657G

Wheel Tractor Scraper

Engine		
Tractor Engine	Cat® C18 ACERT™	
Net Power	421/447 kW	564/600 hp
Scraper Engine	Cat C15 ACERT	
Net Power	306/337 kW	410/451 hp

Scraper Bowl		
Heaped Capacity	33.6 m^3	44 yd^3
Rated Load	47 200 kg	104,058 lb

657G Wheel Tractor Scraper

Responsible, productive earthmoving machines, built to last.

Power Train – Engine

✔ The C18 and the C15 engines with ACERT™ Technology works at the point of combustion to optimize engine performance. Matched with the torque converter and power shift transmission, it provides years of dependable and efficient service. **pg. 4**

Power Train – Transmission

✔ Electronic controls switch from converter drive to direct drive based on gear selection, maximizing efficiency and power application. Tractor and scraper engines are synchronized for smooth operation and longer service life. **pg. 6**

Structures

Superior structural design delivers state-of-the-art ride, capacity, and material control while assuring the durability and reliability customers expect from Caterpillar. **pg. 7**

Push-Pull Arrangement (657G)

For maximum production capability, Caterpillar offers an optional push-pull arrangement for the 657G, which allows two push-pull scrapers to act as a self-loading machine. **pg. 12**

Auger Arrangement

Provides self-loading capability with the same wide material appetite as an open bowl machine. **pg. 13**

Quick loading, high travel speeds and the ability to load and dump on the run yield fast cycle times, allowing Caterpillar® Wheel Tractor-Scrapers to consistently deliver high productivity.

Operator Station

✔ Convenient control placement and a comfortable work environment are keys to high productivity. Features include electro-hydraulic controls, an available air seat suspension and advanced instrumentation. **pg. 8**

Electronic Controls

✔ The electronic controls respond to operator commands and input from on-board sensors to optimize machine performance. In addition, the electronic controls provide advanced diagnostic capabilities that result in better machine availability. **pg. 10**

Scraper Bowl

✔ Caterpillar® Scraper bowls are designed for excellent material flow and retention for fast cycle times and high productivity. **pg. 11**

Serviceability

✔ Grouped service points and easy access, the latest electronic monitoring systems and rugged Caterpillar components simplify maintenance and minimize downtime. **pg. 14**

Customer Support

Caterpillar dealers have the parts and service capabilities to keep your wheel tractor-scrapers working. **pg. 15**

✔ *New Feature*

Power Train – Engine

A combination of innovations working at the point of combustion, ACERT™ technology optimizes engine performance while meeting regulations for off-road applications.

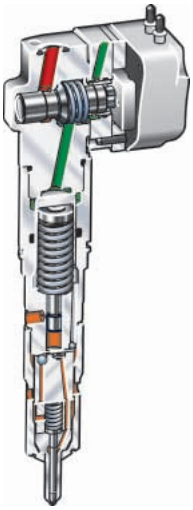
Cat C18 engine with ACERT™ Technology

C18 Tractor Engine. The tractor for the 657G is powered by the C18 engine with ACERT™ Technology. The large displacement and high torque rise allow the scraper to cut through tough material. Matched to the high efficiency torque converter and electronically controlled power shift transmission, it will provide years of dependable service.

C15 Scraper Engine. The 657G is tandem-powered, adding a Cat C15 engine with ACERT Technology for the scraper. The C15 gives the 657G additional power to assist in loading as well as improve hauling performance.

ACERT™ Technology. Caterpillar optimizes engine performance while meeting U.S. EPA Tier 3 and European Union Stage IIIA regulations. ACERT Technology reduces emissions during the combustion process by using advanced technology in the air and fuel systems, in conjunction with integrated electronics. Caterpillar meets emission regulations at the combustion source rather than recycling exhaust gases.

Dual Horsepower. The C18 and C15 engines have dual horsepower capability with the low power setting in torque converter drive and the high power setting in direct drive. If the auger is engaged while the machine is in torque converter drive, the machine automatically goes to the high power setting.



Electronic unit injector

Mechanical Electronic Unit Injection (MEUI). The MEUI system with variable shaped injection patterns provides for optimum combustion based on altitude and temperature. The Cat MEUI fuel system is a highly evolved fuel system with a proven record of reliability in the field. The system combines the technical advancement of an electronic control system with the simplicity of direct mechanically controlled unit fuel injection pressure. These features allow the C18 and C15 to completely control injection timing, duration and pressure.

Electronic Control Module. The ECM responds to operator commands and engine sensor input to optimize engine and machine performance. This advanced engine management software controls and protects the engine at all times against cold starts, high altitude operations and air filter plugging by monitoring:

- injection timing and pressure
- engine cooling fan speed
- ether starting aid
- hydraulic pumps

ADEM™ A4 Control Module.
Controls engine rpm by adjusting the fuel duration, which results in quicker starts in hot and cold weather, better fuel economy, better operator response, and automatic compensation for altitude and filter plugging.

Reduced Exhaust Smoke.
The ADEM A4 controller reads electronic sensors to determine the optimum fuel/air ratio. Fuel is precisely controlled during cranking, starting and acceleration to reduce smoke. The Engine Electronics are faster and more efficient than mechanically controlling the governor rack position.

Ether Starting Aid. The ADEM A4 controller activates the ether injection system during engine cranking to enhance cold weather starting.

Control Throttle Shifting (CTS).
Automatically synchronizes engine speed to transmission speed during shifting to reduce power train stress and increase component life. In addition it results in a smoother ride for the operator.

Directional Shift Management.
Regulates engine speed to prevent damage caused by high-speed directional changes.

Low Battery Elevated Idle.
The ADEM A4 controller automatically compensates for low alternator output at low idle by raising the rpm for brief intervals to keep the batteries fully charged.

