## 621G, 623G, 627G
### Wheel Tractor-Scrapers

<table>
<thead>
<tr>
<th></th>
<th>621G</th>
<th>623G</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open Bowl Auger Elevator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cat® 3406E Net Power</td>
<td>246/272 kW (330/365 hp)</td>
<td>246/272 kW (330/365 hp)</td>
<td>246/272 kW (330/365 hp)</td>
</tr>
<tr>
<td>Cat® 3306 Net Power</td>
<td>—</td>
<td>—</td>
<td>168 kW (225 hp)</td>
</tr>
<tr>
<td>Heaped capacity, SAE rated</td>
<td>15.3 m³ (20 yd³)</td>
<td>15.3 m³ (20 yd³)</td>
<td>17.6 m³ (23 yd³)</td>
</tr>
<tr>
<td>Rated load</td>
<td>21 800 kg (48,000 lb)</td>
<td>21 800 kg (48,000 lb)</td>
<td>24 984 kg (55,000 lb)</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
**621G, 623G, 627G Scrapers**

*Highly productive earthmoving machines, built to last.*

<table>
<thead>
<tr>
<th><strong>Power Train</strong></th>
<th><strong>Cushion Hitch</strong></th>
<th><strong>Scraper Bowl</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronically controlled Caterpillar® engines and automatic planetary powershift transmissions are electronically integrated to provide maximum power to the cutting edge and exceptional haul road speed.</td>
<td>Electrically actuated hydraulic damper absorbs haul road shocks for increased operator comfort. <a href="#">pg. 5</a></td>
<td>Caterpillar Scraper bowls are designed to provide fast cycle times for high productivity. <a href="#">pg. 5</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Push-Pull Arrangement</strong></th>
<th><strong>Elevator Arrangement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Designed for maximum productivity while providing the flexibility for self-loading, push-pull loading or standard push loading. <a href="#">pg. 9</a></td>
<td>Provides true self-loading capability. Infinitely variable forward and reverse speeds match loading speed to material. Well suited for production as well as finish work. <a href="#">pg. 10</a></td>
</tr>
</tbody>
</table>
Serviceability & Complete Customer Support

Designed for easy maintenance and repair, the new G-Series machines are backed by total Caterpillar commitment to customer support. pgs. 12, 13

Operator Station

Convenient control placement and a comfortable work environment are keys to high productivity. Features include electro-hydraulic controls, a new air seat suspension and improved instrumentation. pg. 6

Auger Arrangement

Provides self-loading capability with the same wide material appetite as an open bowl machine. pg. 11

Enhanced Control Layout

Three implement levers have been combined into a simple and easy to operate joystick, enhancing the productivity of experienced and inexperienced operators alike. pg. 7

Open Bowl Arrangement

Provides aggressive material penetration for traditional push-loading applications. pg. 8
Power Train

*Proven components are electronically integrated to achieve new levels of performance and efficiency.*

**3406E Engine.** The six-cylinder, turbocharged, electronically controlled engine is built for power, reliability, and economy.

**Electronic Controls.** The Electronic Control Module (ECM) responds to operator commands and engine sensor input to optimize engine and machine performance.

**High Torque Rise.** Provides increased power in the cut.

**Dual Horsepower.** Provides increased power during operation of the auger or elevator mechanisms. It also provides increased power when the machine is operating in the higher gear ranges for enhanced haul road speed.

**Transmission.** Electronically controlled Caterpillar planetary powershift transmission with eight forward and one reverse speed. Gears one and two operate in converter drive for increased torque capability during the cut and fill. Gears three through eight operate in direct-drive for drive train efficiency during the haul. Reverse operates in converter drive.

**Electronic Control Throttle Shifting (CTS).** Automatically synchronizes engine speed to transmission speed during shifting to reduce power train stress and increase component life.

**Transmission Hold Switch.** Allows the operator to maintain converter drive in first and second gear for increased rimpull, or hold the current gear for enhanced control.

**Programmable Top Gear Selection.** Provides improved flexibility to match the hauling speed of the fleet to specific job site speeds.
Cushion Hitch
*Delivers a smoother ride for enhanced operator comfort.*

**Parallelogram-Type Linkage.** The electronically actuated cushion hitch incorporates a parallelogram-type linkage for exceptional strength.

**Nitrogen Accumulators.** Absorb and dampen road shocks.

**Lockout Switch.** Improves control of the cutting edge during loading and dumping.

Scraper Bowl
*Designed for optimum loading, material retention and ejection.*

**Low Profile Design.** Offers less resistance to incoming material which allows the load to build quickly.

**Bulldozer Ejection System.** Provides quick material ejection and reduced carry-back for increased productivity.

**Ground Engaging Tools.**
- Cutting edges are reversible to help provide long life. Different thicknesses are available for different applications. For optimal performance use the thinnest edge that provides satisfactory wear life and impact resistance.
- Optional teeth are available in several different configurations that can penetrate material better than a cutting edge without teeth.
Sound Suppression. Sound suppressed, rubber mounted ROPS cab reduces sound and vibration for comfort.

