953C
Track Loader

Bucket Capacities

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Purpose</td>
<td>1.85 m³</td>
<td>2.4 yd³</td>
</tr>
<tr>
<td>Multi-purpose</td>
<td>1.6 m³</td>
<td>2.1 yd³</td>
</tr>
</tbody>
</table>

Operating Weight

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.P. Bucket + Teeth &amp; Seg.</td>
<td>14 677 kg 32,363 lb</td>
</tr>
</tbody>
</table>

Cat® 3116T Engine

<table>
<thead>
<tr>
<th>Flywheel Power</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 kW</td>
<td>121 hp</td>
</tr>
</tbody>
</table>
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.

Engine

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

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.

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.
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
The 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.
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.

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.

4 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.

- **Casting**s (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 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.
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 unrudded 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.
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.

Shiplhold attachments allow the 953C to work in the confined and harsh shiplhold 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 shiplholds.

- **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*

<table>
<thead>
<tr>
<th></th>
<th>kW</th>
<th>hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross power</td>
<td>99</td>
<td>133</td>
</tr>
<tr>
<td>Flywheel power</td>
<td>90</td>
<td>121</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>kW</th>
<th>hp</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caterpillar</td>
<td>90</td>
<td>121</td>
<td>—</td>
</tr>
<tr>
<td>ISO 9249</td>
<td>90</td>
<td>121</td>
<td>—</td>
</tr>
<tr>
<td>SAE J1349</td>
<td>90</td>
<td>121</td>
<td>—</td>
</tr>
<tr>
<td>EEC 80/1269</td>
<td>90</td>
<td>121</td>
<td>—</td>
</tr>
<tr>
<td>DIN 70020</td>
<td>—</td>
<td>—</td>
<td>126</td>
</tr>
</tbody>
</table>

### Dimensions

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore</td>
<td>105 mm</td>
<td>4.13 in</td>
</tr>
<tr>
<td>Stroke</td>
<td>127 mm</td>
<td>5.00 in</td>
</tr>
<tr>
<td>Displacement</td>
<td>6.6 liters</td>
<td>403 in³</td>
</tr>
</tbody>
</table>

*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

### 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.

<table>
<thead>
<tr>
<th></th>
<th>Standard 380 mm (15&quot;) Shoe</th>
<th>Optional 500 mm (20&quot;) Shoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track rollers (each side)</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Number of shoes (each side)</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Length of track on ground</td>
<td>2295 mm</td>
<td>90&quot;</td>
</tr>
<tr>
<td>Length of track on ground</td>
<td>2295 mm</td>
<td>90&quot;</td>
</tr>
<tr>
<td>Ground contact area</td>
<td>1.74 m²</td>
<td>2704 in²</td>
</tr>
<tr>
<td>Ground pressure*</td>
<td>79.6 kPa</td>
<td>11.5 psi</td>
</tr>
<tr>
<td>Grouser height (double grouser)</td>
<td>37.5 mm</td>
<td>37.5 mm</td>
</tr>
<tr>
<td>Gauge</td>
<td>1800 mm</td>
<td>71&quot;</td>
</tr>
</tbody>
</table>

*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.

### 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 (JMO)

### 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

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**Net power**

<table>
<thead>
<tr>
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<td>—</td>
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*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