Altitude Compensation. The system de-rates fuel delivery as a function of barometric pressure as sensed by the system's atmospheric pressure sensor. No manual adjustment is required. Auto deration prevents excessive combustion temperatures that could result in component damage.

Diagnostic Capability. Cat® Electronic Technician (Cat ET) is used to display real-time pressures, temperatures, fuel settings and diagnostic messages as well as a historical information such as engine over-speeds, overheating, low oil pressure and air filter restriction events.

Fuel Economy. Electronic controls optimize the timing setting for varying load conditions. The ADEM A4 controller matches timing to the load on the engine, engine rpm and temperature.

Air Filter Restriction. ADEM A4 controller monitors air filter restriction and sends a warning message to the Electronic Monitoring System (EMS III) to alert the operator if the restriction exceeds the allowable limit.

Automatic Belt Tensioning. Both the tractor and scraper engines have automatic belt tensioning rather than manual tensioning. The number of belts has been reduced to two on the tractor, and two on the scraper. Fan drive bearings both the tractor and scraper engines with ACERT™ technology eliminate servicing requirements.

One-Piece Power Block. The jumpstart receptacle and disconnect switch are integrated into one-piece power block that provides better electrical integrity and serviceability. The disconnect switch with lockable cover locks out all power for servicing.

NGMR Engine Cooling System.
The standard radiator for the tractor is the Next Generation Modular Radiator (NGMR), which features 9 fins per inch rather than 33 fins per inch found on previous models. The increased radiator fin spacing for both the tractor and the scraper reduces clogging in severe applications. Two-piece service doors improve access to clean out debris.

Scraper Radiator. The scraper also has an NGMR radiator, which features 9 fins per inch.

Extended Oil Change Interval.
Oil change intervals in both the C18 and C15 engines can be extended to 500 hours with the use of S•O•S℠ analysis.

Power Train – Transmission

Integrated electronics allow the machine to monitor the entire power train, reducing component stress and providing a better ride.

Transmission. Electronically controlled Caterpillar planetary powershift transmission with eight forward and one reverse speed. Tractor gears 1 & 2 operate in converter drive for increased torque capability during cut and fill operations. Gears 3-8 operate in direct-drive for drive train efficiency during the haul. All scraper gears operate in converter drive for increased torque capability during the cut and fill.

Synchronized Scraper Transmission. The scraper transmission is electronically controlled by the tractor transmission, synchronizing the scraper transmission gear selection with that of the tractor transmission. The scraper transmission cannot be shifted manually. A neutral/run switch, located in the cab, allows the operator to disengage the scraper transmission.

Planetary Design. Provides larger contact area between gears than countershaft transmissions for greater load-carrying capacity.

Transmission Hold. Incorporated into the joystick controller, Transmission Hold allows the operator to maintain converter drive for increased rimpull, or hold the current gear for enhanced control.

Programmable Top Gear Selection. Allows the operator to manually set the top gear (3rd – 8th) available to match conditions or to match the hauling speed of the fleet to specific job-site needs.

Retarder. The hydraulic retarder can be used to slow the ground speed of the machine when entering the cut or fill area to allow the transmission to downshift. It also reduces service brake wear and enhances machine control.

Differential Control. Electronic differential lock helps prevent the drive wheels from spinning in poor underfoot conditions. The operator engages the differential lock with a foot control located in the cab.

Neutral Coast Inhibitor. Prevents the transmission from shifting into neutral if the operator selects neutral while moving. The transmission control will select the proper gear for the given engine rpm and ground speed.

Final Drives. Outboard-mounted, planetary design final drives reduce torque loads on other power train components. Large-capacity, double-row roller bearings and Caterpillar Duo-Cone® seals deliver exceptional reliability in the toughest applications.

Independent Brake Systems. Expanding-shoe type brakes use a cam-operated design, which is air-applied and spring released. The secondary braking system uses independent front and rear circuits that are automatically applied if the service air pressure drops to 380 kPa (55 psi). Audible and visual action alert indicators inform the operator when the service air pressure drops to 518 kPa (75 psi).

Parking Brakes. The push-button operated parking brake features a spring-applied, air-released mechanism that operates the service brakes.

Steering. Full hydraulic power steering provides automotive feel with positive, modulated flow control for constant steering response. An optional secondary steering system is ground-driven and provides hydraulic power for steering if needed.

Structures

Superior structural design and construction optimize performance and reliability.

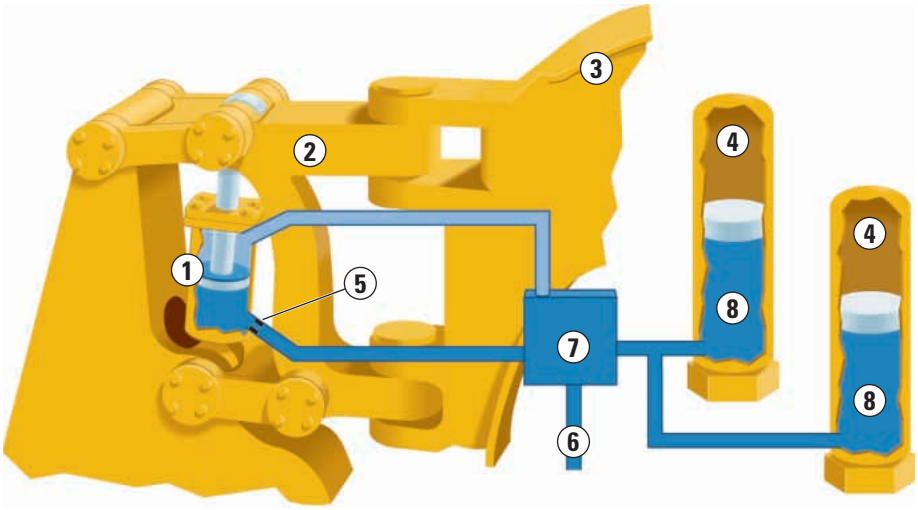
Cushion Hitch. The electronically actuated cushion hitch incorporates a parallelogram-type linkage for exceptional strength with nitrogen accumulators to deliver a smooth ride for enhanced operator comfort.

