

953C

Track Loader



Bucket Capacities

General Purpose	1.85 m ³	2.4 yd ³
Multi-purpose	1.6 m ³	2.1 yd ³

Operating Weight

G.P. Bucket + Teeth & Seg.	14 677 kg	32,363 lb
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Cat[®] 3116T Engine

Flywheel Power	90 kW	121 hp
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953C Track Loader

Unmatched versatility and state-of-the-art design in one machine allow you to maximize productivity.

Hydrostatic Drive, Electronically Controlled

Hydrostatic drive with electronic control offers modulated precision for quick, smooth operation and superior maneuverability. *Two drive system speed modes allow the best match to job conditions.* The Electronic Hydrostatic Control (EHC) is self-diagnosing and the two separate hydraulic drive pumps are easy to access for serviceability. **pg. 4**

953C Computerized Monitoring System

The Caterpillar Computerized Monitoring System (CMS) serves as the interface between the operator and the Electronic Hydrostatic Control (EHC) of the drive train. Through light indicators, gauges and a digital display, the CMS permits quick and simple calibration of the hydrostatic system and diagnostics of the power train and electrical systems. **pg. 7**

Greatest versatility.

The 953C works well in a wide range of applications. Excavating, clearing, backfilling, stripping top soil, landscape contouring, grading dozing, excavating, carrying material, and truck loading can all be accomplished with one machine.

Reliable, durable operation.

Rugged construction, self diagnosis of power train systems and easy maintenance ensure long life with low operating costs.

Engine

The Cat 3116 DIT engine is built for performance, durability, fuel economy, serviceability, and low emissions. **pg. 5**

Operator Station and Controls

The Caterpillar® C-Series Track Loader is designed for greater operator productivity. *Pilot-operated hydraulic controls for precise, consistent equipment control* — together with adjustable magnetic lift kickout and bucket positioner, help reduce operator fatigue. In the cab, reduced noise level, *adjustable armrests*, and Cat Contour Series seat improve operator comfort. Large, tinted windows, sun visor, *improved front wiper, and defrost capability* improve viewing of work areas. **pg. 6**



Structure

The box-section main frame is designed specifically for the work of a track loader. It provides durability, resistance to twisting and a solid base for all components. The Z-bar linkage offers increased breakout force and fast dump speed for enhanced productivity.

pg. 8

Oscillating Undercarriage

Improved traction, increased machine stability, and reduced frame impact are benefits of the Cat oscillating undercarriage. The Cat sealed and lubricated track reduces pin and internal bushing wear, reduces component friction and track noise, while extending track life. **pg. 9**

Work Tools and Special Application Attachments

A large choice of buckets, Ground Engaging Tools (G.E.T.), as well as various specific attachments, allow configuration of the 953C for maximum performance in virtually any job. In extreme or specialized applications, such as sanitary landfills, material handling, shiphold unloading, or low ground pressure applications, Cat can provide the needed attachments.

pg. 10-11

Complete Customer Support

The 953C design offers reduced maintenance, convenient access to components, easy diagnostic capabilities, as well as easy and economical component replacement possibilities. Cat Dealers also provide quick parts availability, preventative maintenance programs and flexible financing. **pg. 12**



✓ *New feature*

Hydrostatic Drive

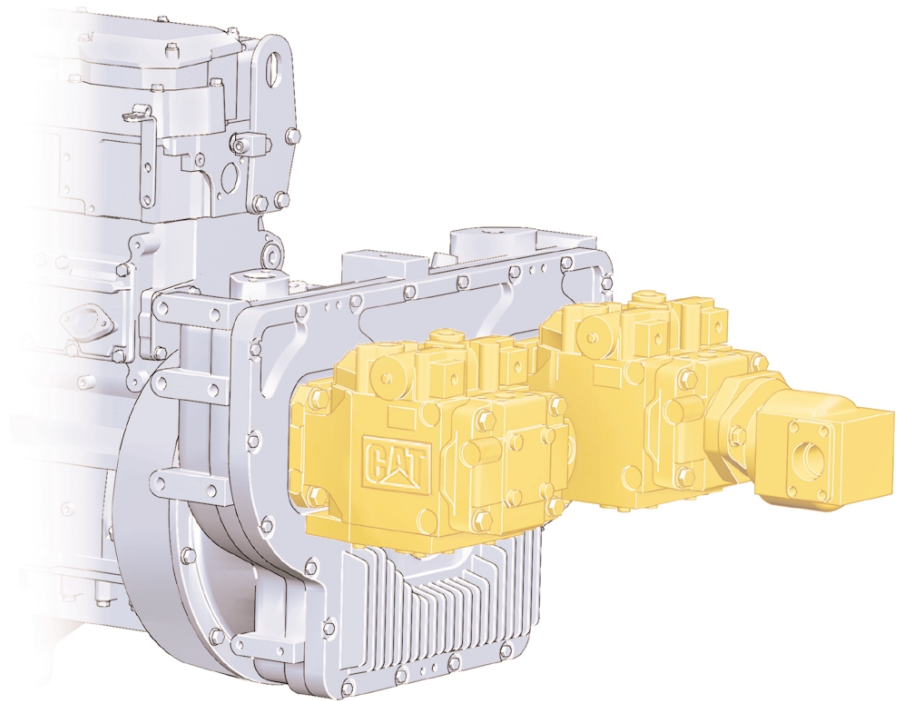
The electronically controlled hydrostatic drive helps provide quick response for shorter cycle times and increased productivity.

The Hydrostatic Drive eliminates the need for transmission shifting, which allows the operator to concentrate on working, maneuvering and production.

The Electronic Hydrostatic Control (EHC) controls the hydrostatic drive system.

- Electronic Hydrostatic Control automatically adjusts machine speed to give the equipment hydraulic system priority, while the hydrostatic system takes advantage of all available engine power.
- It maintains engine rpm in optimum operating range and balances the two track drive systems for straight travel without machine drift.
- The Electronic Hydrostatic Control interfaces with the Computerized Monitoring System. It is self-diagnosing, and fully compatible with Electronic Technician (ET) software. This software/hardware interface enables your Caterpillar dealer to quickly and accurately calibrate and troubleshoot a machine.

Variable displacement pumps and variable displacement drive motors are electronically controlled by EHC, offering high efficiency and precise operation.



Separate hydraulic pumps offer easy servicing. (Pumps are shown in yellow above.)

Independent power to each track for speed, maneuverability, or sideslope operation.