Steering Column. Redesigned to increase operator legroom by 11 percent.

Instrumentation: Quad Gauge Cluster. Provides fluid level and temperature information at a glance.

Electronic Speedometer/Tachometer provides actual gear indication readout.

Electronic Monitoring System (EMS II) monitors machine status and provides real time information to the operator.

Switch Console. Provides enhanced visibility and convenience by moving the less frequently used switches to the headliner.

Seat. The new Cat Comfort Cloth Seat offers improved comfort with a newly designed air seat suspension.

- Swivels and locks in four positions (0 to 30 degrees) to ensure proper orientation of the operator to the joystick.
- Fore/aft and vertical height adjustment to accommodate various sized operators.


Storage and Amenities. Convenient storage compartments include space for a lunch box and first aid kit. Also features a cup holder and ashtray.
Enhanced Control Layout

Features an electro-hydraulic implement control and electronic gear selector for increased operator efficiency.

**Joystick Control.** Simple and easy to operate, enhancing the productivity of operators of all skill levels. Requires 25 percent less force to control the critical scraper functions and requires 40 percent less stick movement than before.

**Transmission Control.** Simplifies gear selection and provides operator-defined top gear control.

**Joystick Functions.**
- Forward/Reverse - Bowl raise/lower and quick drop
- Left/Right - Ejector direction
- Thumb Rocker - Apron position (621G/627G only), Elevator speed and direction (623G only)

**Trigger Switch - Auger on/off (621G/627G only), Set elevator speed (623G only), Bail up/down (627G only)**
- Thumb Switches - Transmission hold and cushion hitch controls
Material Application. Well suited to handle a wide variety of material from clay to shot rock.

Push-Loading. To achieve maximum productivity, the 621G and 627G should be push loaded by either a D8R or D9R Track-Type Tractor.

Tandem Engine. Provides the ability to handle steep grades as well as all wheel drive to handle soft, slippery underfoot conditions.

Dual Horsepower. Provides increased horsepower during the haul which results in faster cycle times.
Push-Pull Arrangement (627G only)

Wide material appetite with high production capability.

**Material Application.** Well suited to handle a wide variety of material.

**Push-Loading.** Working together, push-pull scrapers combine to place over 1000 horsepower on a single cutting edge. Fast loading means short cycle times.

**Tandem Engine.** Provides the ability to handle steep grades as well as all wheel drive to handle soft, slippery underfoot conditions.

**Dual Horsepower.** Provides increased horsepower during the haul which results in faster cycle times.

**Maximum Productivity.** Push-pull scrapers can provide the lowest cost-per-yard for any scraper application.
Material Application. Work-alone capability makes it ideal for picking up windrows, soil mixing, as well as cleanup and production work. Conditions material which promotes compaction in the fill.

Elevator Mechanism. The elevator lifts material off of the cutting edge and carries it to the top of the load for true self-loading capability.

Single Pivot Design. Enhances material loading and improves the load profile to consistently achieve capacity loads.

Elevator. Infinitely variable speed elevator allows the operator to match the elevator speed to the material. High speed loading is available for normal conditions and windrows; low speed for tough materials.

Reverse Function. The elevator reverses for spreading top soil and unloading cohesive material and blending windrowed material.

Hydraulic Chain Adjuster simplifies chain adjustment which is critical to achieving long chain life.

Dual Horsepower. The dual horsepower provides increased horsepower to the elevator during loading and unloading for enhanced performance.
**Material Application.** Work alone capability with a wide material appetite ranging from overburden to laminated rock. Conditions material which promotes compaction in the fill and significantly reduces dust during loading.

**Auger Mechanism.** The auger lifts material off of the cutting edge and carries it to the top of the load for true self-loading capability. Material is distributed evenly throughout the bowl, resulting in consistent loads.

**Dual Horsepower.** Provides increased power to the auger for improved loading performance.

**Slip Limiter Switch.** Prevents rear wheel slip during loading.

**Apron.** Prevents material spillage and retains fine material far better than an elevating scraper.
Serviceability
Simplified service means more productive uptime.

**Service Points.** Service points for the engine are grouped on the right-hand side for easy access.

**Floor Rollers.** Sealed floor rollers eliminate lubrication.

**Hydraulic Chain Adjuster.** Easily adjusted using a grease gun, reducing service time and improving overall chain life.

