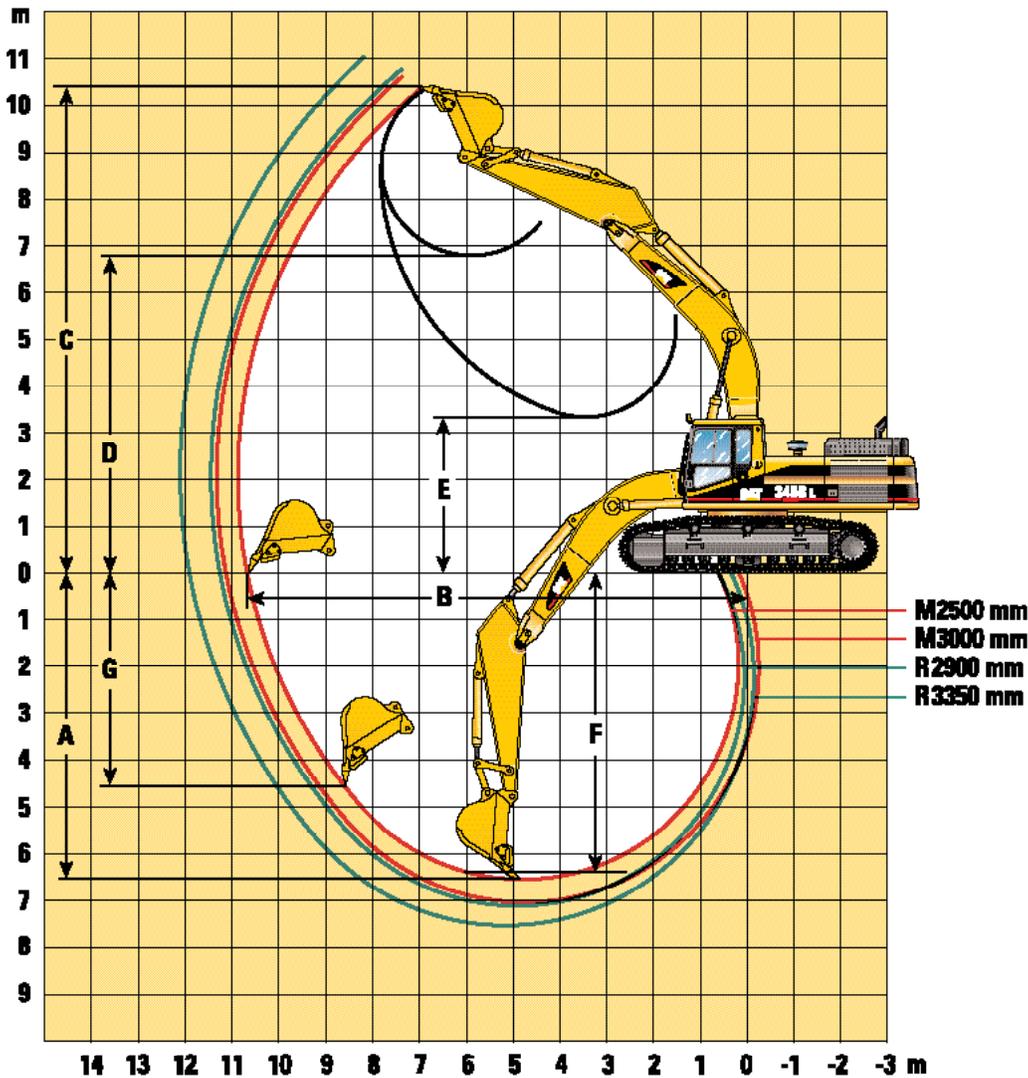
| | | 6.55 m Mass boom | | 6.9 m Reach boom | |
|-------------------|--------------------|---------------------|--------|---------------------|--------|
| | | 2.5 | 3.0 | 2.9 | 3.35 |
| Sticks | m | 2.5 | 3.0 | 2.9 | 3.35 |
| Operating weight* | kg | 48 985 | 48 960 | 48 010 | 47 835 |
| Bucket capacity | m ³ | 2.6 | 2.6 | 2.2 | 2.0 |
| Ground pressure | kg/cm ² | 0.86 | 0.86 | 0.85 | 0.84 |
| Stick weight | kg | 1700 | 1675 | 1670 | 1655 |
| Boom weight | kg | 3645 | | 3125 | |
| Upperstructure** | kg | 10 495 | | 10 495 | |
| Undercarriage | | | | | |
| with 600 mm shoes | kg | 18 780 | | 18 780 | |
| with 750 mm shoes | kg | 19 715 | | 19 715 | |
| with 900 mm shoes | kg | 20 465 | | 20 465 | |
| Counterweight | kg | 9300 | | 9300 | |

* With counterweight, operator and full fuel.