- cushion hitch lock down control for positive cutting edge down pressure when loading or spreading
- controlled oil flow dampens rebound oscillation
- leveling valve automatically centers piston in cylinder for all loads
- steel castings are used extensively to eliminate many welded joints and increase strength
- double-kingbolt design withstands high external forces and simplifies installation and removal

Nitrogen Accumulators. Vertically mounted hydraulic cylinder transfers road shocks to nitrogen accumulators. Nitrogen accumulators absorb and dampen road shocks, thus reducing the shocks being transmitted to the operator.

Lockout Switch. An operator-selectable lockout switch, located on the joystick, locks the cushion hitch for improved control of the cutting edge during loading and dumping.

1 Load cylinder
2 Hitch castings
3 Scraper gooseneck
4 Nitrogen accumulators
5 Orifice
6 Oil from tractor hydraulic system
7 Leveling valve
8 Free floating pistons



Operator Station

State-of-the-art productivity and operator comfort.

Multi-Adjustable Seat. The Cat Comfort Cloth Seat offers an adjustable seat and armrests for maximum operator comfort.

- Swivels and locks in four positions (0º – 10° – 20° – 30º) providing the optimum operating position in the cut or on the haul.
- Adjustable 102 mm (4 in) fore/aft and 203 mm (8 in) vertical height to accommodate various sized operators.
- Static seat belt is standard. A retractable non-cinching seat belt is available as an option.

Seat Suspension. The new standard seat suspension features a high performance air shock absorber with a self-contained air compressor. For operators requiring additional damping, dual shock absorbers in the seat suspension are available.

Revised Steering Column. Increases legroom a full 89 mm (3.5 in), and reduces knee contact.

Standard Air Conditioning. Standard air conditioning system with relocated louvers enhances airflow in the cab.

Storage And Amenities. Convenient storage location includes space for a lunch box and first aid kit. The cab also has a cup holder as well as an ashtray.

Visibility. The redesigned hood has sloped corners to maximize visibility while accommodating the low emissions engine.

The redesigned hood and front shroud are wider to enclose the air-to-air aftercooler (ATAAC), ether starting aid, and lights. The exhaust is located at the back of the hood for good visibility to the right side.

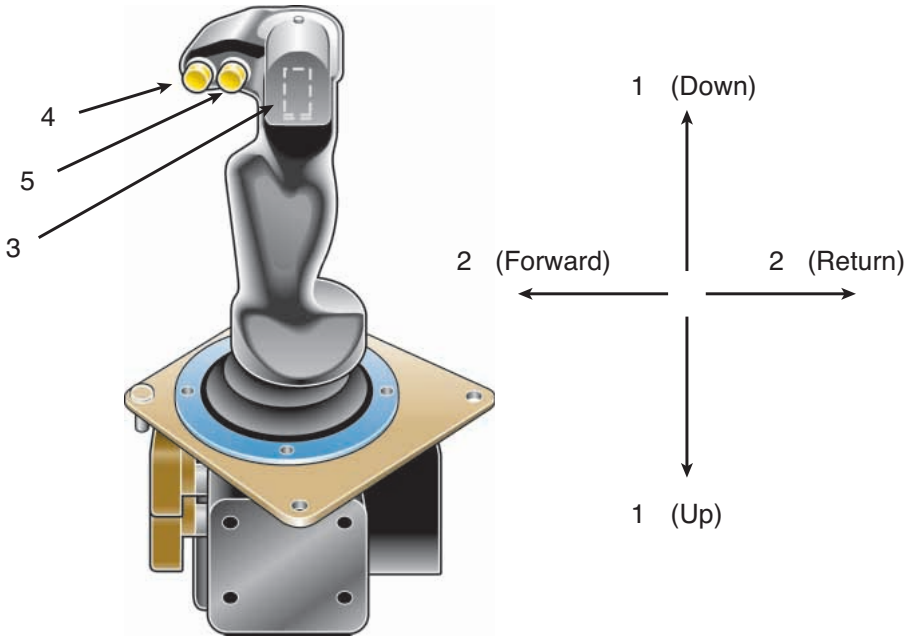
Instrument Display Panel. Features a new quad-gauge layout showing engine coolant temp, transmission/torque converter oil temp, fuel level, and system air pressure. The 657G tachometer can monitor either front or rear engine speeds. Once the 657G tractor engine has been started, the operator can start the rear engine from inside the cab using a switch on the instrument panel. EMS III can display both front and rear engine information right in the cab.

Logical Control Placement. Placing only frequently used switches and indicator lights on the instrument panel, and less frequently used switches on the overhead console improves efficiency and reduces reaching.

Engine Speed Lock Controller. Enhances operation during long haul cycles by allowing the operator to maintain a desired engine speed, without maintaining pressure on the throttle.

Simplified Transmission Control. Simplifies gear selection (1st, 2nd, Drive and Reverse) and allows operator-defined top gear control. Relocating the gear control to the rear increases operator legroom.

Neutral Lock. The neutral lock thumb control must be pressed to move the shifter from neutral. To use the top gear button, the operator must hold the yellow button until the gear display indicates the desired top gear. Releasing the yellow button sets the top gear.



Joystick Control: positions, switches and buttons

Grab Handle/Hand Rest. The grab handle/hand rest located next to joystick controller helps operators when adjusting seat swivel, and gives them a place to rest their hand while on the haul and return roads.

Single Lever Implement Control. Simple and easy to operate, the joystick enhances the productivity of operators of all skill levels. Requires less force to control the critical scraper functions and requires less lever travel.