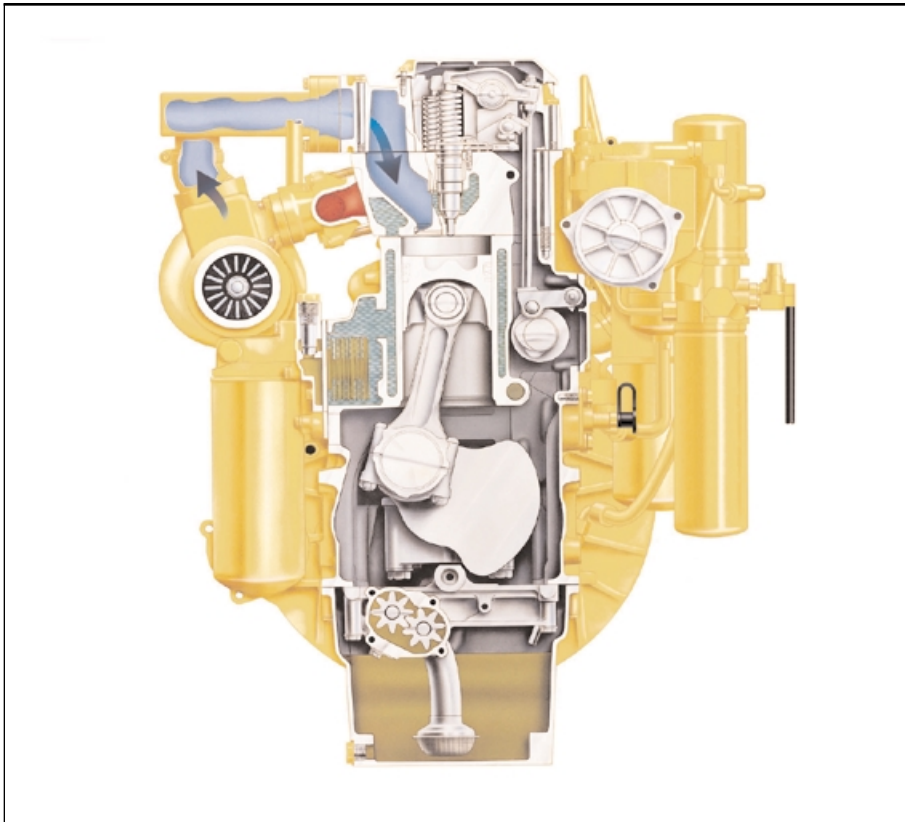
Power turns for added control, speed and versatility. The ability to turn under power gives greater productivity when dozing, grading, or backfilling.

Counter rotation allows spot turns in tight space conditions.

Travel speeds are infinitely variable between zero and top speed. The operator may select one of two operation modes. “Work mode” optimizes the torque characteristics of the power train for maximum productivity and is therefore the appropriate choice for most applications. An operator will choose “travel mode” to optimize the speed characteristics of the power train for applications requiring long travel distances.

Engine

Provides power, reliability and acts as a working counterweight in the rear of the machine, for optimum machine balance.



The Cat 3116 Diesel Engine is a six cylinder, four-cycle design that provides long, effective power strokes for high torque and more complete fuel combustion.

Rear engine location allows excellent forward viewing, while serving as a working counterweight. It also helps reduce maintenance by reducing radiator plugging and provides service access to the engine and other major components.

Direct-injection fuel system uses unit injectors at each cylinder.

- Design eliminates external high-pressure fuel lines, providing efficient, precise fuel delivery and timing.
- High-injection pressures and short injection duration provide fast response, clean burning and added fuel savings.
- Unit injectors can be serviced individually, without the need to service the whole fuel system.

Turbocharger packs more air in the cylinders for excellent combustion and increased engine efficiency.

Air inlet heater assists engine starting in low temperature conditions by warming the air supplied to the engine.

Extended life coolant, standard in the engine cooling system, reduces the need for maintenance.

Dual fuel filters with water separator element are used in-line to help ensure clean fuel, which maintains performance and protects the engine for increased life.

High displacement-to-power ratio provides extended engine life and exceptional reliability.

Extended life design.

- Seven main bearings provide a large bearing surface area to distribute force loads in the engine.
- Durable alloy steel valves.
- Lightweight roller cam followers for reduced frictional losses and cam wear.
- Easily replaceable crankcase seals.
- Two oil jets per cylinder cool each piston for reduced piston and ring temperatures, increasing the life of cylinders and pistons.
- A ribbed, one-piece cylinder block with a cast-in oil-cooler manifold, as well as internal fuel lines, eliminates many external lines, gaskets, and seals.

Operator Station and Controls

Designed for operator comfort and ease of operation.



- 1 Caterpillar Contour Series seat** is ergonomically designed and fully adjustable for maximum operator comfort and control — throughout the work day.
- Cushioned side bolsters reduce side-to-side movement.
 - Backrest centerline conforms to the operator's natural spinal curve.
 - Contoured base curves away from lower back to reduce pressure.
 - 76 mm (3 in) wide seat belt is retractable for positive, comfortable restraint.
 - Air suspension option is available for even greater operator comfort.

- 2 Adjustable armrests** can be positioned up or down. The right armrest is adjustable forward and backward. Each armrest can be inclined to different angles for excellent operator comfort and control.

- 3 Air circulation system** delivers filtered, pressurized and temperature-controlled air through 10 louvered vents. Integral air conditioning system is available. Heater with controls is standard on both cab and canopy-equipped machines.
- 4 Storage spaces** include a lockable storage box, a lunch box compartment, beverage holder, and coat hook.

Sound-suppressed cab with integral Rollover Protective Structure (ROPS)/Falling Objects Protective Structure (FOPS) is resiliently mounted for a quiet and comfortable working environment.

Enhanced viewing area to the front, sides and rear of the machine. Tinted windows, sun visor, washers and windshield wipers are all standard on cab machine. The front wiper has variable speed, intermittent control.

Radio installation arrangement, 24 to 12-volt converter, radio mounting space, and speakers are standard on cab-equipped machines.

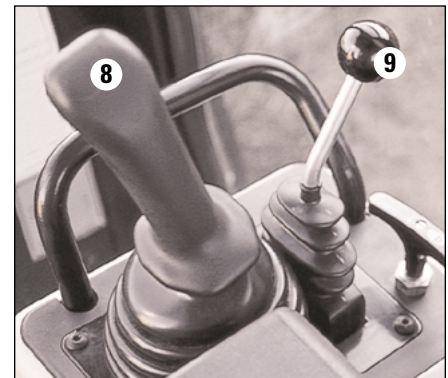
Easy, precise operation of hydrostatic drive system for quick speed and direction changes and maximum maneuverability.