** Without counterweight.

Working Ranges – Long Variable Gauge Undercarriage

Mass (M) boom and Reach (R) boom configurations



| | M3.0U | M2.5U | R3.35T | R2.9T |
|--|--------------------|--------------------|--------------------|--------------------|
| A Maximum Digging Depth | 7.11 m | 6.61 m | 7.50 m | 7.04 m |
| B Maximum Reach at Ground Level | 11.12 m | 10.76 m | 11.69 m | 11.27 m |
| C Maximum Cutting Height | 10.73 m | 10.55 m | 11.09 m | 10.91 m |
| D Maximum Loading Height | 6.92 m | 6.73 m | 7.56 m | 7.39 m |
| E Minimum Loading Height | 2.76 m | 3.26 m | 2.92 m | 3.37 m |
| F Maximum Digging Depth 2.44 m Level Bottom | 7.03 m | 6.44 m | 7.34 m | 6.87 m |
| G Maximum Vertical Wall Digging Depth | 4.83 m | 4.48 m | 5.94 m | 5.50 m |
| Bucket Digging Force (ISO 6015) | 229.2 kN | 238.8 kN | 219.9 kN | 226.2 kN |
| Stick Digging Force (ISO 6015) | 214.5 kN | 234.6 kN | 203.7 kN | 218.3 kN |
| Bucket Size | 2.6 m ³ | 2.6 m ³ | 2.0 m ³ | 2.2 m ³ |
| Tip Radius | 2096 mm | 2096 mm | 1890 mm | 1890 mm |

Lift capacities

All weights are in kg

Mass boom

Medium Stick

3.0 m

Shoes

600 mm

Bucket Capacity (SAE)

2.6 m³

Bucket Weight

2657 kg

| | 1.5 m | 3.0 m | 4.5 m | 6.0 m | 7.5 m | 9.0 m |  | | m |
|---|-------|-----------------|-----------------|-----------------|--------------|------------|---|--|-------------------|
|  9.0 m | | | | | | | | | *3900 *3900 8.81 |
| 7.5 m | | | | | *7950 *7950 | | | | *3680 *3680 9.92 |
| 6.0 m | | | | | *8340 *8340 | | | | *3650 *3650 10.62 |
| 4.5 m | | | *14 860 *14 860 | *11 120 *11 120 | *9120 9070 | *7940 6260 | | | *3740 *3740 11.01 |
| 3.0 m | | | *18 340 *18 340 | *12 830 12 610 | *10 030 8610 | *8350 6070 | | | *3970 3970 11.13 |
| 1.5 m | | | *20 370 18 480 | *14 140 11 790 | *10 780 8170 | *8690 5860 | | | *4360 3990 10.98 |
| Ground | | | *20 620 17 860 | *14 700 11 280 | *11 150 7860 | *8730 5710 | | | *4950 4250 10.57 |
| -1.5 m | | *15 480 *15 480 | *19 600 17 810 | *14 400 11 090 | *10 890 7720 | | | | *5880 4890 9.86 |
| -3.0 m | | *22 100 *22 100 | *17 430 *17 440 | *13 040 11 190 | *9610 7810 | | | | |
| -4.5 m | | *17 700 *17 700 | *13 600 *13 600 | *9970 *9970 | | | | | |

Mass boom

Short Stick

2.5 m

Shoes

600 mm

Bucket Capacity (SAE)

2.6 m³

Bucket Weight

2657 kg

| | 1.5 m | 3.0 m | 4.5 m | 6.0 m | 7.5 m | 9.0 m |  | | m |
|---|-------|-----------------|-----------------|-----------------|--------------|------------|---|--|-------------------|
|  9.0 m | | | | | | | | | *5120 *5120 8.19 |
| 7.5 m | | | | | *8430 *8430 | | | | *4840 *4840 9.4 |
| 6.0 m | | | | *10 240 *10 240 | *8830 *8830 | | | | *4800 *4800 10.14 |
| 4.5 m | | | *16 050 *16 050 | *11 740 *11 740 | *9530 8860 | | | | *4920 4550 10.55 |
| 3.0 m | | | *19 270 *19 270 | *13 310 12 310 | *10 340 8430 | *8550 5920 | | | *5200 4290 10.67 |
| 1.5 m | | | *17 720 *17 720 | *14 400 11 570 | *10 960 8040 | *8750 5760 | | | *5660 4310 10.52 |
| Ground | | | *20 170 17 680 | *14 680 11 160 | *11 140 7790 | | | | *6380 4640 10.09 |
| -1.5 m | | *16 390 *16 390 | *18 750 17 810 | *14 050 11 070 | *10 600 7720 | | | | *6710 5440 9.32 |
| -3.0 m | | *20 470 *20 450 | *16 170 *16 170 | *12 270 11 270 | | | | | |
| -4.5 m | | | *11 650 *11 650 | *8140 *8140 | | | | | |