**Wiring Harness.** Incorporates color-coded and numbered circuits for quick identification and simplified troubleshooting.

**Cantilever Wheels.** Provide greater parts commonality and ease of serviceability to the wheels and brakes.

**Electronic Monitoring System (EMS II).** Monitors machine status and provides real-time information to the operator including warnings of problems identified by the Electronic Control Modules.

**Convenient Diagnostic Connections.** Allow quick trouble-shooting using the Electronic Technician (ET) service tool. Cat Electronic Technician software running on a laptop computer provides enhanced diagnostic capability for troubleshooting. Electronic Technician also provides cylinder cut-out tests and other testing capabilities.
Complete Customer Support
Unmatched in the industry!

Parts Availability. Most Cat parts are immediately available from any dealer. Cat dealers rely on our worldwide computer network to find parts instantly and minimize machine downtime. Many components are economically available as Caterpillar Remanufactured Products.

Machine Management Services. Cat dealers help manage your equipment investment with:

- Effective preventive maintenance programs.
- Diagnostic programs such as Scheduled Oil Sampling (S•O•S) and Technical Analysis.
- Information to make the most cost-effective repair option decisions.
- Customer meetings; training for operators and mechanics.

Flexible Financing. Your dealer can arrange affordable financing for the entire Caterpillar product line. Talk to your dealer to learn how terms can be structured to meet your cash flow requirements.
Engines
All Caterpillar engines are built to excel in even the most demanding jobs.

621G/623G/627G Tractor
Four-stroke cycle, 6 cylinder 3406E turbocharged and aftercooled diesel engine.

**Features**
- fuel system (3406E) delivers fuel economy through mechanically actuated, electronically controlled unit injectors
- electronic control provides precise speed governing, active and logged diagnostic codes, cold start-up mode, low oil pressure warning/derate and high temperature warning/derate
- direct-injection fuel system (3306 — 627G Scraper engine) with individual adjustment-free injection pumps and valves
- integral inlet manifold porting with two intake and two exhaust valves per cylinder with valve rotators or 3406E and one intake and one exhaust valve per cylinder on 3306
- cam-ground and tapered aluminum-alloy pistons with three keystone-designed rings; cooled by oil spray
- steel-backed, copper-bonded, aluminum bearings, through-hardened crankshaft journals
- pressure lubricated with full-flow filtered and cooled oil
- dry-type air cleaner with primary and secondary elements
- 24-volt direct-electric starting system; 75-amp alternator with two 12-volt, 172 amp-hour batteries
- standard ether starting aid

**627G (Scraper only)**
Four-stroke cycle, 6 cylinder 3306 DITA turbocharged diesel engine.

**Ratings at 2200 rpm**

<table>
<thead>
<tr>
<th>kW</th>
<th>hp</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>185</td>
<td>246</td>
<td>—</td>
</tr>
<tr>
<td>168</td>
<td>225</td>
<td>—</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Net power</th>
<th>kW</th>
<th>hp</th>
<th>PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caterpillar</td>
<td>246/330/272</td>
<td>365</td>
<td>—</td>
</tr>
<tr>
<td>ISO 9249</td>
<td>246/330/272</td>
<td>365</td>
<td>—</td>
</tr>
<tr>
<td>EEC 80/1269</td>
<td>246/330/272</td>
<td>365</td>
<td>—</td>
</tr>
<tr>
<td>SAE J1349</td>
<td>244/327/270</td>
<td>361</td>
<td>—</td>
</tr>
<tr>
<td>DIN 70020</td>
<td>—</td>
<td>—</td>
<td>342/378</td>
</tr>
</tbody>
</table>

**Dimensions**

| Bore | 121 mm | 4.75 in |
| Stroke | 152 mm | 6.0 in |
| Displacement | 10.5 liters | 638 cu in |

*Power rating conditions*

- based on standard air conditions of 25°C (77°F) and 99 kPa (29.32 in Hg) dry barometer
- used 35° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 30°C (86°F) [ref. a fuel density of 838.9 g/L (7.001 lb/U.S. gal)]
- net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator
- no derating required up to 3350 m (11,000 ft) altitude
Transmission

Eight-speed automatic power shift.

