621G, 623G, 627G

Wheel Tractor-Scrapers



	621G		623G	627G	
	Open Bowl	Auger	Elevator	Open Bowl	Auger
Cat® 3406E Net Power	246/272 kW	246/272 kW	246/272 kW	246/272 kW	246/272 kW
	(330/365 hp)	(330/365 hp)	(330/365 hp)	(330/365 hp)	(330/365 hp)
Cat® 3306 Net Power	—	—	—	168kW	168 kW
				(225 hp)	(225 hp)
Heaped capacity, SAE rated	15.3 m^3	15.3 m^3	17.6 m^3	15.3 m^3	15.3 m^3
	(20 yd^3)	(20 yd^3)	(23 yd^3)	(20 yd^3)	(20 yd^3)
Rated load	21 800 kg	21 800 kg	24 948 kg	21 800 kg	21 800 kg
	(48,000 lb)	(48,000 lb)	(55,000 lb)	(48,000 lb)	(48,000 lb)

621G, 623G, 627G Scrapers

Highly productive earthmoving machines, built to last.

Power Train

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.
pg. 4

Cushion Hitch

Electrically actuated hydraulic damper absorbs haul road shocks for increased operator comfort. **pg. 5**

Scraper Bowl

Caterpillar Scraper bowls are designed to provide fast cycle times for high productivity. **pg. 5**

Push-Pull Arrangement

Designed for maximum productivity while providing the flexibility for self-loading, push-pull loading or standard push loading. **pg. 9**

Elevator Arrangement

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. **pg. 10**



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**

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**

Auger Arrangement

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

Serviceability & Complete Customer Support

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



Power Train

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

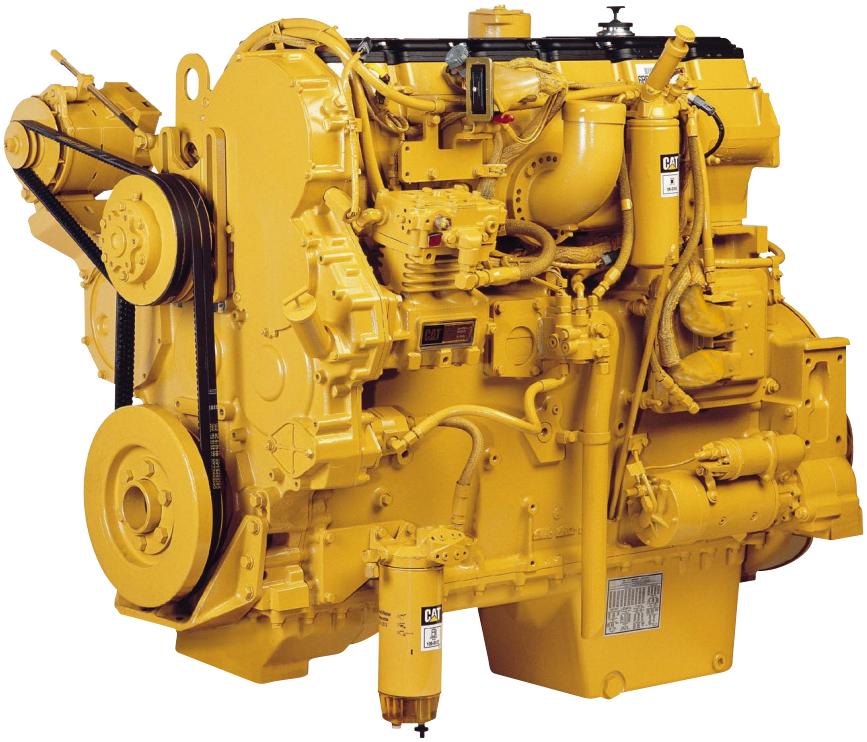
3406E Engine. The six-cylinder, turbocharged, electronically controlled engine is built for power, reliability, and economy.

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.