- 5 Hydrostatic drive control** (see page 4).
- 6 Brake pedal** is supplementary to hydraulic braking provided by hydrostatic system.
- 7 Pedal steering** for precise control of each track independently and on-demand counter-rotation without need to stop machine.

Speed mode switch allows operator to choose between “work mode” for fine control or tight truckloading, or “travel mode” for maximum drive speed — to best match machine speed to job conditions (see page 7 for location).

Pilot operated equipment controls are easy to operate for greater productivity.

- 8 Single lever pilot control** for bucket lift and dump (2-lever control is optional).
- **Simultaneous bucket lift and dump** for fast controlled truck loading, smooth grading, and the ability to meter material from bucket.
 - **Automatic, adjustable magnetic lift kickout and bucket positioner** allow the operator to concentrate on positioning the machine rather than the bucket, resulting in higher efficiency for greater productivity.
- 9 Optional pilot-operated control for ripper or multi-purpose bucket.**



Computerized Monitoring System (CMS)

Quickly indicates servicing needs to reduce downtime and improve machine availability.



The Computerized Monitoring System offers three main functions:

- Quick and simple calibration of the hydrostatic drive system.
- Alerting the operator of particular situations can help prevent damage. For maximum reliability, an automatic self-test is performed by the system during every start.
- By monitoring hydrostatic and electrical systems, the CMS identifies component(s) affected and logs the abnormal values of measured parameters in memory to aid service personnel in troubleshooting and repairs.

1 The gauge cluster contains four gauges which monitor the following functions:

- Fuel level.
- Engine coolant temperature.
- Pump drive oil temperature.
- Hydraulic (equipment/power train) oil temperature.

2 The warning cluster groups the individual alert indicators of the following:

- Low fuel level.
- High engine coolant temperature.
- High pump drive oil temperature.
- High hydraulic oil temperature.
- Low engine oil pressure.
- Low hydrostatic system charge pressure.
- Low alternator output.
- Diagnostic fault detected by EHC (Electronic Hydrostatic Control).
- Air inlet heater activated.

3 The digital display can show the operator's choice of hour meter, engine rpm, charge pressure or service codes.

The Computerized Monitoring System offers three levels of warning:

- **Operator awareness.** An alert indicator signals a potential, non-critical situation.
- **Operator response required.** In addition to the alert indicator, the action warning light (4) flashes to indicate that continued operation could cause component damage.
- **Immediate safe shutdown.** An alert indicator illuminates, the action warning light flashes, and the action alarm sounds to alert the operator that continued operation will cause immediate component damage or a safety device malfunction.

5 Key start/stop switch

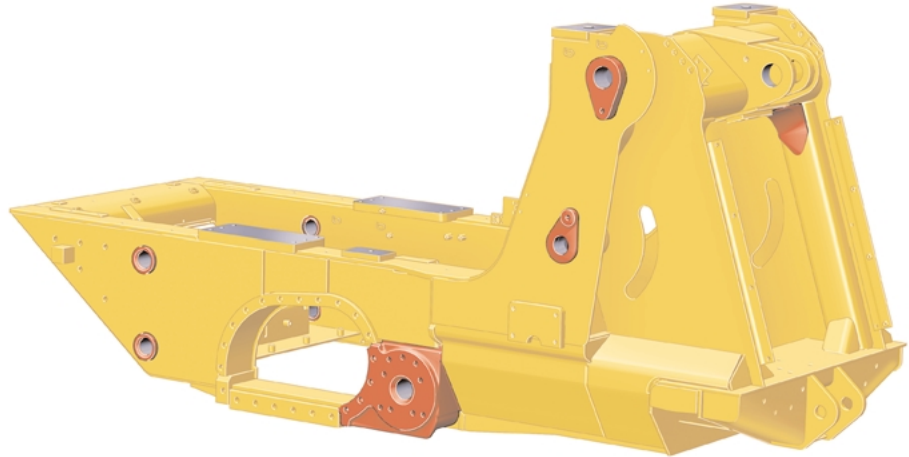
6 Speed mode switch (see page 6 for description).

Structure

Box-section main frame is designed to handle heavy loads, while Z-Bar linkage maximizes breakout force.

Strong box-section main frame design, with continuous, deep-penetration welds resists twisting loads to protect components from excessive wear or damage, without adding extra weight to the machine.

- **Four-plate loader tower** distributes forces evenly from the lift arms to the main frame, which eliminates twisting for maximum structural durability.
- **Castings** (in red on the illustration to the right) are used in areas of high stress concentration. Large radius curves dissipate stresses that could cause fatigue and cracking.
- **Mild-steel frame sections along with castings** provide flexibility, durability and excellent resistance to impact loads.
- **Durability designed and built into the structures** provides extended service life and allows for multiple rebuilds.