<table>
<thead>
<tr>
<th>621G Maximum travel speeds (at normal shift points)</th>
<th>km/h</th>
<th>mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward 1</td>
<td>5.0</td>
<td>3.1</td>
</tr>
<tr>
<td>2</td>
<td>7.6</td>
<td>4.7</td>
</tr>
<tr>
<td>3</td>
<td>10.9</td>
<td>6.8</td>
</tr>
<tr>
<td>4</td>
<td>14.8</td>
<td>9.2</td>
</tr>
<tr>
<td>5</td>
<td>19.9</td>
<td>12.4</td>
</tr>
<tr>
<td>6</td>
<td>26.9</td>
<td>16.7</td>
</tr>
<tr>
<td>7</td>
<td>36.4</td>
<td>22.6</td>
</tr>
<tr>
<td>8</td>
<td>51.5</td>
<td>32.0</td>
</tr>
<tr>
<td>Reverse</td>
<td>9.2</td>
<td>5.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>623G Maximum travel speeds (at normal shift points)</th>
<th>km/h</th>
<th>mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward 1</td>
<td>5.0</td>
<td>3.1</td>
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</tr>
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<td>4</td>
<td>14.8</td>
<td>9.2</td>
</tr>
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<td>19.9</td>
<td>12.4</td>
</tr>
<tr>
<td>6</td>
<td>26.9</td>
<td>16.7</td>
</tr>
<tr>
<td>7</td>
<td>36.4</td>
<td>22.6</td>
</tr>
<tr>
<td>8</td>
<td>51.5</td>
<td>32.0</td>
</tr>
<tr>
<td>Reverse</td>
<td>8.9</td>
<td>5.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>627G Maximum travel speeds (at normal shift points)</th>
<th>km/h</th>
<th>mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward 1</td>
<td>5.0</td>
<td>3.1</td>
</tr>
<tr>
<td>2</td>
<td>7.6</td>
<td>4.7</td>
</tr>
<tr>
<td>3</td>
<td>10.9</td>
<td>6.8</td>
</tr>
<tr>
<td>4</td>
<td>14.8</td>
<td>9.2</td>
</tr>
<tr>
<td>5</td>
<td>19.9</td>
<td>12.4</td>
</tr>
<tr>
<td>6</td>
<td>26.9</td>
<td>16.7</td>
</tr>
<tr>
<td>7</td>
<td>36.4</td>
<td>22.6</td>
</tr>
<tr>
<td>8</td>
<td>51.5</td>
<td>32.0</td>
</tr>
<tr>
<td>Reverse</td>
<td>8.9</td>
<td>5.4</td>
</tr>
</tbody>
</table>

Steering

Full hydraulic power steering.

<table>
<thead>
<tr>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width required for curb-to-curb</td>
</tr>
<tr>
<td>180° turn</td>
</tr>
<tr>
<td>Steering angle:</td>
</tr>
<tr>
<td>right</td>
</tr>
<tr>
<td>left</td>
</tr>
</tbody>
</table>

Features

- two double-acting hydraulic cylinders
- hydraulic follow-up system for automotive feel
- optional supplemental steering system meets SAE J1511 (OCT90) and ISO 5010 (1992) requirements

Tractor Features

- single-lever shift control
- torque converter multiplies torque in first, second and reverse
- third through eighth gears are direct drive
- all shifts up or down from second to top gear selected are automatic
- push-button switch on the implement joystick holds transmission in any gear
- microprocessor monitors output shaft speed and can override control to shift up or down one gear to ensure proper engine rpm
- Mac 14 Transmission Control
- latching diagnostics, neutral coast inhibitor and top gear control
- Individual Clutch Modulation (ICM) for fast, smooth shifts and improved serviceability

ClickListener

 evacuation diagnostics, neutral coast inhibitor and top gear control
- Individual Clutch Modulation (ICM) for fast, smooth shifts and improved serviceability

Scraper Features (627G only)

- planetary-type, full torque converter drive with four ranges
- shifting is synchronized to tractor transmission by Mac 14 controllers
**Cushion Hitch and Gooseneck (621G/627G)**

Parallelogram-type linkage connects two-piece hitch.

**Features**
- Vertically mounted hydraulic cylinder transfers road shocks to nitrogen accumulators
- Controlled oil flow dampens rebound oscillation
- Leveling valve automatically centers piston in cylinder for all scraper loads
- Cushion ride lock down control for positive cutting-edge down pressure when loading or spreading
- Cushion hitch makes extensive use of steel castings, eliminating many welded joints and adding strength
- Double-kingbolt design withstands high external forces, allows easy installation and removal
- Box-section gooseneck reduces plate and weld stresses

**Brakes**

Meet the following standards: OSHA, MSHA, ISO 3450: 1998.

**Service brake features**
- Air-applied, spring-released
- Cam-operated, expanding-shoe type

**Parking brake features**
- Uses service brakes which are spring-applied, air-released
- Manually applied park brake switch can be applied with button on dash

**Secondary brake features**
- Uses single axle service brakes which are air-applied, spring-released
- Automatically applied if service air pressure drops to 380 kPa (55 psi)
- Audible and visual action alert indicators inform operator when service air pressure drops to 518 kPa (75 psi)

**Cab**

Caterpillar cab and Rollover Protective Structure (ROPS) are standard in North America, Europe and Japan.