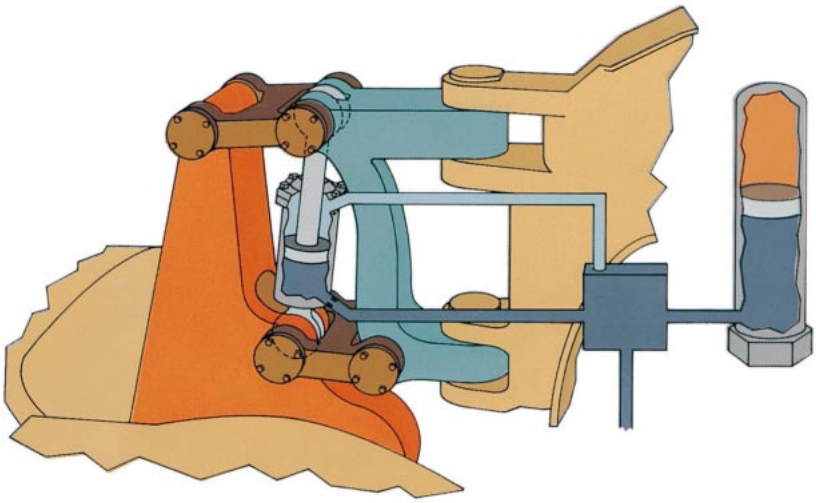
Cushion Hitch

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.



Operator Station

Redesigned for enhanced operator comfort and productivity.



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.

Air Conditioning. Now standard. Improved ventilation enhances airflow in the cab.

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

Open Bowl (621G/627G only)

Highly productive earthmoving machines, built to last.



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.

Elevator (623G only)

Work-alone capability reduces the operating cost-per-ton.



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.

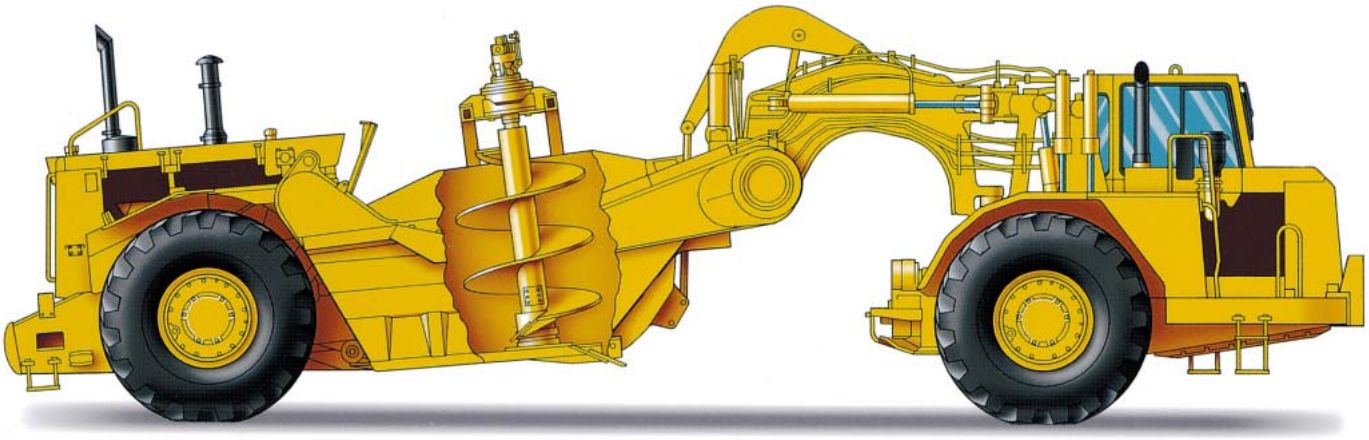
Reverse Function. The elevator reverses for spreading top soil and unloading cohesive material and blending windrowed material.

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.

Auger Arrangement (621G/627G only)

Excellent self-loading capability in a wide range of material.



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.