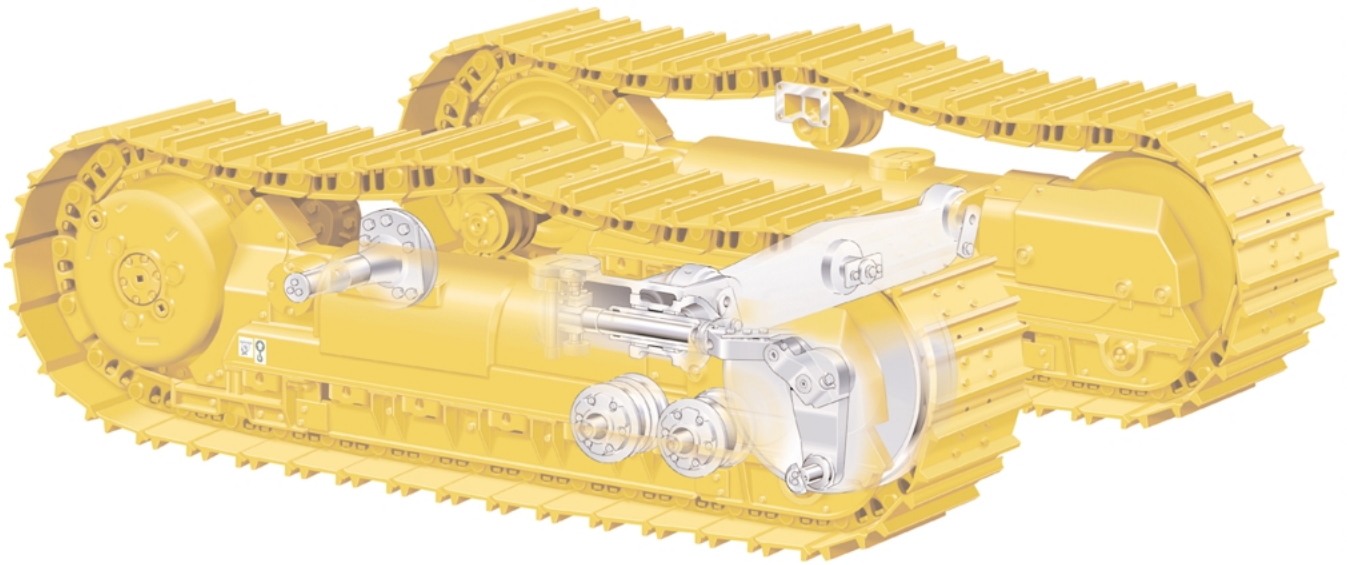
1 Z-bar linkage. Breakout force is exceptionally high due to the mechanical advantage of Z-Bar linkage design with hydraulic pressure applied to the head end of the tilt cylinder.

- **Dump speed is faster** because dump oil flows into tilt cylinder rod end.
- **Straddle mounting** supports all lift arm pivot points on both ends of the pin, eliminating twisting forces and enhancing structural durability.
- **Sealed loader linkages**, including low maintenance oil-lubricated lower bucket pins, substantially reduce maintenance time and lubrication requirements.
- **Linkage simplicity** reduces the number of parts and service points.



Oscillating Undercarriage

Keeps more track on the ground for maximum traction and stability. Several shoe options provide best match to job conditions.



Oscillating Undercarriage allows movement of each track independent of main frame.

- **Reduces frame impact** and improves traction over a rigid undercarriage design.
- **Increases stability** in rough terrain.

Swing link idler permits horizontal idler movement, absorbing shock loads and maintaining proper track tension, while eliminating the need for shims and wear strips.

Tracks are sealed and lubricated to keep abrasives out and virtually eliminate pin and internal bushing wear to keep maintenance costs down. These tracks also reduce component friction for less track noise and greater power train efficiency.

Bolt-on sprocket rim segments allow replacement of worn sprocket teeth without opening the track chain. Through-hardened steel forging provides extended service life.

Two-piece split master link allows easy track chain removal and installation.

Caterpillar brand undercarriage components are well-matched to each other and the machine for superior life and cost-effective operation.

Shoe options:

- 1 **Double grouser shoes**, standard, are designed for good traction, easy turns, and reduced bending.
 - 2 **Trapezoidal center hole shoes** let the sprocket push out dirt and debris, reducing packing between the shoe and the bushing.
 - 3 **Single grouser shoes** increase penetration and traction.
 - 4 **Cat rubber grouser shoes** are long-wearing shoes that protect paved surfaces from damage so your 953C can work both sides of the street more productively. Underneath the rubber on these shoes are standard 500 mm (20 in.) double grouser 953C steel track shoes.
- **Wider shoes** are also available to reduce ground pressure in soft underfoot conditions.

Other shoe options are available. Consult your Caterpillar Dealer for more information.

① Double Grouser Shoes



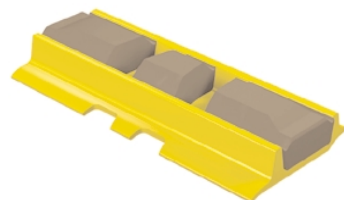
② Trapezoidal Center Hole Shoes



③ Single Grouser Shoes



④ Cat Rubber Grouser Shoes



Work Tools

A variety of attachments and Ground Engaging Tools (GET) are available to maximize performance in any application.



1 General Purpose (GP) bucket is designed for excellent loadability and long life in applications such as hard bank excavating, stripping, and stock pile loading.

- High-strength, low-alloy steel for resistance to dents and abrasions.

2 Multi-purpose (MP) buckets are designed for a broad range of applications, such as: loading, stripping, clearing, bulldozing, picking up debris, and fine grading.

- Bucket clamps hydraulically to grip logs or handle other tough-to-grasp materials.

3 Ripper-Scarifier adds extra versatility to expand the application of the machine.

- Hinged-type, with three shanks, beam mounted with two pins pressed into each side of main frame.
- Raised and lowered with two wide-mounted cylinders.
- Six pin linkage requires no lubrication.

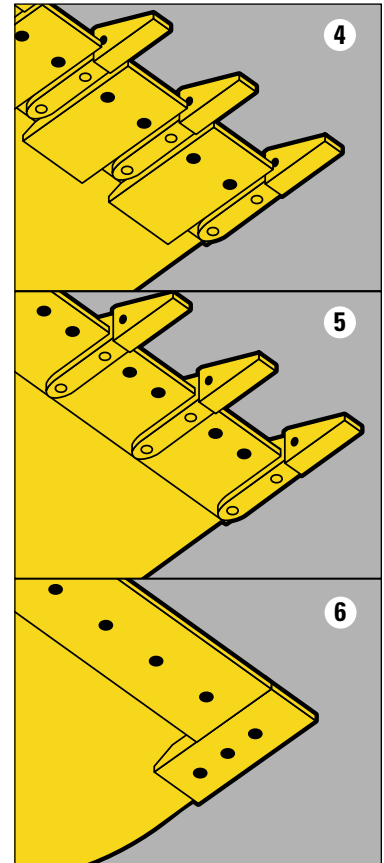
Bucket base edge protection options:

4 Bolt-on adapters, tips and bolt-on reversible edge segments provide good penetration as well as a clean working floor and increased bucket capacity.

5 Bolt-on, 2-strap adapters and tips, including corner adapters, offer excellent penetration.

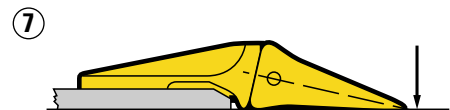
6 Bolt-on cutting edges, reversible, are ideal when penetration is not a consideration, such as in clean-up work or stockpiling applications.