**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.

<table>
<thead>
<tr>
<th>Equipment system, vane-type pump</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Output at rated engine rpm and 6900 kPa (1000 psi)</td>
<td>130 liters/min 34.3 gpm</td>
</tr>
<tr>
<td>Relief valve setting (main) 1st level</td>
<td>21 400 kPa/214 bar 3103 psi</td>
</tr>
<tr>
<td>2nd level</td>
<td>24 000 kPa/240 bar 3480 psi</td>
</tr>
<tr>
<td>Cylinders, Lift, double acting: bore and stroke</td>
<td>120.65 x 711 mm 4.75 x 28&quot;</td>
</tr>
<tr>
<td>Tilt, double acting: bore and stroke</td>
<td>139.75 x 478 mm 5.5 x 18.8&quot;</td>
</tr>
<tr>
<td>Pilot system, gear-type pump</td>
<td></td>
</tr>
<tr>
<td>Output at rated engine rpm and 2400 kPa (348 psi)</td>
<td>110.0 liters/min 29.0 gpm</td>
</tr>
<tr>
<td>Relief valve setting</td>
<td>2400 kPa/24 bar 348 psi</td>
</tr>
<tr>
<td>Hydraulic cycle time</td>
<td></td>
</tr>
<tr>
<td>Raise</td>
<td>6.7 sec</td>
</tr>
<tr>
<td>Dump</td>
<td>1.4 sec</td>
</tr>
<tr>
<td>Lower, empty, float down</td>
<td>3.0 sec</td>
</tr>
<tr>
<td>Total*</td>
<td>9.7 sec</td>
</tr>
<tr>
<td>Bucket controls</td>
<td></td>
</tr>
<tr>
<td>Lift circuit (raise, hold, lower, float) automatic magnetic kickout in raise is adjustable to desired height</td>
<td></td>
</tr>
<tr>
<td>Tilt circuit (tilt-back, hold, dump) automatic magnetic bucket positioner - adjustable to desired digging angle</td>
<td></td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>dynamic dB(a)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>operator</td>
<td>79 per ISO 6396, 95/27/EC</td>
</tr>
<tr>
<td>spectator</td>
<td>109 per ISO 6395, 95/27/EC</td>
</tr>
</tbody>
</table>
- 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**

| Component / power train hydraulics (including tank) | 104 | 27.5 |
| Fuel tank | 234 | 62 |
| Cooling system | 25 | 6.6 |
| Crankcase (with filter) | 21 | 5.5 |
| Final drives (each) | 15 | 4 |

**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

<table>
<thead>
<tr>
<th></th>
<th>General Purpose Bucket</th>
<th>Multi-purpose Bucket</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bare</td>
<td>Bolt-on adapters, tips &amp; segments</td>
</tr>
<tr>
<td>Rated bucket capacity § (Nominal heaped)</td>
<td>m³</td>
<td>1.75</td>
</tr>
<tr>
<td></td>
<td>yd³</td>
<td>2.25</td>
</tr>
<tr>
<td>Struck capacity §</td>
<td>m³</td>
<td>1.45</td>
</tr>
<tr>
<td></td>
<td>yd³</td>
<td>1.9</td>
</tr>
<tr>
<td>Bucket width *</td>
<td>mm</td>
<td>2380</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>94</td>
</tr>
<tr>
<td>Dump clearance at full lift and 45° discharge §</td>
<td>mm</td>
<td>2899</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>114</td>
</tr>
<tr>
<td>Reach at 45° discharge angle and 2133 mm (84&quot;) clearance §</td>
<td>mm</td>
<td>1554</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>61</td>
</tr>
<tr>
<td>Reach at full lift and 45° discharge</td>
<td>mm</td>
<td>1011</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>39.8</td>
</tr>
<tr>
<td>Digging depth §</td>
<td>mm</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>4.2</td>
</tr>
<tr>
<td>Overall machine length</td>
<td>mm</td>
<td>6055</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>238</td>
</tr>
<tr>
<td>Overall operating height with bucket at full raise</td>
<td>mm</td>
<td>4869</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>192</td>
</tr>
<tr>
<td>Static tipping load</td>
<td>kg</td>
<td>9931</td>
</tr>
<tr>
<td></td>
<td>lb</td>
<td>21,898</td>
</tr>
<tr>
<td>Breakout force**</td>
<td>kN</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>lb</td>
<td>27,225</td>
</tr>
<tr>
<td>Operating weight***</td>
<td>kg</td>
<td>14,452</td>
</tr>
<tr>
<td></td>
<td>lb</td>
<td>31,867</td>
</tr>
<tr>
<td>Change In Operating Weight</td>
<td>kg</td>
<td>-205</td>
</tr>
<tr>
<td></td>
<td>lb</td>
<td>-452</td>
</tr>
<tr>
<td>Change In Static Tipping Load</td>
<td>kg</td>
<td>-205</td>
</tr>
<tr>
<td></td>
<td>lb</td>
<td>-452</td>
</tr>
</tbody>
</table>

* 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.