1) Bowl (forward & back)
2) Ejector (side to side)
3) Apron (thumb rocker switch)
4) Transmission Hold
5) Cushion Hitch
6) Rocker switch (not shown – is on front of joystick)

- Auger (on/off)
- Push-Pull (bail up/down)

* Standard open bowl does not have a rocker switch.

Electronic Controls

Integrated electronic controls provide smooth, consistent shifts through the synchronization of engine and transmission speeds.

Simplified System. The electrical system has been redesigned to utilize three electronic control modules (ECM) on the tractor instead of four. The rear-powered scraper now has two ECMs rather than three.

Air Filter Restrictor Indicator. ADEM A4 controller monitors air filter restriction. If the restriction exceeds the allowable limit, it alerts the operator by sending a message to the Electronic Monitoring System (EMS III).

Automatic Ether Injection. The ADEM A4 controller activates the ether injection system during engine cranking to enhance cold weather starting.

Automatic Altitude Compensation. At high altitudes the system automatically de-rates fuel delivery as a function of barometric pressure sensed by the system's atmospheric pressure sensor.

Low Battery Elevated Idle. The ADEM A4 controller automatically compensates for low alternator output at low idle by raising the rpm for brief intervals to keep the batteries fully charged.

Improved Serviceability. Combined monitoring systems, easy access diagnostics and more durable components make routine maintenance and servicing simple and fast.

Combined EMS Monitoring. The Electronic Monitoring System (EMS III) is designed to monitor both the tractor and scraper from one location instead of two. Both the tractor and powered scraper use the same controller for parts commonality and easier servicing.

Easy Access Diagnostics. A variety of diagnostic codes are accessible through the EMS main display module, via the Cat® Electronic Technician (Cat ET). This offers a head start on problem solving, so with a radio call the service technician can know which tools, troubleshooting guides, and possibly even replacement parts to bring to the machine.

Greater Reliability. The MEUI system has fewer moving parts than mechanical unit injection and requires few adjustments. The ADEM A4 controller communicates with the monitoring system (EMS) to warn the operator should problems arise, to help avoid major damage.

Maintenance. MEUI engines have significantly fewer mechanically controlled parts to wear or adjust. These have been replaced by electronic controls, reducing maintenance costs and increasing machine availability.

Product Link Ready. Product Link is a wireless system that allows the customer to track machine data such as location, service meter hours as well as machine health information. The system can automatically issue alerts when the machine is operated beyond owner-defined time and location limits.

Product Link is available as a factory attachment or it may be installed in the field in that there is a mounting location for the module as well as an antenna on the machine. A wiring breakout is standard, eliminating the need to splice into existing wires.

Fuel Economy. Electronic controls optimize the timing setting for varying conditions. The ADEM A4 controller matches timing to the load on the engine, engine rpm and temperature.

Reduced Exhaust Smoke. The ADEM A4 controller reads electronic sensors to determine the optimum fuel/air ratio. Fuel is precisely controlled during cranking, starting and acceleration to reduce smoke. The engine electronics are faster and more efficient than mechanically controlling the governor rack position.

Scraper Bowl

Designed for optimum loading, material retention and ejection.

Redesigned Bowl. The redesigned bowl minimizes falling material lodging between the bowl and the draft arm, resulting in premature wear. The modifications also provide better load retention on level ground or traversing down a grade.

- Low-profile bowl design offers less resistance to incoming materials.
- Cellular construction adds strength and dent resistance to bowl sides and floor.

Bulldozer Ejection System. Cat bulldozer ejection system offers constant spreading control with minimal material carry back. A spill guard helps retain material and keep it from spilling over onto the rear of the scraper (standard on tandem engine scrapers, optional on single engine open bowl scrapers).

Cutting Edges. May be adjusted according to job conditions. The stinger (drop down) position provides good penetration and efficient flow of material into the bowl whereas the level cutting edge is used for finish work or very high impact conditions.

Caterpillar Ground Engaging Tools (G.E.T.). A wide variety of Ground Engaging Tools (GET) options such as standard, serrated, and abrasion resistant material (ARM) are available to optimize scraper loading in various materials. For example, ARM scraper cutting edges and router bits will provide up to five times the wear life of conventional edges and router bits in high wear, low impact applications. Depending on applications, the serrated cutting edge may be more cost effective than the integrated tooth cutting edge.

Tandem Engine. Two engines ensure the power to handle steep grades, and makes possible all wheel drive to handle soft, slippery underfoot conditions.

Dual Horsepower. The 657G rear engine has dual horsepower capability that results in better performance on the haul roads.

Material Application. Well suited to handle a wide variety of material from clay to shot rock.

Push-Pull Arrangement (657G)

Caterpillar offers a self-loading arrangement for the 657G.

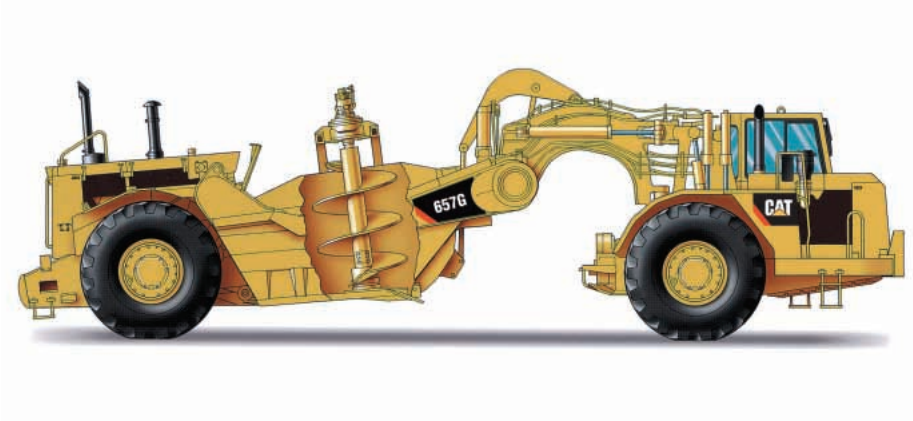
Push-Pull Attachment. This optional arrangement concentrates the combined horsepower of two machines onto one cutting edge. The push-pull attachment allows two individual machines to act as a self-loading system, typically loading both machines in less than a minute.