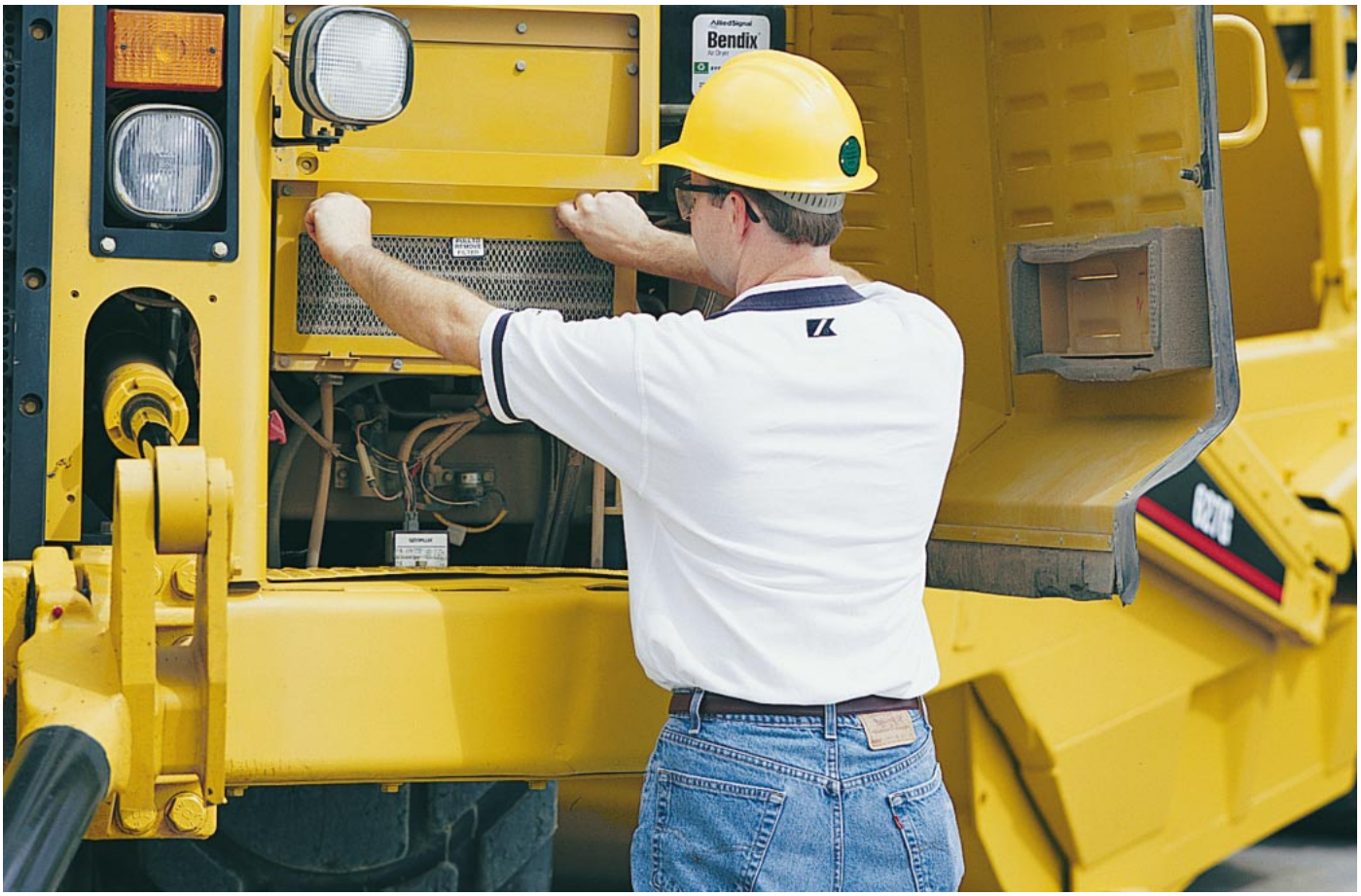
Dual Horsepower. Provides increased power to the auger for improved loading performance.

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.

Ratings at 1800 rpm*	kW	hp
Gross power		
Gears 1 and 2	267	358
Gears 3-8	293	393
Net power		
Gears 1 and 2	246	330
Gears 3-8	272	365

The following ratings apply at 1800 rpm when tested under the specified standard conditions for the specified standard:

Net power	kW	hp	PS
Caterpillar	246/272	330/365	—
ISO 9249	246/272	330/365	—
EEC 80/1269	246/272	330/365	—
SAE J1349	244/270	327/361	—
DIN 70020	—	—	342/378

Dimensions		
Bore	137 mm	5.4 in
Stroke	165 mm	6.5 in
Displacement	14.6 liters	893 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

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*	kW	hp
Gross power	185	246
Net power	168	225

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

Net power	kW	hp	PS
Caterpillar	168	225	—
ISO 9249	168	225	—
EEC 80/1269	168	225	—
SAE J1349	166	223	—
DIN 70020	—	—	233

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

Transmission

Eight-speed automatic power shift.

621G Maximum travel speeds

(at normal shift points)		km/h	mph
Forward	1	5.0	3.1
	2	7.6	4.7
	3	10.9	6.8
	4	14.8	9.2
	5	19.9	12.4
	6	26.9	16.7
	7	36.4	22.6
	8	51.5	32.0
Reverse		9.2	5.7

623G Maximum travel speeds

(at normal shift points)		km/h	mph
Forward	1	5.0	3.1
	2	7.6	4.7
	3	10.9	6.8
	4	14.8	9.2
	5	19.9	12.4
	6	26.9	16.7
	7	36.4	22.6
	8	51.5	32.0
Reverse		8.9	5.4

627G Maximum travel speeds

(at normal shift points)		km/h	mph
Forward	1	5.0	3.1
	2	7.6	4.7
	3	10.9	6.8
	4	14.8	9.2
	5	19.9	12.4
	6	26.9	16.7
	7	36.4	22.6
	8	51.5	32.0
Reverse		8.9	5.4