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

With approximate changes in operating weights.

<table>
<thead>
<tr>
<th></th>
<th>kg</th>
<th>lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air conditioner</td>
<td>108</td>
<td>239</td>
</tr>
<tr>
<td>Air suspended seat</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Antifreeze (for temperatures below -34°F / -37°C down to -58°F / -50°C)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Batteries, Cat Premium, high output</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Buckets:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General purpose 1.75 m³ (2.25 yd³)</td>
<td>922</td>
<td>2033</td>
</tr>
<tr>
<td>Multi-purpose 1.5 m³ (2.0 yd³)</td>
<td>1413</td>
<td>3115</td>
</tr>
<tr>
<td>General purpose with flush-mounted adapters 1.75 m³ (2.25 yd³)</td>
<td>1036</td>
<td>2284</td>
</tr>
<tr>
<td>Bucket control, two lever</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Bucket cutting edge, reversible, with end bits, sharpened, bolt-on for GP or MP buckets</td>
<td>122</td>
<td>269</td>
</tr>
<tr>
<td><strong>Bucket bolt-on adapters and tips (J300) for GP or MP bucket, set of 8, includes corner adapters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>138</td>
<td>304</td>
</tr>
<tr>
<td>Short</td>
<td>137</td>
<td>302</td>
</tr>
<tr>
<td><strong>Bucket edge segments, bolt-on for GP or MP bucket</strong></td>
<td>82</td>
<td>180</td>
</tr>
<tr>
<td><strong>Bucket tips for use with flush adapters (on GP bucket), set of 8</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>35</td>
<td>77</td>
</tr>
<tr>
<td>Short</td>
<td>33</td>
<td>73</td>
</tr>
<tr>
<td><strong>Bucket bolt-on uniteeth, set of 8, includes 2 corner teeth</strong></td>
<td>119</td>
<td>262</td>
</tr>
<tr>
<td>Bumper (removal)</td>
<td>-564</td>
<td>-1243</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>kg</th>
<th>lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>-205</td>
<td>-452</td>
</tr>
<tr>
<td>Drawbar hitch</td>
<td>30</td>
<td>66</td>
</tr>
<tr>
<td>Ether starting aid</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Guards, track roller</td>
<td>122</td>
<td>270</td>
</tr>
<tr>
<td>Guards, idler</td>
<td>75</td>
<td>165</td>
</tr>
<tr>
<td><strong>Hydraulic system:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd valve with or without lines for front or rear attachments</td>
<td>22</td>
<td>49</td>
</tr>
<tr>
<td>Diverter valve for use when both front and rear lines are required</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td><strong>Lighting systems (halogen):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 lights, 2 forward with guards, 2 rear</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td><strong>Radiator (removal of standard):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi-ambient cooling arrangement</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Trash resistant</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td><strong>Ripper/scarifier – with three ripper shanks (bumper removed)</strong></td>
<td>67</td>
<td>148</td>
</tr>
<tr>
<td><strong>Sound suppression attachment (spectator)</strong></td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td><strong>Track shoes:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 mm (20&quot;) double grouser</td>
<td>291</td>
<td>642</td>
</tr>
<tr>
<td>500 mm (20&quot;) double grouser with rubber pad bonded in between grousers</td>
<td>615</td>
<td>1356</td>
</tr>
</tbody>
</table>
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.