Flexible Fleet. This system provides a more balanced, flexible fleet using fewer machines and less investment than comparable self-loading or push-loading systems.

Hydraulically Actuated Bail. The push-pull arrangement uses a hydraulically actuated bail and cushioned plate bolted to the front of the tractor, and a hook that is attached to the rear of the scraper. There is an actuator indicator light on the dash that will turn on when the trigger is engaged to actuate the push-pull bail or auger.

Auger Arrangement

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



Versatility. The auger has a wide material appetite ranging from rock to free flowing material such as sand.

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.

Material Handling. The auger actions on the material produce several benefits:

- wide material appetite, ideal for landfills
- blends the material to help eliminate voids in the bowl for consistent payloads
- conditions material which promotes compaction in the fill
- reduces dust and noise during loading

Dual Horsepower. Tractor engine automatically reverts to the higher setting when the auger motor is engaged.

Slip Limiter Switch. Prevents rear wheel spin during loading.

Hydraulic System. Single hydraulic system for entire machine with separate implement pumps/valves simplifies maintenance and improves reliability.

Full-flow Circuits. The hydraulic system features closed-loop, full-flow hydraulic circuits powered by gear-type and piston-type pumps.

Apron. Prevents material spillage and retains fine material far better than an elevating scraper.

Electro-hydraulic Controls. The 657G features full electro-hydraulic controls, which simplify serviceability and reduce noise by replacing the cab pilot valves with a single-lever joystick control. The high efficiency oil filter provides cleaner oil for the pilot system.

Serviceability

Count on Caterpillar for simplified service and the most productive uptime.

Grouped Service Points. Maintenance and service points for the engine are grouped on the right-hand side for easy access. They include the engine air cleaner, engine oil check and fill, fuel filters and priming, coolant level sight glass, window washer bottle, air conditioning dryer cartridge, ether starting aid canister, engine oil filter, fan drive lubrication, and sampling ports for the engine oil and coolant.

- Spin-on fluid filters for all but the main hydraulic filter
- Cab wiring harness redesigned and relocated for better serviceability

Two-Piece Service Doors. The tractor has a standard two-piece door on the right side, which allows better access to service points. The hood is hinged on the front and has spring struts, so the hood easily swings open towards the front of the machine. This allows better access to those areas located on top of the engine.

Electronic Monitoring System (EMS III). Monitors both the tractor and scraper from one location instead of two. Both the tractor and powered scraper use the same controller for parts commonality and easier servicing.

Electro-Hydraulic Implement Control. Simplifies serviceability by removing the cab pilot valve and associated lines, which also improves reliability and reduces noise. The high efficiency oil filter provides cleaner oil for the pilot system.

Electronic Technician (Cat ET). The Electronic Technician (Cat ET) Service Tool is useful in troubleshooting existing problems or identifying potential problems by displaying:

- Real-time pressures, temperatures, fuel settings and diagnostic messages
- Historical data such as engine over-speeds, overheating, low oil pressure and air filter restriction events
- More detailed information to the service technician who can access Cat ET via a laptop computer

Easy Access Diagnostics. A variety of diagnostic codes are accessible through the EMS main display module, via the Cat® Electronic Technician (Cat ET). This offers a head start on problem solving, so with a radio call the service technician can know which tools, troubleshooting guides, and possibly even replacement parts to bring to the machine.

Customer Support

Cat dealer services help you operate longer with lower costs.

Product Support. You will find nearly all parts at our dealer parts counter. Cat dealers use a world-wide computer network to find in-stock parts to minimize machine down time. Save money with genuine Cat Reman parts whenever possible. You receive the same warranty and reliability as new products at substantial cost savings.

Machine Selection. Make detailed comparisons of the machines under consideration before purchase. Cat dealers can estimate component life, preventive maintenance cost, and the true cost of lost production.

Purchase. Look past initial price. Consider the financing options available as well as day-to-day operating costs. Look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

Customer Support Agreements. Cat dealers offer a variety of product support agreements, and work with customers to develop a plan that best meets specific needs. These plans can cover the entire machine, including attachments, to help protect the customer's investment.

Operation. Improving operating techniques can boost your profits. Your Cat dealer has videotapes, literature and other ideas to help you increase productivity, and Caterpillar offers certified operator training classes to help maximize the return on your machine investment.

Maintenance Services. Talk to your dealer about the range of available maintenance services. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•S℠ Analysis and Coolant Sampling and Technical Analysis help avoid unscheduled repairs.

Replacement. Repair, rebuild or replace? Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

Engine

Tractor Engine	Cat C18 ACERT™
Scraper Engine	Cat C15 ACERT

Tractor Engine

Net Power	421/447 kW	564/600 hp
Gross Power – Gears 1-2	445 kW	596 hp
Gross Power – Gears 3-8	471 kW	632 hp
Net Power – Gears 1-2	421 kW	564 hp
Net Power – Gears 3-8	447 kW	600 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,105 in^3

- Net power advertised is the power available at rated speed of 1,800 rpm, measured at flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Gross power and net power ratings apply at 1,800 rpm when tested under the specified standard conditions for ISO 9249 and EEC 80/1269.