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

Scraper Features (627G only)

- planetary-type, full torque converter drive with four ranges
- shifting is synchronized to tractor transmission by Mac 14 controllers

Steering

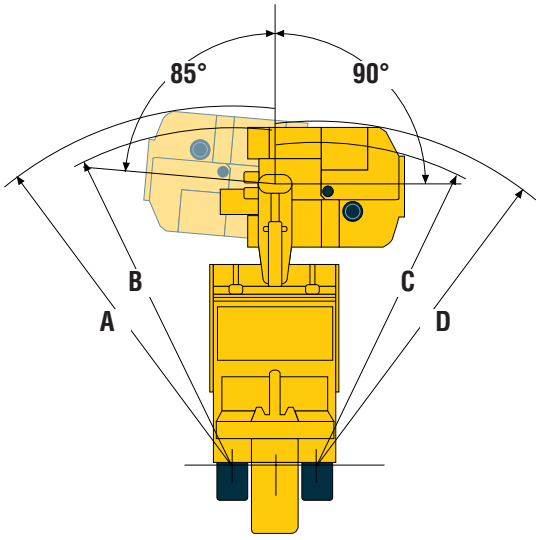
Full hydraulic power steering.

Ratings

Width required for curb-to-curb 180° turn	10.9 m	35'9"
Steering angle:		
right		90°
left		85°

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



	621G/627G		623G	
Maximum Clearance Radii				
A	9023 mm	29'7"	9343 mm	30'8"
D	9083 mm	29'10"	9402 mm	30'10"
Turning Radii				
B	8326 mm	27'4"	8654 mm	28'5"
C	8255 mm	27'1"	8581 mm	28'2"

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
  ISO 3471-1986, ISO 3471-1994
- 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.

Differential Control

Caterpillar differential lock.

Tractor Features

- engaged by foot switch
- helps prevent drive wheels from spinning in poor underfoot conditions

Final Drives

Planetary final drives and full-floating axles.

Features

- double-row roller bearings are service-free
- protected with Duo-Cone Floating Ring Seals

Tires

Manufacturer	Tire Size
Michelin	33.25R29 MX XRB**E3
Goodyear	33.25-29 HRL 32PR E3
Michelin	29.5R29 MX XRB**E3
Goodyear	29.5R29 RL2F4S* E2
Goodyear	29.5-29 SGL 34PR E2
Bridgestone/ Firestone	33.25R29 VRL**E3
Goodyear	33.25R29 RT3A4S**E3

Note:
In certain applications the scraper's productive capabilities might exceed the tires' tonnes-km/h (ton-mph) capabilities. Caterpillar recommends that you consult a tire supplier to evaluate all conditions before selecting optional tires.

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

(approximate)

Model	621G*	623G	627G* Standard	627G Push-pull
Shipping, with ROPS cab and 10% fuel				
Tractor	69%	65%	59%	61%
	21 833 kg 48,133 lb	23 735 kg 52,328 lb	21 532 kg 47,470 lb	22,894 kg 50,473 lb
Scraper	31%	35%	41%	39%
	9809 kg 21,625 lb	12 781 kg 28,176 lb	14 963 kg 32,988 lb	14 637 kg 32,270 lb
Total 100%	**31 642 kg 69,758 lb**	**36 516 kg 80,504 lb**	**36 495 kg 80,458 lb**	**37 532 kg 82,743 lb**
Operating empty, with ROPS cab, full fuel tanks and operator				
Front axle	68%	64%	59%	60%
	21 968 kg 48,341 lb	23 795 kg 52,460 lb	21 888 kg 48,256 lb	23,020 kg 50,750 lb
Rear axle	32%	36%	41%	40%
	10 319 kg 22,749 lb	13 327 kg 29,380 lb	15 211 kg 33,534 lb	15 114 kg 33,320 lb
Total 100%	**32 247 kg 71,090 lb**	**37 122 kg 81,840 lb**	**37 099 kg 81,790 lb**	**38 136 kg 84,075 lb**
Loaded, based on a rated load of:	21 800 kg 48,000 lb	25 000 kg 55,000 lb	21 800 kg 48,000 lb	21 800 kg 48,000 lb
Front axle	53%	50%	48%	49%
	28 630 kg 63,118 lb	30 901 kg 68,125 lb	28 258 kg 62,299 lb	29 355 kg 64,717 lb
Rear axle	47%	50%	52%	51%
	25 388 kg 55,972 lb	30 901 kg 68,125 lb	30 613 kg 67,491 lb	30 553 kg 67,358 lb
Total 100%	**54 018 kg 119,090 lb**	**61 802 kg 136,250 lb**	**58 871 kg 129,790 lb**	**59 908 kg 132,075 lb**

*Auger adds approximately 4536 kg (10,000 lb) to total weight.