7 Weld-on, top-strap adapters are also available with a GP bucket. They are flush-mounted with the bottom of the cutting edge to provide a smooth bucket bottom and unrutted work surface. These adapters can be used with any of the tip options (not with a bolt-on protection system).



Tip options:

- **Short:** extremely strong — use in high impact and pry-out work such as rock.
- **Long:** use in most general applications where breakage is not a concern.
- **Uniteeth:** one-piece teeth that bolt directly to the bucket, does not use replaceable tips.



These and other G.E.T. options are available from Caterpillar Dealers.

Special Application Attachments

Special attachments are available or can be designed on request to allow the 953C to work in special applications.



Waste handling attachments provide added versatility and are designed to make the 953C perform well in sanitary landfills, transfer stations and other waste handling applications where the machine spreads, compacts, sorts, shreds and crushes materials.

- **Bucket trash rack and side plates** increase bucket capacity. Increases productivity when handling low density material and protects machine linkage from debris.
- **Extensive guarding, various protections, and heavy-duty components** protect the machine from debris in severe waste handling conditions.
- **Easy servicing** is targeted in every component design such as the following features:
 - Heavy-duty radiator grill can swing out for quick access to maintain radiator.
 - Turbine pre-cleaner removes most particles from incoming air, extending air filter life.

Shiphold attachments allow the 953C to work in the confined and harsh shiphold environment where the machine assists in the off-loading of bulk materials, such as iron ore, steel scrap, coal, minerals and grain.

- **Lifting hooks, reinforced lift-arm and a locking group** ensure well-balanced and secured lifting of the machine into shipholds.
- **Heavy-duty rear bumper** provides extra protection to the radiator and rear of the machine.
- **Debris resistant radiator** provides wider spacing between cooling fins to reduce plugging and is reinforced to help protect against abrasive particles.
- **Track shoe options**, such as wider shoes for greater flotation or with trapezoidal center holes to prevent track packing.

Super Low Ground Pressure arrangement is designed for work in extremely soft underfoot conditions.

- For enhanced flotation and stability, the undercarriage is extended to the front of the machine and a track roller is added.
- Larger track shoes and wider gauge further increase the ground contact area for reduced ground pressure.
- Larger pitch track chain is also available.

Woods Guarding attachments provide guarding for forestry or clearing applications.

- **Full sweeps** protect front, top, and rear of machine.
- **360° coverage of screens** includes additional radiator guard.

Many other attachments are available. For other custom-designed arrangements for specific applications, consult your Caterpillar Dealer.

Complete Customer Support

Caterpillar's total commitment to customer support and simplified service is part of every Cat machine.

Reduced maintenance.

- Batteries are maintenance-free.
- Caterpillar Extended Life Coolant allows extended change intervals (6,000 hours).
- Sealed electrical connectors lock out dust and moisture.
- Cat sealed and lubricated tracks minimize pin and internal bushing wear and reduce maintenance costs.
- Caterpillar XT hydraulic hose, in medium and high pressure circuits, offers high abrasion resistance and far exceeds industry standards.
- O-Ring Face Seal (ORFS) hydraulic couplings help eliminate fluid leaks, provide positive coupling head seals and are reusable for low operating costs.
- Lower bucket pins are low-maintenance and oil-lubricated.
- S•O•S Fluids Analysis helps avoid unnecessary downtime and maintains the machine value.

Easy access to components.

- Hydraulic and fuel filters are located close to each other for easy maintenance.
- Rear engine location allows bucket-on-the-ground service checks and maintenance.
- Ground-level access to lubrication points.
- Hinged doors allow quick access to the engine, hydrostatic system along with the battery and tool boxes.

Easy diagnosis.

- The Computerized Monitoring System and self-diagnosing EHC work together to warn against both occurring and impending faults to reduce downtime.
- Rapid, easy calibration and troubleshooting of hydrostatic and electrical systems are performed through CMS and EHC systems.



- Electronic Technician (ET) software is fully compatible with the EHC and provides further diagnostic capabilities.
- Quick-disconnect hydraulic pressure taps allow quick diagnosis of the hydraulic system. More commonly used pressure taps are clustered inside the left engine door for easy access.

Easy component servicing.

- Removable cab floor-panel for easy access to internal components.
- Hydrostatic drive system with separate pumps and motors for low replacement or rebuild cost.
- Color-coded and numbered electrical wiring for easy repair.
- Split master link to easily open the track chain.
- Segmented drive sprocket for easy repair without splitting the track, as well as reduced replacement costs and less downtime.
- Caterpillar XT hydraulic hoses offer excellent flexibility for easy installation.
- Bolted grab irons are easily replaceable.

Low cost components replacement.

Caterpillar Remanufactured parts are available for economical component replacement. Many Remanufactured parts are available for use in the 953C engine and hydraulic system.

Preventive maintenance programs.

Ask a Cat Dealer for help with managing machine service.

Parts availability. Most Cat parts are immediately available from any Cat Dealer. Cat Dealers rely on a worldwide computer network to find parts instantly, minimizing machine downtime.

Flexible financing. Cat Dealers can arrange affordable financing for the entire Caterpillar line. Contact a Dealer to learn how terms can be structured to match cash flows.

Engine

Four-stroke cycle, six cylinder Caterpillar 3116 turbocharged diesel engine.

Ratings at 2200 rpm*	kW	hp
Gross power	99	133
Flywheel power	90	121

The following ratings apply at 2200 rpm when tested under the specified standard conditions for the specified standard:

Net power	kW	hp	PS
Caterpillar	90	121	—
ISO 9249	90	121	—
SAE J1349	90	121	—
EEC 80/1269	90	121	—
DIN 70020	—	—	126

Dimensions

Bore	105 mm	4.13 in
Stroke	127 mm	5.00 in
Displacement	6.6 liters	403 in ³

*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 derating required up to 2300 m (7550 ft) altitude

Features

- direct-injection fuel system with individual, adjustment-free unit injectors for each cylinder
- 3-ring aluminum-alloy pistons, cam-ground, tapered and cooled by oil spray
- steel-backed aluminum bearings
- tapered connecting rods
- pressure lubrication with full-flow filtered and cooled oil
- dry air cleaner with primary and secondary elements
- dual, in-line fuel filters and water separator
- induction-hardened, forged crankshaft
- direct-electric 24-volt starting and charging system with 12-volt, 100 amp-hour batteries
- Standard air inlet heater for starting down to -18°C (0°F)
- ether starting aid optional for starting between 0°C (+32°F) and -23°C (-10°F)
- standard oil cooler
- Cat premium, high output battery optional

- Meets construction equipment emissions certification around the world
 - U.S. Environmental Protection Agency (EPA)
 - European Union (EU)
 - Japan Ministry of Construction (JMOC)

Drive

Hydrostatic drive provides infinite machine speeds up to 10.0 km/h (6.2 mph), forward or reverse.