Scraper Engine

Net Power	306/337 kW	410/451 hp
Gross Power – Gears 1-2	326 kW	437 hp
Gross Power – Gears 3-8	356 kW	478 hp
Net Power – Gears 1-2	306 kW	410 hp
Net Power – Gears 3-8	337 kW	451 hp
Bore	137 mm	5.4 in
Stroke	171.5 mm	6.8 in
Displacement	15.2 L	928 in^3

- Net power advertised is the power available at rated speed of 1,800 rpm, measured at flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Gross power and net power ratings apply at 1,800 rpm when tested under the specified standard conditions for ISO 9249 and EEC 80/1269.

Scraper Bowl

Heaped Capacity	33.6 m^3	44 yd^3
Rated Load	47 200 kg	104,058 lb
Struck Capacity	24.5 m^3	32 yd^3
Depth of Cut – Max.	425 mm	16.7 in
Width of Cut, to Router Bits	3846 mm	12.7 in
Ground Clearance – Max.	545 mm	21.5 in
Cutting Edge – Thickness	22 mm	0.88 in
Hyd. Penetration Force – 657G	542 kN	121,000 lb
Depth of Spread – Max.	680 mm	26.77 in
Apron Opening	2340 mm	92 in
Apron Closure Force	176 kN	39,200 lb

Transmission

1 Forward	5.5 km/h	3.4 mph
2 Forward	10 km/h	6.2 mph
3 Forward	10.9 km/h	6.8 mph
4 Forward	14.8 km/h	9.2 mph
5 Forward	19.8 km/h	12.3 mph
6 Forward	26.9 km/h	16.7 mph
7 Forward	36 km/h	22.4 mph
8 Forward	55.7 km/h	36 mph
Reverse	9.7 km/h	6 mph

Hydraulics

Bowl Cylinder Bore	235 mm	9.25 in
Bowl Cylinder Stoke	950 mm	37.4 in
Apron Cylinder Bore	235 mm	9.25 in
Apron Cylinder Stroke	760 mm	29.92 in
Ejector Cylinder Bore	260 mm	10.24 in
Ejector Cylinder Stroke	1946 mm	76.61 in
Steering Circuit	435 L/min	115 gal/min
Scraper Circuit	579 L/min	153 gal/min
Cushion Hitch Circuit	56 L/min	15 gal/min
Secondary Steering Circuit	430 L/min	113.6 gal/min
Relief Valve – Steering Circuit	13 500 kPa	1,959 psi
Relief Valve – Implement Circuit	13 800 kPa	2,000 psi
Compensator Setting – Cushion Hitch Circuit	20 670 kPa	3,000 psi

- Steering circuit, scraper implement circuit and cushion hitch circuit measured at 2,000 rpm.
- Optional secondary steering circuit measured at 24 km/h (14.9 mph).

Steering

Width – 180° Turn, Right	13.82 m	45 ft 4 in
Width – 180° Turn, Left	14.73 m	48 ft 4 in
Steering Angle – Right	90°	
Steering Angle – Left	85°	

- Optional secondary steering system meets SAE J1511 (OCT 90) and ISO 5010 (1992) requirements.

Service Refill Capacities – Tractor

Crankcase	60 L	15.85 gal
Transmission	136 L	36 gal
Differential	138 L	36.5 gal
Final Drive (per side)	23 L	6 gal
Cooling System	144 L	38 gal
Hydraulic Reservoir	310 L	81.9 gal
Wheel Coolant (each)	130 L	34.3 gal
Windshield Washer	6 L	1.5 gal

Service Refill Capacities – Scraper

Fuel Tank – 657G	1597 L	421.9 gal
Crankcase	34 L	8.9 gal
Transmission	133 L	35 gal
Differential	163 L	43 gal
Final Drive (per side)	23 L	6 gal
Wheel Coolant (each)	130 L	34.3 gal
Cooling System	110 L	29 gal

Weights – Standard, tandem

Total Shipping	66 615 kg	146,861 lb
Tractor Shipping	39 969 kg	88,117 lb
Scraper Shipping	26 646 kg	58,745 lb
Total Operating – Empty	67 774 kg	149,417 lb
Front Axle	40 665 kg	89,650 lb
Rear Axle	27 110 kg	59,767 lb
Total Operating – Loaded	114 949 kg	253,420 lb
Front Axle Weight – Loaded	58 624 kg	129,244 lb
Rear Axle Weight – Loaded	56 325 kg	124,176 lb

Weights – Push-Pull

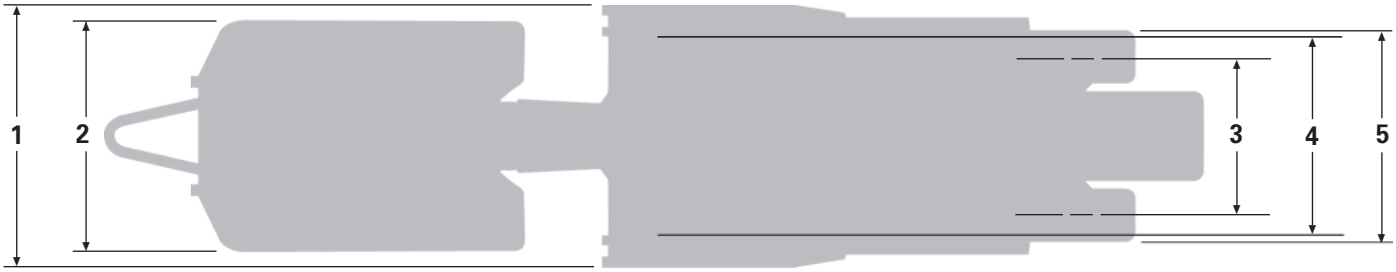
Total Shipping	70 395 kg	155,194 lb
Tractor Shipping	42 023 kg	92,644 lb
Scraper Shipping	28 372 kg	62,550 lb
Total Operating – Empty	71 554 kg	157,750 lb
Front Axle	42 715 kg	94,170 lb
Rear Axle	28 839 kg	63,580 lb
Total Operating – Loaded	118 729 kg	261,753 lb
Front Axle – Loaded	60 552 kg	133,494 lb
Rear Axle – Loaded	58 177 kg	128,259 lb