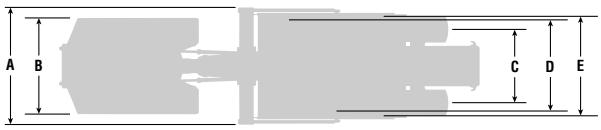
Hydraulics

Closed, full-flow filtered hydraulic circuits powered by vane-type and piston-type pumps.

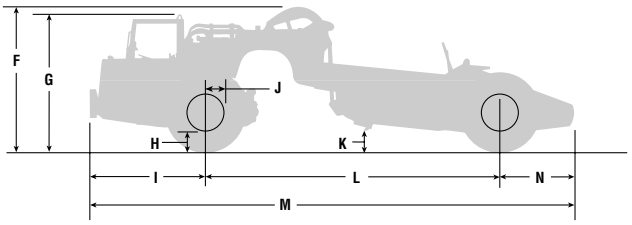
Model		621G		623G		627G	
Double acting bowl cylinders (2)							
Dimensions:	bore	152 mm	6"	152 mm	6"	152 mm	6"
	stroke	813 mm	32"	508 mm	20"	813 mm	32"
Double acting apron (floor on 623G) cylinder (1)							
Dimensions:	bore	184 mm	7.25"	152 mm	6"	184 mm	7.25"
	stroke	600 mm	24"	1353 mm	53.25"	600 mm	24"
Double acting ejector cylinder (1)							
Dimensions:	bore	165 mm	6.5"	127 mm	5"	165 mm	6.5"
	stroke	1549 mm	61"	1213 mm	47.75"	1549 mm	61"
Steering circuit at 1800 rpm		197 liter/min	52 gpm	213 liter/min	56 gpm	197 liter/min	52 gpm
Scraper circuit (elevator on 623G) at 1800 rpm		284 liter/min	65.5 gpm	240 liter/min	62.2 gpm	284 liter/min	65.5 gpm
Cushion hitch circuit at 1800 rpm		35.5 liter/min	9.7 gpm	32.5 liter/min	8.6 gpm	34 liter/min	9.2 gpm
Optional supplemental steering circuit at 24 km/h (14.9 mph)		150 liter/min	39.9 gpm	150 liter/min	39.9 gpm	150 liter/min	39.9 gpm
Relief valve settings for:							
Steering circuit		15 500 kPa	2250 psi	15 500 kPa	2250 psi	15 500 kPa	2250 psi
Implement circuit		14 800 kPa	2150 psi	17 237 kPa	2500 psi	14 800 kPa	2150 psi
Compensator settings for:							
Cushion hitch circuit		—	—	15 859 kPa	2300 psi	—	—
Elevator circuit		—	—	36 199 kPa	5250 psi	—	—

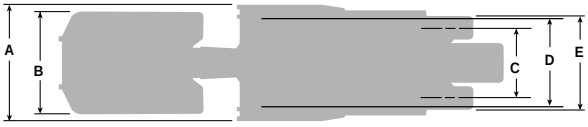
Dimensions

All dimensions are approximate.

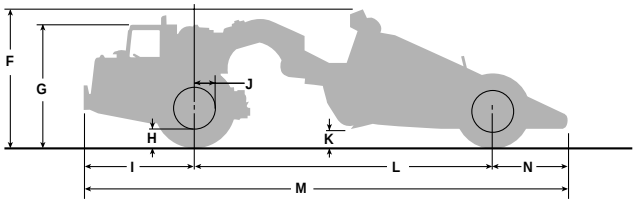


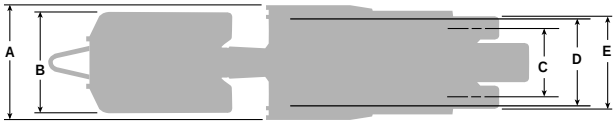
621G



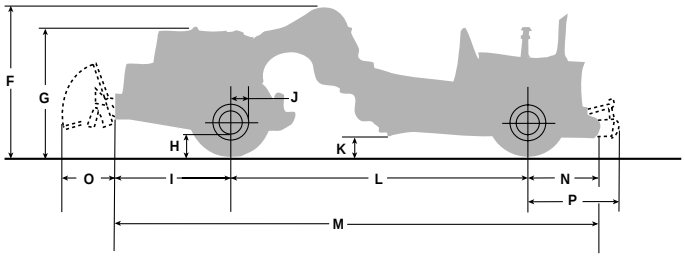


623G





627G



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

Scraper Bowl

High-carbon steel, box construction.