Features

- each track is driven by a separate hydraulic circuit consisting of one variable-displacement piston pump, connected by Caterpillar XT-6 hydraulic hose and couplings to a variable-displacement piston motor
- drive pumps: two variable-displacement, slipper-axial piston pumps driven from engine flywheel by single shaft and simple splitter box
- track motors: two variable-displacement, bi-directional link-type piston motors mounted inboard of main frame at the sprocket
- full flow filtering of hydrostatic drive system oil
- relief valve settings: 42 000 kPa/420 bar/6090 psi
- charging pump: one gear-type, supplies power to control system
- Electronic Hydrostatic Control (EHC) system controls each pump and motor for maximum machine performance
- Two speed modes to vary top speed electronically

Undercarriage

Two-piece master link for easy track removal and installation. All rollers and idlers have Duo-Cone Floating Ring Seals and are Lifetime Lubricated.

	Standard 380 mm (15") Shoe		Optional 500 mm (20") Shoe	
Track rollers (each side)	6		6	
Number of shoes (each side)	40		40	
Length of track on ground	2295 mm	90"	2295 mm	90"
Ground contact area	1.74 m ²	2704 in ²	2.29 m ²	3558 in ²
Ground pressure*	79.6 kPa	11.5 psi	60.5 kPa	8.8 psi
Grouser height (double grouser)	37.5 mm	1.48"	37.5 mm	1.48"
Gauge	1800 mm	71"	1800 mm	71"

*Super LGP arrangement available for lower ground pressure applications.

NOTE: Ground pressure is calculated using operating weight of machine with GP bucket, teeth and segments.

Equipment Hydraulics

Open-centered, interrupted series system with full-flow filtering. System is completely sealed. Pilot operated controls.

Equipment system, vane-type pump

Output at rated engine rpm and 6900 kPa (1000 psi)	130 liters/min	34.3 gpm
Relief valve setting (main) 1st level	21 400 kPa/214 bar	3103 psi
2nd level	24 000 kPa/240 bar	3480 psi
Cylinders, Lift, double acting: bore and stroke	120.65 x 711 mm	4.75 x 28"
Tilt, double acting: bore and stroke	139.75 x 478 mm	5.5 x 18.8"

Pilot system, gear-type pump

Output at rated engine rpm and 2400 kPa (348 psi)	110.0 liters/min	29.0 gpm
Relief valve setting	2400 kPa/24 bar	348 psi

Hydraulic cycle time

Raise	6.7 sec
Dump	1.4 sec
Lower, empty, float down	3.0 sec
Total*	9.7 sec

Bucket controls

Lift circuit (raise, hold, lower, float) automatic magnetic kickout in raise is adjustable to desired height

Tilt circuit (tilt-back, hold, dump) automatic magnetic bucket positioner - adjustable to desired digging angle

* With simultaneous raise and dump, dump time is included in the raise time.

Features

- large capacity vane-type pump mounted on hydrostatic pump drive housing
- pilot-operated control valves require little operator effort and reduce cylinder drift
- double-spool, spring-centered operating valves
- lines are steel tubing and high pressure XT-3 hose with flared fittings at connections
- system sealed to keep out wear-causing dirt
- protected by full-flow filter on return line, helping prevent foreign material from entering reservoir
- two relief valve settings for improved simultaneous lift and dump
- simultaneous lift and dump for fast truck loading and smooth grading

Brakes

Meets SAE standard J1026 APR90.

Service brake features

- hydrostatic, through machine drive system using transmission lever or center brake pedal

Secondary and Parking brake features

- oil-disc brakes located between each hydraulic track motor and final drive
- each set has 3 steel discs splined to final drive input pinion, and 4 friction discs splined to brake housing
- spring applied when transmission lever is in "brake-on" position or center brake pedal is fully depressed
- hydraulically released by oil pressure from hydrostatic control system
- spring applied automatically in the event of transmission hydraulic oil pressure loss

Lift Arms

Features

- solid-steel lift arms are straddle mounted to a fabricated single unit main frame
- integral loader tower features wide base, "A" frame profile
- straddle mounted pins are supported on both ends to eliminate twisting forces

Final Drives

Features

- planetary
- isolated from machine weight and ground-induced shock loads by track roller frame pivot shafts and oscillating undercarriage
- externally mounted for easy maintenance and service

Cab

Caterpillar cab and ROPS are standard in North America, Europe and Japan.

Features

- meets OSHA and MSHA limits for operator and sound exposure with doors and windows closed (according to ANSI/SAE J1166 MAY90)
- when equipped with sound-suppression attachment, meets the following operator and spectator dynamic sound requirements:

	dynamic dB(a)	
– operator	79	per ISO 6396, 95/27/EC
– spectator	109	per ISO 6395, 95/27/EC

- ROPS and FOPS meet the following criteria:
 - SAE J1040 (APR88)
 - SAE J395
 - ISO 3471 (1994)
 - SAE J231 JAN81
 - ISO 3449-1994
- operator compartment features a Computerized Monitoring System (CMS) to monitor important machine systems
- the CMS is self-diagnosing and easy to understand. It provides information modes to quickly localize mechanical or electrical problems

Ripper Specifications

Penetration (below face of shoe)	271 mm	10.7"
Ground clearance (under tip, from face of shoe)	523 mm	20.6"
Ripping width	1800 mm	70.9"
Cylinders (2):		
Bore	102 mm	4.02"
Stroke	270 mm	10.6"
Overall width/beam	1951 mm	76.8"

Features

- hinged-type with three-shank beam mounted with two pins pressed into each side of main frame
- raised and lowered with two wide-mounted cylinders
- six-pin linkage requires no lubrication

Service Refill Capacities

	L	Gallons
Fuel tank	234	62
Cooling system	25	6.6
Crankcase (with filter)	21	5.5
Final drives (each)	15	4
Component / power train hydraulics (including tank)	104	27.5
Hydraulic tank	65	17.2
Pump drive box	3.8	1

Electrical

Features

- wiring harnesses wrapped with braided, vinyl-coated nylon shielding for maximum protection
- connectors are self-sealing, yet still provide easy service access
- 24 to 12-volt converter standard in all cabs
- key start and stop