**Features**
- Meets OSHA and MSHA limits for operator sound exposure with doors and windows closed (according to ANSI/SAE J1166 MAY90)
- ROPS meets the following criteria:
  - SAE J320a
  - SAE J1040 MAY94
- Also meets the following criteria for Falling Objects Protective Structure:
  - SAE J231 JAN81
  - ISO 3449-1992

**Note:**
When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 MAY90, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture. The operator sound pressure level is less than 81 dB(A) when measured per ISO 6394 or 86/662/EEC.
Elevator (623G only)

Infinitely variable, forward and reverse, to a loaded maximum of 82 m/min (268 fpm).

- Length (overall) 3730 mm 12'3"
- Width of flight face 217 mm 8.5"
- Length of flights 2260 mm 7'5"
- Spacing of flights 510 mm 20"
- Number of flights 15

Features
- single pivot linkage on elevator frame
- hydraulic chain adjuster
- hydraulically driven through 48.4:1 planetary gear reduction box
- split construction drive sprockets
- adjustable chain with heat-treated rollers, pins and links

Controls
- Single point joystick control.
  - bowl — raise, hold, lower and quick drop
  - ejector — dump, hold, return and electronic detented return
  - elevator — infinitely variable forward and reverse (623G only)
  - apron — raise, hold, lower and float (621G, 627G)

Weights

<table>
<thead>
<tr>
<th>Model</th>
<th>621G*</th>
<th>623G</th>
<th>627G*</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std.</td>
<td>Push</td>
<td>Std.</td>
<td>Push</td>
</tr>
<tr>
<td>Shipping, with ROPS cab and 10% fuel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractor</td>
<td>69%</td>
<td>65%</td>
<td>59%</td>
<td>61%</td>
</tr>
<tr>
<td></td>
<td>21,833 kg 48,133 lb</td>
<td>23,735 kg 52,328 lb</td>
<td>21,532 kg 47,470 lb</td>
<td>22,894 kg 50,473 lb</td>
</tr>
<tr>
<td>Scraper</td>
<td>31%</td>
<td>35%</td>
<td>41%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>9,809 kg 21,625 lb</td>
<td>12,781 kg 28,176 lb</td>
<td>14,963 kg 32,988 lb</td>
<td>14,637 kg 32,270 lb</td>
</tr>
<tr>
<td>Total 100%</td>
<td>31,642 kg 69,758 lb</td>
<td>36,516 kg 80,504 lb</td>
<td>36,495 kg 80,458 lb</td>
<td>37,532 kg 82,743 lb</td>
</tr>
</tbody>
</table>

Operating empty, with ROPS cab, full fuel tanks and operator

<table>
<thead>
<tr>
<th></th>
<th>Std.</th>
<th>Push</th>
<th>Std.</th>
<th>Push</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front axle</td>
<td>68%</td>
<td>64%</td>
<td>59%</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>21,968 kg 48,341 lb</td>
<td>23,795 kg 52,460 lb</td>
<td>21,888 kg 48,256 lb</td>
<td>23,020 kg 50,750 lb</td>
</tr>
<tr>
<td>Rear axle</td>
<td>32%</td>
<td>36%</td>
<td>41%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>10,319 kg 22,749 lb</td>
<td>13,327 kg 29,380 lb</td>
<td>15,211 kg 33,534 lb</td>
<td>15,114 kg 33,320 lb</td>
</tr>
<tr>
<td>Total 100%</td>
<td>32,247 kg 71,090 lb</td>
<td>37,122 kg 81,840 lb</td>
<td>37,099 kg 81,790 lb</td>
<td>38,136 kg 84,075 lb</td>
</tr>
</tbody>
</table>

Loaded, based on a rated load of:

<table>
<thead>
<tr>
<th></th>
<th>Std.</th>
<th>Push</th>
<th>Std.</th>
<th>Push</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front axle</td>
<td>53%</td>
<td>50%</td>
<td>48%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>28,630 kg 63,118 lb</td>
<td>30,901 kg 68,125 lb</td>
<td>28,258 kg 62,299 lb</td>
<td>29,355 kg 64,717 lb</td>
</tr>
<tr>
<td>Rear axle</td>
<td>47%</td>
<td>50%</td>
<td>52%</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td>25,388 kg 55,972 lb</td>
<td>30,901 kg 68,125 lb</td>
<td>30,613 kg 67,491 lb</td>
<td>30,553 kg 67,358 lb</td>
</tr>
<tr>
<td>Total 100%</td>
<td>54,018 kg 119,090 lb</td>
<td>61,802 kg 136,250 lb</td>
<td>58,871 kg 129,790 lb</td>
<td>59,908 kg 132,075 lb</td>
</tr>
</tbody>
</table>

*Auger adds approximately 4536 kg (10,000 lb) to total weight.
Hydraulics
Closed, full-flow filtered hydraulic circuits powered by vane-type and piston-type pumps.