Reach boom

Medium Stick

3.4 m

Shoes

600 mm

Bucket Capacity (SAE)

2.0 m³

Bucket Weight

2014 kg

| | 1.5 m | 3.0 m | 4.5 m | 6.0 m | 7.5 m | 9.0 m |  | | m |
|---|-------|-----------------|-----------------|-----------------|--------------|------------|---|--|-------------------|
|  9.0 m | | | | | *6840 *6840 | | | | *3540 *3540 9.5 |
| 7.5 m | | | | | *7810 *7810 | | | | *3390 *3390 10.5 |
| 6.0 m | | | | | *8390 *8390 | *7670 6950 | | | *3380 *3380 11.14 |
| 4.5 m | | | *15 090 *15 090 | *11 310 *11 310 | *9310 *9310 | *8110 6800 | | | *3480 *3480 11.5 |
| 3.0 m | | | *18 890 *18 890 | *13 190 13 030 | *10 340 9060 | *8650 6570 | | | *3690 *3690 11.61 |
| 1.5 m | | | *18 570 *18 570 | *14 660 12 860 | *11 220 8640 | *9130 6350 | | | *4030 *4030 11.47 |
| Ground | | | *19 250 18 560 | *15 380 11 810 | *11 730 8340 | *9360 6180 | | | *4550 4340 11.09 |
| -1.5 m | | *12 940 *12 940 | *20 740 18 490 | *15 260 11 620 | *11 690 8190 | *9130 6100 | | | *5350 4870 10.42 |
| -3.0 m | | *20 040 *20 040 | *18 900 18 700 | *14 230 11 660 | *10 870 8210 | | | | *6020 5900 9.41 |
| -4.5 m | | *20 800 *20 800 | *15 770 *15 770 | *11 970 11 920 | *8620 8450 | | | | |

Reach boom

Short Stick

2.9 m

Shoes

600 mm

Bucket Capacity (SAE)

2.2 m³

Bucket Weight

2114 kg

| | 1.5 m | 3.0 m | 4.5 m | 6.0 m | 7.5 m | 9.0 m |  | | m |
|---|-------|-----------------|-----------------|-----------------|--------------|------------|---|--|-------------------|
|  9.0 m | | | | | | | | | *4190 *4190 8.97 |
| 7.5 m | | | | | *8290 *8290 | | | | *4010 *4010 10.04 |
| 6.0 m | | | | | *8800 *8800 | *7770 6740 | | | *4000 *4000 10.71 |
| 4.5 m | | | *16 190 *16 190 | *11 860 *11 860 | *9650 9300 | *8360 6630 | | | *4110 *4110 11.09 |
| 3.0 m | | | *19 720 19 720 | *13 600 12 710 | *10 590 8860 | *8820 6430 | | | *4350 4320 11.2 |
| 1.5 m | | | *14 880 *14 880 | *14 850 12 000 | *11 350 8470 | *9190 6230 | | | *4740 4340 11.05 |
| Ground | | | *18 340 18 230 | *15 300 11 600 | *11 690 8210 | *9280 6090 | | | *5340 4610 10.65 |
| -1.5 m | | *13 560 *13 570 | *19 880 18 310 | *14 910 11 490 | *11 450 8100 | *8780 6060 | | | *6260 5230 9.95 |
| -3.0 m | | *22 270 *22 270 | *17 730 *17 730 | *13 580 11 600 | *10 320 8190 | | | | *5160 *5160 8.87 |
| -4.5 m | | *17 800 *17 800 | *14 170 *14 170 | *10 820 *10 820 | | | | | |



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach

* Limited by hydraulic rather than tipping load.

The above loads are in compliance with hydraulic excavator lift capacity ratings standard ISO/DIS 10567, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