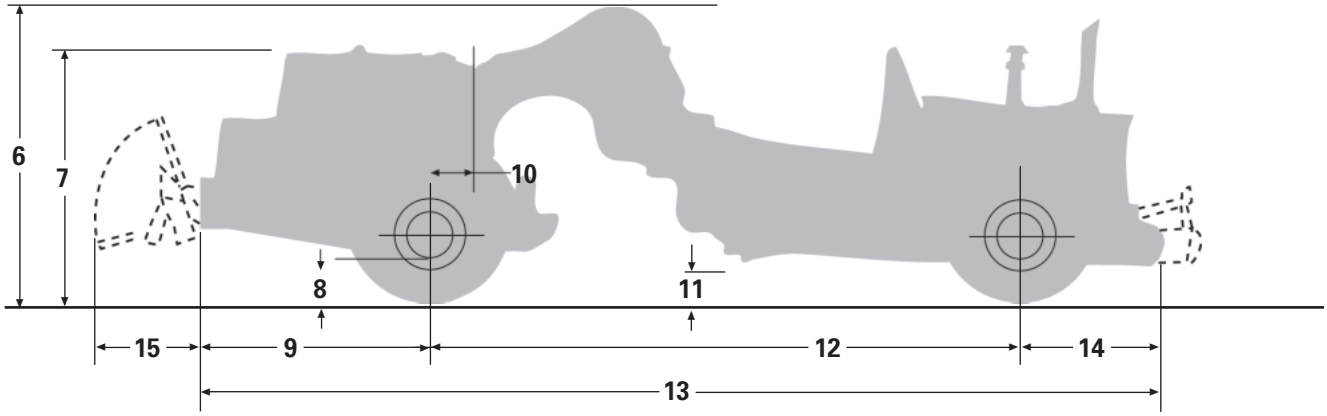
Standards

- Standard Rollover Protective Structure (ROPS) which meets SAE J320a, SAE J1040 MAY 94, ISO 3471-1986 and ISO 3471-1994
- Falling Object Protective Structure (FOPS) which meets SAE J231 JAN 81 and ISO 3449-1992
- Cab meets OSHA and MSHA limits for operator and sound exposure with doors and windows closed (according to ANSI/SAE J1166 May 90). The operator sound pressure level is less than 85 dB(A) when measured per ISO 6394 or 86/662/EEC.
- Standard air conditioning system contains environmentally friendly R134a refrigerant.
- Brakes meet ISO 3450: 1998

Dimensions

All dimensions are approximate.





1	Width – Overall Machine	4344 mm	171.02 in
2	Width – Tractor	3601 mm	141.77 in
3	Width – Rear Tire Center Lines	2633 mm	103.66 in
4	Width – Inside of Bowl	3683 mm	145 in
5	Width – Outside Bowl (shipping width)	3914 mm	154 in
6	Height – Overall Shipping	4710 mm	185.43 in
7	Height – Top of Cab	3712 mm	146.14 in
8	Ground Clearance, Tractor	645 mm	25.39 in

9	Front of Tractor to Front Axle	3770 mm	148.42 in
10	Axle to Vertical Hitch Pin	608 mm	23.94 in
11	Height – Scraper Blade Max.	680 mm	26.77 in
12	Wheelbase	9956 mm	391.97 in
13	Length – Overall Machine	16 164 mm	636.38 in
14	Rear Axle to Rear of Machine	2438 mm	95.98 in
15	Bail Length – Max. (push-pull)	1836 mm	72.28 in

Weights

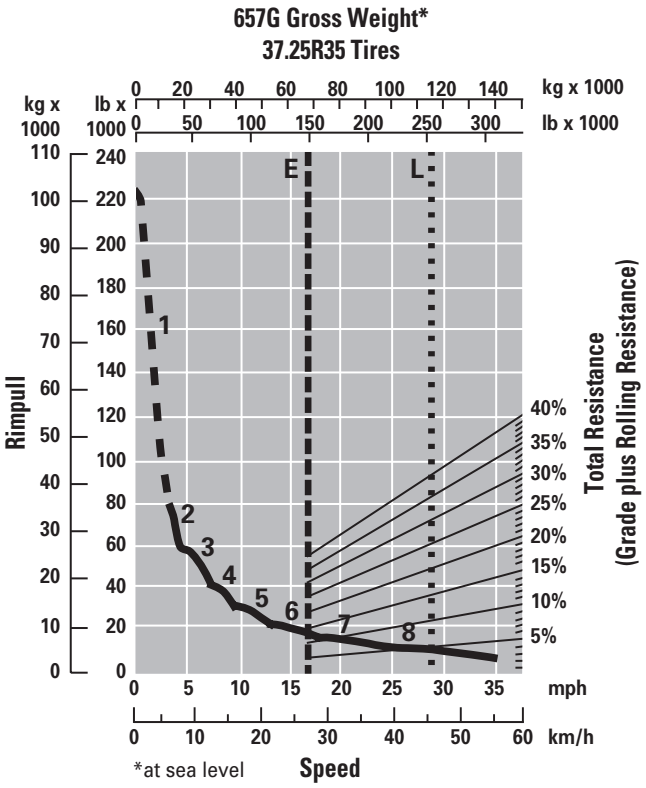
(approximate)