<table>
<thead>
<tr>
<th>Model</th>
<th>621G</th>
<th>623G</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Double acting bowl cylinders (2)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions:</td>
<td>bore</td>
<td>152 mm</td>
<td>152 mm</td>
</tr>
<tr>
<td></td>
<td>stroke</td>
<td>813 mm</td>
<td>508 mm</td>
</tr>
<tr>
<td><strong>Double acting apron (floor on 623G) cylinder (1)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions:</td>
<td>bore</td>
<td>184 mm</td>
<td>152 mm</td>
</tr>
<tr>
<td></td>
<td>stroke</td>
<td>600 mm</td>
<td>1353 mm</td>
</tr>
<tr>
<td><strong>Double acting ejector cylinder (1)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions:</td>
<td>bore</td>
<td>165 mm</td>
<td>127 mm</td>
</tr>
<tr>
<td></td>
<td>stroke</td>
<td>1549 mm</td>
<td>1213 mm</td>
</tr>
<tr>
<td>Steering circuit at 1800 rpm</td>
<td>197 liter/min</td>
<td>213 liter/min</td>
<td>197 liter/min</td>
</tr>
<tr>
<td>Scraper circuit (elevator on 623G) at 1800 rpm</td>
<td>284 liter/min</td>
<td>240 liter/min</td>
<td>284 liter/min</td>
</tr>
<tr>
<td>Cushion hitch circuit at 1800 rpm</td>
<td>35.5 liter/min</td>
<td>32.5 liter/min</td>
<td>34 liter/min</td>
</tr>
<tr>
<td>Optional supplemental steering circuit at 24 km/h (14.9 mph)</td>
<td>150 liter/min</td>
<td>150 liter/min</td>
<td>150 liter/min</td>
</tr>
<tr>
<td>Relief valve settings for:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering circuit</td>
<td>15 500 kPa</td>
<td>15 500 kPa</td>
<td>15 500 kPa</td>
</tr>
<tr>
<td>Implement circuit</td>
<td>14 800 kPa</td>
<td>17 237 kPa</td>
<td>14 800 kPa</td>
</tr>
<tr>
<td>Compensator settings for:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cushion hitch circuit</td>
<td>15 859 kPa</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Elevator circuit</td>
<td>36 199 kPa</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
Dimensions
All dimensions are approximate.

### Dimensions Table

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Model 621G</th>
<th>Model 623G</th>
<th>Model 627G</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Overall machine width</td>
<td>3467 mm 11'5&quot;</td>
<td>3556 mm 11'8&quot;</td>
<td>3467 mm 11'5&quot;</td>
</tr>
<tr>
<td>B Cab width</td>
<td>3130 mm 10'4&quot;</td>
<td>3130 mm 10'4&quot;</td>
<td>3130 mm 10'4&quot;</td>
</tr>
<tr>
<td>C Width to center of rear tires</td>
<td>2200 mm 7'3&quot;</td>
<td>2200 mm 7'3&quot;</td>
<td>2200 mm 7'3&quot;</td>
</tr>
<tr>
<td>D Width to inside of bowl</td>
<td>2946 mm 9'8&quot;</td>
<td>2946 mm 9'8&quot;</td>
<td>2946 mm 9'8&quot;</td>
</tr>
<tr>
<td>E Width to outside of tires</td>
<td>3048 mm 10'0&quot;</td>
<td>3048 mm 10'0&quot;</td>
<td>3048 mm 10'0&quot;</td>
</tr>
<tr>
<td>F Overall shipping height</td>
<td>3705 mm 12'2&quot;</td>
<td>3708 mm 12'2&quot;</td>
<td>3705 mm 12'2&quot;</td>
</tr>
<tr>
<td>G Height to top of cab</td>
<td>3423 mm 11'3&quot;</td>
<td>3423 mm 11'3&quot;</td>
<td>3423 mm 11'3&quot;</td>
</tr>
<tr>
<td>H Tractor ground clearance</td>
<td>553 mm 1'10&quot;</td>
<td>553 mm 1'10&quot;</td>
<td>553 mm 1'10&quot;</td>
</tr>
<tr>
<td>I Length to front of machine from front axle</td>
<td>3058 mm 10'1&quot;</td>
<td>3058 mm 10'1&quot;</td>
<td>3058 mm 10'1&quot;</td>
</tr>
<tr>
<td>J Width from center of rim to outside of rim</td>
<td>432 mm 1'6&quot;</td>
<td>432 mm 1'6&quot;</td>
<td>432 mm 1'6&quot;</td>
</tr>
<tr>
<td>K Maximum scraper blade height</td>
<td>522 mm 1'9&quot;</td>
<td>380 mm 1'3&quot;</td>
<td>522 mm 1'9&quot;</td>
</tr>
<tr>
<td>L Wheelbase</td>
<td>7722 mm 25'5&quot;</td>
<td>7976 mm 26'3&quot;</td>
<td>7722 mm 25'5&quot;</td>
</tr>
<tr>
<td>M Overall machine length</td>
<td>12 917 mm 42'5&quot;</td>
<td>13 209 mm 43'5&quot;</td>
<td>12 917 mm 42'5&quot;</td>
</tr>
<tr>
<td>N Length to rear of machine from rear axle</td>
<td>2142 mm 7'1&quot;</td>
<td>2176 mm 7'2&quot;</td>
<td>2142 mm 7'1&quot;</td>
</tr>
<tr>
<td>O Maximum bail length for push-pull (627G only)</td>
<td>—</td>
<td>—</td>
<td>1612 mm 5'4&quot;</td>
</tr>
<tr>
<td>P Extended push block (627G only)</td>
<td>—</td>
<td>—</td>
<td>2786 mm 9'2&quot;</td>
</tr>
</tbody>
</table>
Scrapers