Model	621G		623G		627G	
Maximum depth of cut	333 mm	13.1"	330 mm	13"	333 mm	13.1"
Width of cut, outside router bits	3023 mm	9'11"	3150 mm	10'4"	3023 mm	9'11"
Maximum rated load	21 800 kg	48,000 lb	24 948 kg	55,000 lb	21 800 kg	48,000 lb
Heaped, SAE rating	15.3 m^3	20 yd^3	17.6 m^3	23 yd^3	15.3 m^3	20 yd^3
Struck, SAE rating	10.7 m^3	14 yd^3	13.8 m^3	18 yd^3	10.7 m^3	14 yd^3
Maximum ground clearance (cutting edge)	522 mm	18"	387 mm	15.25"	522 mm	18"
Cutting edge dimensions:						
Center section	22 x 406 x 1430 mm .86 x 16 x 56.3"		22 x 406 x 1529 mm .86 x 16 x 60.1"		22 x 406 x 1430 mm .86 x 16 x 56.3"	
End section	22 x 330 x 750 mm .86 x 13 x 29.5"		22 x 330 x 748 mm .86 x 13 x 29.4"		22 x 330 x 750 mm .86 x 13 x 29.5"	
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 150 mm (6 in) above ground level	1780 mm	70"	—	—	1780 mm	70"
Apron closure force, cutting edge fully raised and apron opened 300 mm (12 in)	107 kN	24,075 lb	—	—	107 kN	24,075 lb

Service Refill Capacities

Model	621G		623G		627G Tractor		627G Scraper	
	liters	gallons	liters	gallons	liters	gallons	liters	gallons
Fuel tank	606	160	606	160	—	—	1105	292
Crankcase	36	9.5	36	9.5	36	9.5	27	7
Transmission	72	19	72	19	72	19	53	14
Differential	144	38	144	38	144	38	15	4
Final drive, each side	19	5	19	5	19	5	19	5
Cooling system	107	28	107	28	107	28	70	18.5
Hydraulic reservoir	140	37	140	37	140	37	—	—
Wheel coolant, each	45	12	45	12	45	12	45	12
Windshield washer	6	1.5	6	1.5	6	1.5	—	—

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)

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
- 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
- Windshield wiper/washer, front and rear

Power train
- Engine:
  - 3406E EUI Diesel Engine — Tractor
  - 3306 DITA Diesel Engine — 627G Scraper
  - Air cleaner with pre-cleaner
  - Ground level engine shutdown
  - Guard, crankcase
  - Muffler
  - Starting aid, ether (automatic)
  - Thermo-shield, laminated
- 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