Track Roller Frames

Features

- roller frames use pinned equalizer bar and pivot shafts for limited oscillation
- equalizer bar is pinned to each roller frame and center of main frame to maintain a stable working platform
- rubber pads between equalizer bar and main frame dampen shocks
- roller frames are box-section with full-length welds

Steering

Features

- steering controlled by foot pedals
- partially depressing left or right pedal slows that track, causing machine to turn smoothly in that direction with full power to both tracks
- full pedal depression causes track to stop, then reverse for track counter-rotation
- spot turns within machine length

Operation Specifications

		General Purpose Bucket				Multi-purpose Bucket		
		Bare	Bolt-on adapters, tips & segments	Bolt-on cutting edge	Flush mounted, weld-on adapters & tips	Bare	Bolt-on adapters, tips & segments	Bolt-on cutting edge
Rated bucket capacity § (Nominal heaped)	m ³	1.75	1.85	1.85	1.75	1.5	1.6	1.6
	yd ³	2.25	2.4	2.4	2.25	2.0	2.1	2.1
Struck capacity §	m ³	1.45	1.55	1.55	1.45	1.25	1.35	1.35
	yd ³	1.9	2.0	2.0	1.9	1.6	1.8	1.8
Bucket width *	mm	2380	2380	2380	2380	2378	2378	2378
	in	94	94	94	94	94	94	94
Dump clearance at full lift and 45° discharge §	mm	2899	2706	2834	2732	2724	2655	2655
	in	114	106	111	107	107	105	105
Reach at 45° discharge angle and 2133 mm (84") clearance §	mm	1554	1563	1563	1457	1440	1363	1433
	in	61	62	62	57	57	54	56
Reach at full lift and 45° discharge	mm	1011	1051	1051	998	986	1019	1019
	in	39.8	41.4	41.4	39.3	38.8	40.1	40.1
Digging depth §	mm	107	132	132	107	157.5	182	182
	in	4.2	5.2	5.2	4.2	6.2	7.2	7.2
Overall machine length	mm	6055	6299	6154	6300	6212	6427	6284
	in	238	248	242	248	245	253	247
Overall operating height with bucket at full raise	mm	4869	4869	4869	4869	4860	4860	4860
	in	192	192	192	192	192	192	192
Static tipping load	kg	9931	9550	9672	9860	8844	8486	8602
	lb	21,898	21,058	21,327	21,737	19,501	18,712	18,967
Breakout force**	kN	121	108.7	109.7	122.6	95.1	86.4	86.9
	lb	27,225	24,457	24,682	27,585	21,397	19,440	19,552
Operating weight***	kg	14 452	14 677	14 574	14 512	15 057	15 279	15 179
	lb	31,867	32,363	32,136	31,999	33,201	33,690	33,470

* Bucket width with bolt-on cutting edge add 17 mm (.67"). For bolt-on teeth add 52 mm (2.0").

** Measured 100 mm (3.94") behind tip of cutting edge with bucket hinge pin as pivot point.

*** Includes coolant, lubricants, full fuel tank, ROPS cab, bucket and 75 kg/165 lb operator.

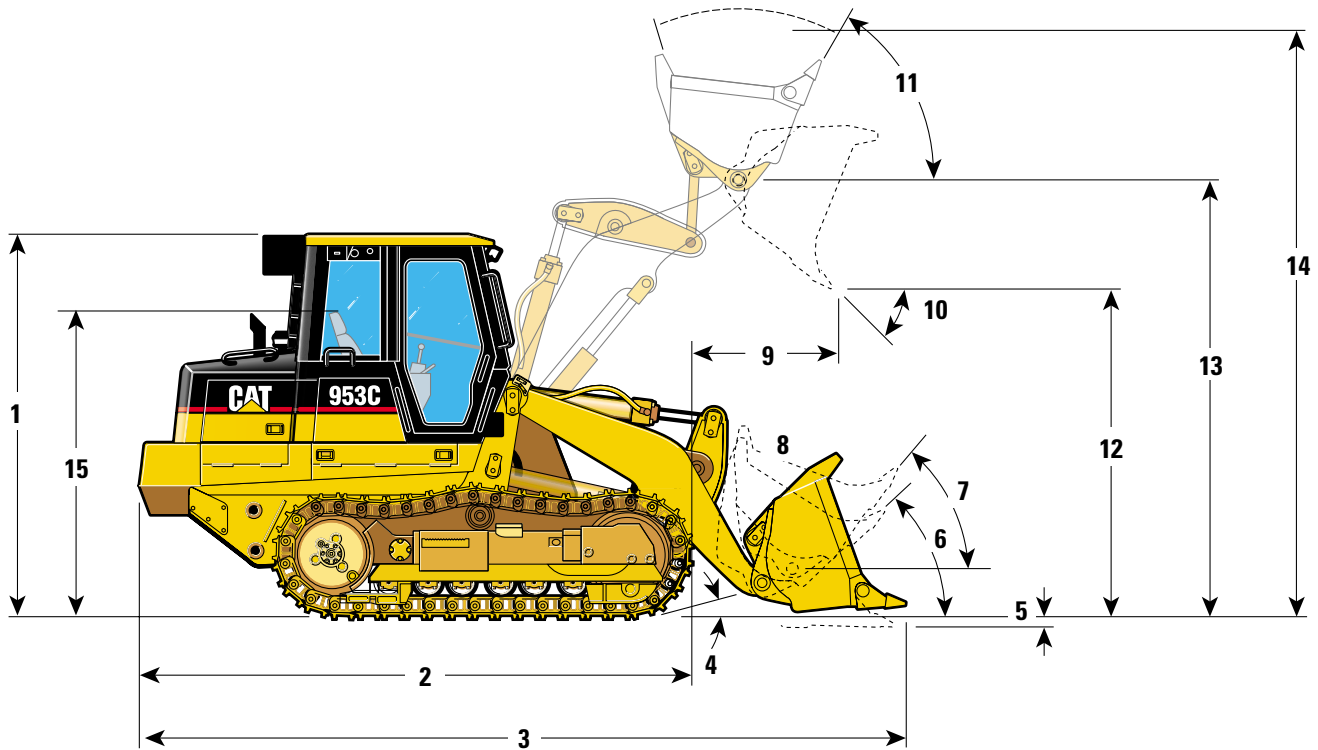
§ Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers. SAE Standard J732 FEB92 and SAE Standard J742 FEB85 govern loader ratings.