Specifcations

Scaper Bowl
High-carbon steel, box construction.

<table>
<thead>
<tr>
<th>Model</th>
<th>621G</th>
<th>623G</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum depth of cut</td>
<td>333 mm 13.1&quot;</td>
<td>330 mm 13&quot;</td>
<td>333 mm 13.1&quot;</td>
</tr>
<tr>
<td>Width of cut, outside router bits</td>
<td>3023 mm 9'11&quot;</td>
<td>3150 mm 10'4&quot;</td>
<td>3023 mm 9'11&quot;</td>
</tr>
<tr>
<td>Maximum rated load</td>
<td>21 800 kg 48,000 lb</td>
<td>24 948 kg 55,000 lb</td>
<td>21 800 kg 48,000 lb</td>
</tr>
<tr>
<td>Heaped, SAE rating</td>
<td>15.3 m³ 20 yd³</td>
<td>17.6 m³ 23 yd³</td>
<td>15.3 m³ 20 yd³</td>
</tr>
<tr>
<td>Struck, SAE rating</td>
<td>10.7 m³ 14 yd³</td>
<td>13.8 m³ 18 yd³</td>
<td>10.7 m³ 14 yd³</td>
</tr>
<tr>
<td>Maximum ground clearance (cutting edge)</td>
<td>522 mm 18&quot;</td>
<td>387 mm 15.25&quot;</td>
<td>522 mm 18&quot;</td>
</tr>
</tbody>
</table>

Cutting edge dimensions:

| Center section | 22 x 406 x 1430 mm | 22 x 406 x 1529 mm | 22 x 406 x 1430 mm |
| End section | .86 x 16 x 56.3" | .86 x 16 x 60.1" | .86 x 16 x 56.3" |

| Thickness of optional cutting edge | 29 mm 1.14" | 35 mm 1.38" | 29 mm 1.14" |

Maximum available hydraulic penetration force at cutting edge (empty) | 150.4 kN 33,840 lb | 150 kN 33,750 lb | 215 kN 48,375 lb |

Maximum depth of spread | 522 mm 20.6" | 380 mm 15" | 522 mm 20.6" |

Apron opening with bowl | 1780 mm 70" | — | — |

Apron opening with bowl | 1780 mm 70" | — | — |

| Apron closure force, cutting edge fully raised and apron opened 300 mm (12 in) | 107 kN 24,075 lb | — | — |

| Apron closure force, cutting edge fully raised and apron opened 300 mm (12 in) | 107 kN 24,075 lb | — | — |

Service Refill Capacities

<table>
<thead>
<tr>
<th>Model</th>
<th>621G</th>
<th>623G</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>606 160</td>
<td>606 160</td>
<td>—</td>
</tr>
<tr>
<td>Crankcase</td>
<td>36 9.5</td>
<td>36 9.5</td>
<td>36 9.5</td>
</tr>
<tr>
<td>Transmission</td>
<td>72 19</td>
<td>72 19</td>
<td>72 19</td>
</tr>
<tr>
<td>Differential</td>
<td>144 38</td>
<td>144 38</td>
<td>144 38</td>
</tr>
<tr>
<td>Final drive, each side</td>
<td>19 5</td>
<td>19 5</td>
<td>19 5</td>
</tr>
<tr>
<td>Cooling system</td>
<td>107 28</td>
<td>107 28</td>
<td>107 28</td>
</tr>
<tr>
<td>Hydraulic reservoir</td>
<td>140 37</td>
<td>140 37</td>
<td>140 37</td>
</tr>
<tr>
<td>Wheel coolant, each</td>
<td>45 12</td>
<td>45 12</td>
<td>45 12</td>
</tr>
<tr>
<td>Windshield washer</td>
<td>6 1.5</td>
<td>6 1.5</td>
<td>6 1.5</td>
</tr>
</tbody>
</table>
Standard Equipment
Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