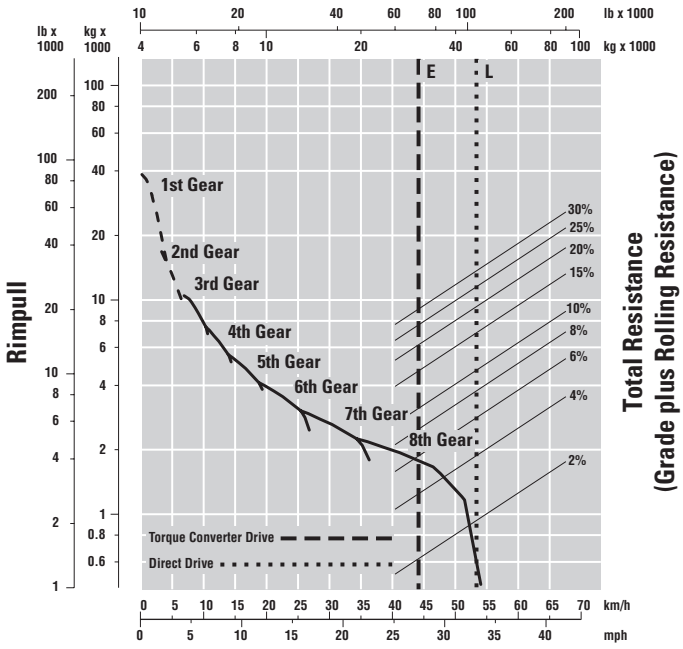
Optional Equipment

Model	621G		623G		627G	
Auger (621G/627G)	4536 kg	10,000 lb	—	—	4536 kg	10,000 lb
Fenders, scraper (621G/623G)	121 kg	266 lb	121 kg	266 lb	—	—
Fuel system, fast-fill	10 kg	23 lb	10 kg	23 lb	10 kg	23 lb
Heater, engine coolant						
Lights, side vision						
Push block, extended (627G scraper)	—	—	—	—	200 kg	440 lb
Push-pull arrangement (627G scraper)	—	—	—	—	489 kg	1078 lb
Push-pull arrangement (627G scraper) w/o rear engine radiator guard	—	—	—	—	349 kg	770 lb
Retarder, hydraulic (tractor)	150 kg	330 lb	150 kg	330 lb	150 kg	330 lb
Retarder, hydraulic (627G scraper)	—	—	—	—	154 kg	340 lb
Ripper teeth (623G)	—	—			—	—
Steering, secondary	50 kg	110 lb	50 kg	110 lb	50 kg	110 lb

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 kg/t (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.

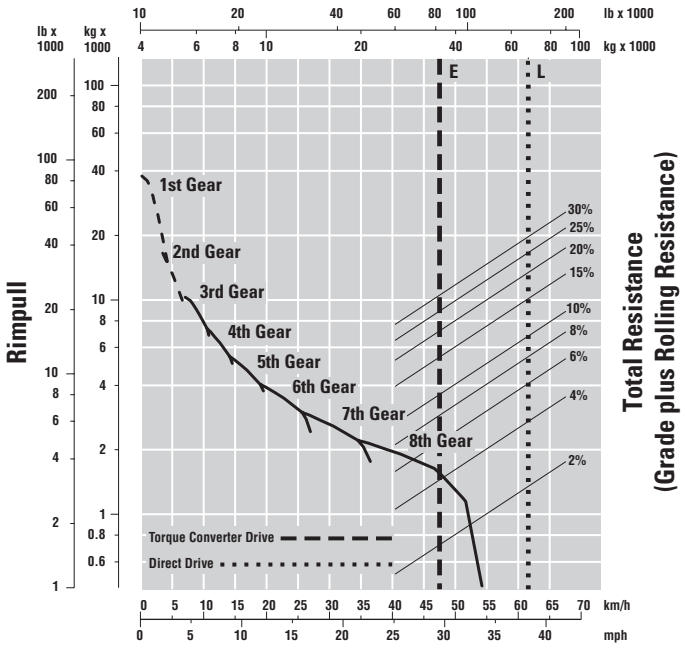
621G Gross Weight 37.25-35 Tires



1—1st Gear Torque Converter Drive
2—2nd Gear Torque Converter Drive
3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 32 247 kg (71,090 lb)
L—Loaded 54 018 kg (119,090 lb)

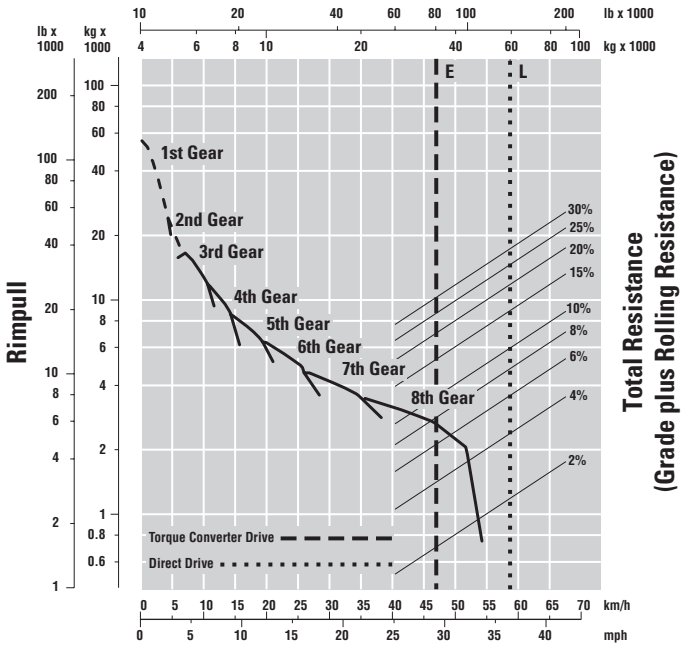
623G Gross Weight 37.25-R35 Tires



1—1st Gear Torque Converter Drive
2—2nd Gear Torque Converter Drive
3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 37 122 kg (81,840 lb)
L—Loaded 61 802 kg (136,250 lb)