	Change In Operating Weight		Change In Static Tipping Load	
ROPS canopy only (cab removed)	-205 kg	-452 lb	-261 kg	-575 lb
Ripper with 3 shanks (bumper removed)	+67 kg	+148 lb	+106 kg	+234 lb
Air conditioner	+108 kg	+239 lb	+155 kg	+342 lb
Wide shoes 500 mm (20") double grouser	+291 kg	+642 lb	+189 kg	+417 lb
Rear bumper (removal)	-564 kg	-1243 lb	-1180 kg	-2601 lb

NOTE: Machine stability can be affected by the addition of attachments. Add or subtract the above to/from machine operating weight and static tipping load.

Dimensions

All dimensions are approximate.



Overall machine width without bucket:

with standard track – 380 mm (15" shoes)	2180 mm (85.8")
with wide track – 500 mm (20" shoes)	2300 mm (90.5")
Ground clearance	383 mm (15.1")
Grading angle	74°
1 Machine height to top of cab	3084 mm (121")
2 Length to front of track	4308 mm (170")
3 Overall machine length	◆
4 Carry position approach angle	15°
5 Digging depth	◆
6 Maximum rollback at ground	42°
7 Maximum rollback at carry position	48°
8 Bucket in carry position	—
9 Reach at full lift height	◆
10 S.A.E. specified dump angle	45° (56° max.)
11 Maximum rollback, fully raised	56°
12 Dump clearance at full lift height and 45° discharge	◆
13 Height to bucket hinge pin	3600 mm (142")
14 Overall machine height, bucket fully raised	◆
15 Height to top of exhaust stack	2441.2 mm (96")

◆ Dimensions vary with bucket. Refer to operating specifications chart on page 16.

Standard Equipment

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

Air inlet heater	Extended Life Coolant	Radio installation arrangement for 12-volt radio, with speakers, converter
Alternator (24-volt, 70-amp)	Floor mat	Retractable seat belt, 76 mm (3")
Armrests, adjustable	Front and rear retrieval hitches	Seat: Fabric-covered Cat Contour Series, suspended and adjustable
Ashtray, cigarette lighter (24-volt)	Fuel priming pump	Segmented sprocket rims
Automatic bucket positioner	Gauge package:	Single lever bucket control
Automatic lift kickout	- fuel level	Sprocket guards
Back up alarm	- engine coolant temperature	Storage compartments under armrests
Blower engine cooling fan	- hydraulic (equipment/power train) oil temperature	Tinted glass
Bumper (rear)	- pump drive box oil temperature	Track gauge 1.8 m (71")
Cab, sound suppressed with air pressurization, Rollover Protective Structure (ROPS) and Falling Objects Protective Structure (FOPS)	Heater/defroster with temperature control (also standard on canopy)	Track: Sealed and Lubricated, with 2-piece master link
Coat hook	Horn	Track shoes: 380 mm (15") double bar grouser
Control interlock	Hydraulic track adjuster	Track guiding guards, end sections
Controls (for equipment), single lever control, two-valve hydraulic, pilot operated	Lights (2), roof mounted, forward facing (halogen)	Two-valve equipment hydraulics
Crankcase guard	Literature compartment in seat back	Windshield and back window washers and wipers (variable intermittent front wiper)
24-volt direct electric starting motor	Maintenance free batteries	Vandalism protection: For use with cab, consists of lockable fuel tank cap with padlock, three padlocks to lock front service doors and radiator cap access door, and a ball valve to disconnect the control lever.
Electronic Hydrostatic Control (EHC)	Operator panel includes: Computerized Monitoring System, operator action system, start-stop key and hydrostatic information/hour meter display	
Engine: Caterpillar 3116T Diesel Engine, direct injection, turbocharged, net 121 hp	Pre-cleaner, air intake	
Engine air filter, radial seal	Rearview mirror, inside cab mounted	
Engine enclosure doors with locks	Radiator guard (heavy-duty, perforated)	

Optional Equipment

With approximate changes in operating weights.

	kg	lb		kg	lb
Air conditioner	108	239	Canopy, ROPS (cab removed) includes rearview mirror, 2 forward facing lights, heater, vinyl seat and vandalism protection consisting of cab vandalism package plus instrument panel guard group with padlock	-205	-452
Air suspended seat	10	22	Drawbar hitch	30	66
Antifreeze (for temperatures below -34°F / -37°C down to -58°F / -50°C)	—	—	Ether starting aid	2	4
Batteries, Cat Premium, high output	—	—	Guards, track roller	122	270
Buckets:			Guards, idler	75	165
General purpose 1.75 m ³ (2.25 yd ³)	922	2033	Hydraulic system:		
Multi-purpose 1.5 m ³ (2.0 yd ³)	1413	3115	3rd valve with or without lines for front or rear attachments	22	49
General purpose with flush-mounted adapters 1.75 m ³ (2.25 yd ³)	1036	2284	Diverter valve for use when both front and rear lines are required	10	22
Bucket control, two lever	—	—	Lighting systems (halogen):		
Bucket cutting edge, reversible, with end bits, sharpened, bolt-on for GP or MP buckets	122	269	4 lights, 2 forward with guards, 2 rear	13	28
Bucket bolt-on adapters and tips (J300) for GP or MP bucket, set of 8, includes corner adapters			Radiator (removal of standard):		
Long	138	304	Hi-ambient cooling arrangement	9	20
Short	137	302	Trash resistant	9	20
Bucket edge segments, bolt-on for GP or MP bucket	82	180	Ripper/scarifier – with three ripper shanks (bumper removed)	67	148
Bucket tips for use with flush adapters (on GP bucket), set of 8			Sound suppression attachment (spectator)	10	22
Long	35	77	Track shoes:		
Short	33	73	500 mm (20") double grouser	291	642
Bucket bolt-on uniteeth, set of 8, includes 2 corner teeth	119	262	500 mm (20") double grouser with rubber pad bonded in between grousers	615	1356
Bumper (removal)	-564	-1243			

NOTE: All weights were originally measured in kilograms. Pounds were converted from kilograms and rounded off.

953C Track Loader

AEHQ5050-03 (2-00)
(Replaces AEHQ5050-02)

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Featured machines may include additional equipment only for special applications.

See your authorized Caterpillar Dealer for available options.

Materials and specifications are subject to change without notice.

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