**Electrical**
- Alarm, back up
- Alternator, (tractor engine) 75-amp
- Alternator, (scraper engine) 35-amp
- Batteries, four 12-volt, maintenance free, high output
- Electrical system, 24-volt
- Lighting system:
  - Floodlight, cutting edge
  - Hazard lights
  - Headlights, halogen with dimmer
  - Stop/tail lights
  - Turn signals
- Starting receptacle, (tractor and scraper engines)
- Horn, electric
- Implement control joystick
- Mirrors, rearview
- Radio ready (two radio openings, speakers, 5-amp converter)
- ROPS cab, sound suppressed, pressurized
- Seat belt
- Seat, air suspension, Cat comfort cloth
- Storage compartment
- Steering wheel, tilt, telescoping and padded
- Throttle lock
- Transmission hold
- Windows, sliding side
- Windshield, laminated glass, swingout and rear

**Operator Environment**
- Air conditioner (includes heater and defroster)
- Cigarette lighter and ashtray
- Coat hook
- Dome courtesy light
- Diagnostic connection port (12-volt)
- Gauges/Indicators:
  - Air pressure
  - Converter/retarder temperature
  - Electronic Monitoring System (EMS II)
  - Engine coolant temperature
  - Fuel
  - Speedometer
  - Tachometer
- Transmission gear indicator
- Power train
  - Engine:
    - 3406E EUI Diesel Engine — Tractor
    - 3306 DITA Diesel Engine — 627G Scraper
- Air dryer (tractor)
- Advanced Modular Cooling System (AMOCS) radiator
- Cushion hitch
- Fast oil change system
- Fenders (tractor)
- Locks, vandalism protection
- Rims, 737 mm (29”)
- Tires, 33.25-R29 MX XRB E3
- Tow pins, front and rear

**Braking system:**
- Parking/primary/secondary shields, brake
- Transmission:
  - 8-speed, automatic power shift with electronic control
  - Control throttle shifting
  - Differential, lock-up
  - Downshift inhibitor
  - Neutral coast inhibitor
  - Programmable top gear selection

**Other Standard Equipment**
- Air dryer (tractor)
- Advanced Modular Cooling System (AMOCS) radiator
- Cushion hitch
- Fast oil change system
- Fenders (tractor)
- Locks, vandalism protection
- Rims, 737 mm (29”)
- Tires, 33.25-R29 MX XRB E3
- Tow pins, front and rear

**Optional Equipment**

<table>
<thead>
<tr>
<th>Model</th>
<th>621G</th>
<th>623G</th>
<th>627G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auger (621G/627G)</td>
<td>4536 kg</td>
<td>10,000 lb</td>
<td>—</td>
</tr>
<tr>
<td>Fenders, scraper (621G/623G)</td>
<td>121 kg</td>
<td>266 lb</td>
<td>121 kg</td>
</tr>
<tr>
<td>Fuel system, fast-fill</td>
<td>10 kg</td>
<td>23 lb</td>
<td>10 kg</td>
</tr>
<tr>
<td>Heater, engine coolant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights, side vision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Push block, extended (627G scraper)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Push-pull arrangement (627G scraper)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Push-pull arrangement (627G scraper) w/o rear engine radiator guard</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Retarder, hydraulic (tractor)</td>
<td>150 kg</td>
<td>330 lb</td>
<td>150 kg</td>
</tr>
<tr>
<td>Retarder, hydraulic (627G scraper)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Ripper teeth (623G)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Steering, secondary</td>
<td>50 kg</td>
<td>110 lb</td>
<td>50 kg</td>
</tr>
</tbody>
</table>

621G/623G/627G Scrapers specifications
Gradeability/Speed/Rimpull

To determine gradeability performance: Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus 1% for each 9 kgf/20 lb/ton of rolling resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.
Retarding

To determine retarding performance:
Read from gross weight down to the percent effective grade. (Effective grade equals actual percent grade minus 1% for each 9 kg/t (20 lb/ton) of rolling resistance). From this weight-effective grade point, read horizontally to the curve with the highest obtainable speed range, then down to maximum descent speed the retarder can properly handle.