Standard Equipment

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

| | | |
|--|---|---|
| Air precleaner | Skylight, fixed | Fully pressurized hydraulic system |
| Alternator, 70-amp | Start-up level check for hydraulic oil, engine oil, and engine coolant | Guard, heavy duty bottom – including swivel guard with bolt head protection |
| Automatic engine speed control | Storage compartment suitable for a lunch box cooler | Heavy duty upper frame |
| Automatic swing parking brake | Travel control pedals with removable hand levers | Hydraulic neutralizer lever for all controls |
| Auxiliary hydraulic valve and auxiliary (high pressure) pump drive location | Two-speed travel with automatic shift change | Lights, working |
| Boom drift reducing valve | Windows, laminated front upper windshield (50/50 split/flat), all other windows to be tempered glass, green tinted, sliding upper door window | Frame mounted, one |
| Boom lowering check valve with overload warning device | Windshield wiper and washer, upper and lower | Boom, both sides |
| Cab | Cat XT hoses and reusable coupling | Cab mounted, two |
| Air conditioner with automatic climate control | Cat maintenance free batteries | Storage box mounted, one |
| Ash tray with lighter | Cooling package, with high ambient capability | Mirrors, frame (right) and cab (left) |
| Coat hook | Counterweight (9300 kg) with lift hook | Muffler |
| Drink holder | Diagnostic authoring tool for use with Cat Service Information System (SIS) | Overheat protection system (through controller ROM) |
| Floor mat | Door locks and cap locks with Caterpillar one-key security system | Pre-start monitoring system |
| Heater and defroster | EC Mark package including steps, mirrors, and other EC required features | Power mode selector |
| Horn | EC sound package, 109 dB(A) ISO 6395 label | Radial seal air filter with double element |
| Instrument panel with gauges, gauges and indicator lights for fuel level, coolant temperature and hydraulic oil temperature, hydraulic filter clogging warning | Engine: | Return filter clogging alarm |
| Light, interior | Cat 3176C ATAAC 2300 m altitude capability diesel engine | Reverse swing damping valve |
| Literature compartment | Low emission/Low noise version | S•O•S quick sampling valves for engine and hydraulic oil |
| Low fuel indicator | Fire wall between pump compartment and engine | Stick drift reducing valve |
| Joysticks, adjustable pilot-operated | | SmartBoom™ |
| Prewired radio mounting (DIN) with mounting for two speakers, antenna | | Water separator in fuel line |
| Positive filtered ventilation | | Work mode selector |
| Seat belt, retractable (76 mm width) | | Undercarriage |
| Seat, KAB 524 (high back with head rest), suspension, four way adjustable (up-down, front-rear), adjustable arm rests | | Hydraulic track adjusters |
| | | Track-type sealed undercarriage |
| | | Idler and center section track guides |
| | | 600 mm, 14 mm thick section triple-grouser shoes |
| | | Towing eyes on base frame (front and rear) |

Optional Equipment

| | | |
|--|--|---|
| Automatic linkage lubrication system (includes all front end lube points and swing bearing) | Cyclone precleaner for extreme dust conditions | Sticks |
| Auxiliary hydraulics | Electric refueling pump with automatic shutoff | Mass Excavation sticks (for use with ME boom) |
| Single function (one way) control including 2-pump flow capability | Extreme cold weather configuration for -40°C operation | 3000 mm |
| Combined function (one way – two way) control including 2-pump flow | Grease lines for boom, stick for use with autolube and manual greasing | 2500 mm |
| Medium pressure auxiliary hydraulic circuit | Guards: | Reach sticks (for use with the Reach boom) |
| Two speed capability for single function control | FOGS (Falling Object Guarding System), including cab working lights | 3350 mm |
| Auxiliary hydraulic lines for boom and stick | Track guiding guard, two piece additional without center guard | 2900 mm |
| Bio oil factory fill (Caterpillar HEES), includes fine filtration for water and particle content | F/U/WLC Variable gauge undercarriage | Stick lowering check valve |
| Booms: | Hydraulic lines, auxiliary for reach boom and stick | Track |
| “M” Mass excavation 6.55 m (with side lights) | Hydraulic tank suction line shut off valve | Regular duty track shoes: 900 mm T.G. shoes, 15.5 mm thick section (including E.C. steps) |
| “R” Reach boom 6.95 m (with side lights) | Operator’s station | Heavy duty track shoes: 600 mm double grouser 15.5 mm cross section (including E.C. steps) |
| Buckets, see pages 15 and 18 | Seat KAB 524 with seat heater | 600 mm triple grouser 15.5 mm cross section (including E.C. steps) |
| Bucket linkage: | Rain protection for windshield, high impact and scratch resistant | 750 mm triple grouser 15.5 mm cross section (including E.C. steps) |
| T family | One piece fixed position high impact resistant front windshield | |
| U family | 3rd pedal, straight travel (right hand side) | |
| Bucket tips | Modulating pedal for tool actuation (left hand side) | |
| Counterweight (11000 kg) (must use heavy duty upper frame) for special applications | Starting aid, cold weather | |
| | Starting aid, ether | |

345B L Series II Hydraulic Excavator

HEHH2741-1 (08/2003) hr

Materials and specifications are subject to change without notice.
Featured machines in photos may include additional equipment.
See your Caterpillar dealer for available options.

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