627G Gross Weight 37.25-35 Tires



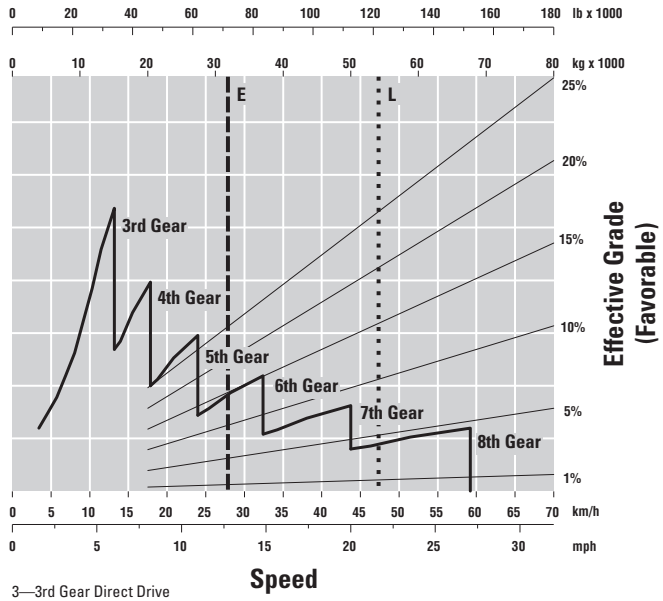
1—1st Gear Torque Converter Drive
2—2nd Gear Torque Converter Drive
3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 37 099 kg (81,790 lb)
L—Loaded 58 871 kg (129,790 lb)

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.

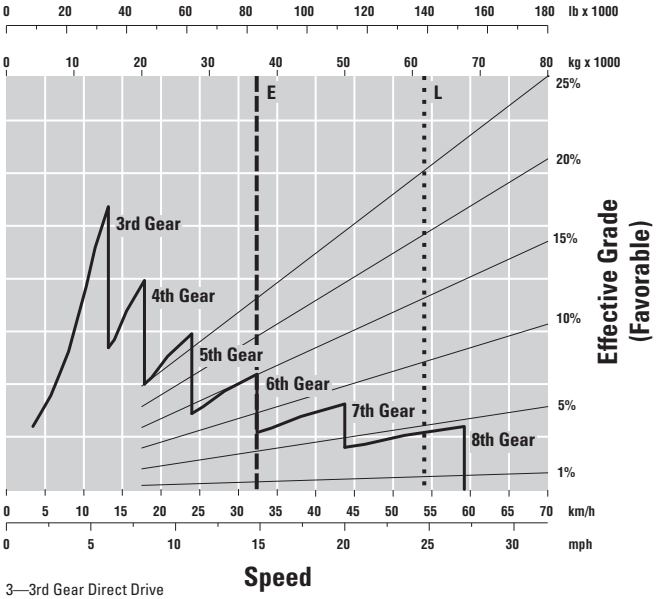
621G Retarding Gross Weight



3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 32 247 kg (71,090 lb)
L—Loaded 54 018 kg (119,090 lb)

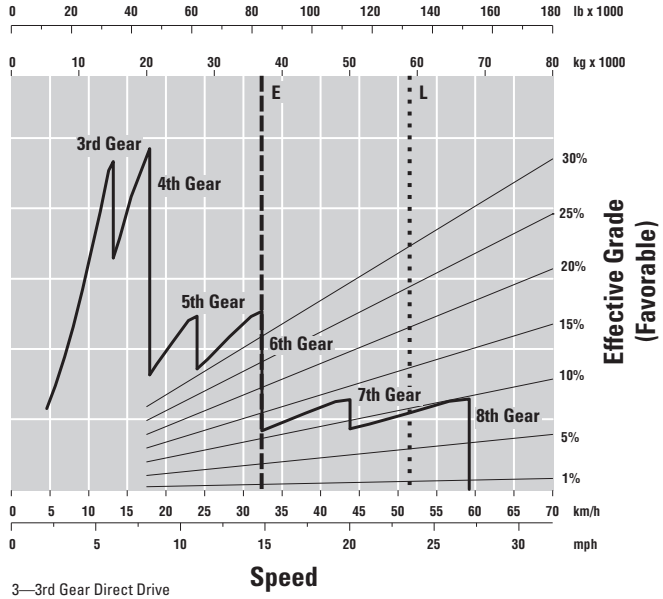
623G Retarding Gross Weight



3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 37 122 kg (81,840 lb)
L—Loaded 61 802 kg (136,250 lb)

627G Retarding Gross Weight



3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 37 099 kg (81,790 lb)
L—Loaded 58 871 kg (129,790 lb)

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

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