Model	657G Standard		657G Push-pull	
Shipping, with ROPS cab and 10% fuel				
Tractor	60%		60%	
	39 969 kg	88,117 lb	42 023 kg	92,644 lb
Scraper	40%		40%	
	26 646 kg	58,745 lb	28 372 kg	62,550 lb
Total 100%	**66 615 kg**	**146,861 lb**	**70 395 kg**	**155,194 lb**
Operating empty, with ROPS cab, full fuel tanks and no operator				
Front axle	60%		60%	
	40 665 kg	89,650 lb	42 715 kg	94,170 lb
Rear axle	40%		40%	
	27 110 kg	59,767 lb	28 839 kg	63,580 lb
Total 100%	**67 774 kg**	**149,417 lb**	**71 554 kg**	**157,750 lb**
Loaded, based on a rated load of:	**47 175 kg**	**104,003 lb**	**47 175 kg**	**104,003 lb**
Front axle	51%		51%	
	58 624 kg	129,244 lb	60 552 kg	133,494 lb
Rear axle	49%		49%	
	56 325 kg	124,176 lb	58 177 kg	128,259 lb
Total 100%	**114 949 kg**	**253,420 lb**	**118 729 kg**	**261,753 lb**

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

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.

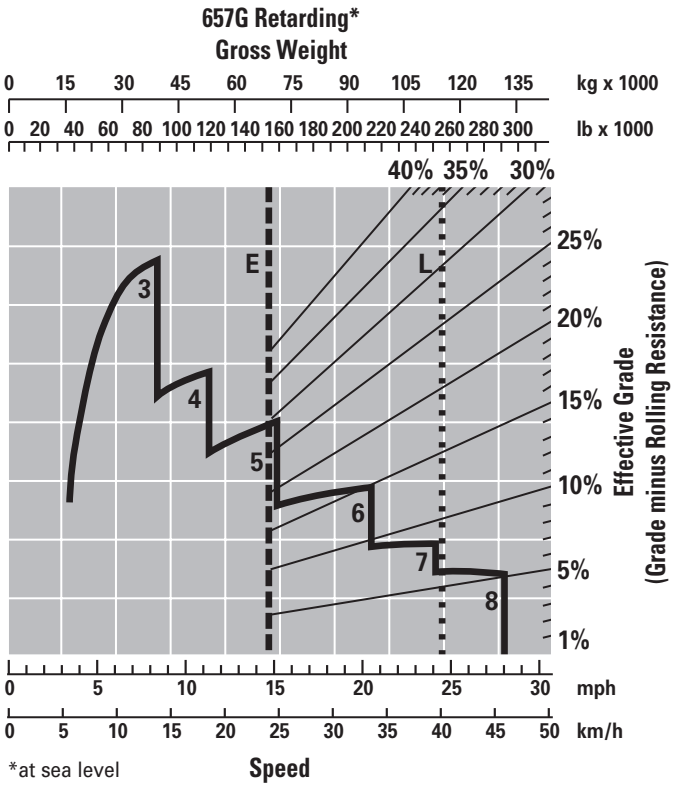


1—1st Gear Torque Converter Drive
2—2nd Gear Torque Converter Drive
3—3rd Gear Direct Drive
4—4th Gear Direct Drive
5—5th Gear Direct Drive
6—6th Gear Direct Drive
7—7th Gear Direct Drive
8—8th Gear Direct Drive

E—Empty 67 774 kg (149,417 lb)
L—Loaded 114 949 kg (253,420 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.



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 67 774 kg (149,417 lb)
L—Loaded 114 949 kg (253,420 lb)

Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for details.

ELECTRICAL
- Alarm, backup
- Alternator, 75 amp – tractor engine
- Alternator, 35 amp – scraper engine
- Batteries (4), 12V maintenance free, high output
- Batteries (2), 12V maintenance free, high output
- Electrical system, 24V
- Lighting System – Tractor
  - Directional signals
  - Hazard lights
  - Headlights, halogen with dimmer
  - Floodlight, cutting edge
- Lighting System – Scraper
  - Directional signals
  - Hazard lights
  - Stop/tail
- Starting receptacle – tractor and scraper engines

OPERATOR ENVIRONMENT
- Air conditioner (includes heater and defroster)
- Automotive style fuse panel w/fuse puller
- Cigarette lighter and ashtray
- Coat hook
- Cup holder
- Diagnostic connection port (12V)
- Dome courtesy light
- Engine speed lock
- Gauge group
  - Air pressure
  - Converter/retarder temperature
  - Electronic Monitoring System (EMS III)
  - Engine coolant temperature
  - Actual transmission gear indicator
  - Fuel
  - Speedometer
  - Tachometer
  - Transmission gear indicator
- Horn
- Implement control joystick
- Rearview mirrors
- Radio ready
- 2 radio openings, speakers, and 5-amp converter
- ROPS cab with sound suppression and pressurization
- Static seatbelt
- Scraper engine controls
- Seat, air suspension, Caterpillar Comfort, cloth
- Steering wheel – tilt and telescoping
- Storage compartment
- Transmission hold
- Windows – sliding side, swing out
- Windshield – laminated glass
- Windshield wiper/washer – front and rear
- Wrist rest/grab handle

Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for details.

POWER TRAIN
- Tractor
  - Engine
    - Cat C18, ACERT™ Technology
      - 6-cylinder, turbocharged diesel
    - Mechanically-actuated Electronic Unit Injection (MEUI)
    - Air cleaner, dry-type with pre-cleaner
    - Electric start, 24V
    - Fan, suction
    - Radiator, NGMR (9 fins per inch)
    - Ground level engine shutdown
    - Guard, crankcase
    - Muffler
    - Starting aid, ether
  - Braking system
    - Parking/primary/secondary/hydraulic retarder
    - Shields – brake
  - Transmission
    - 8-speed automatic powershift with electronic control
    - Control throttle shifting
    - Differential lock-up
    - Downshift inhibitor
    - Neutral coast inhibitor
    - Programmable top-gear selection
    - Transmission hold
- Scraper
  - Engine
    - Cat C15, ACERT Technology
      - 6-cylinder, turbocharged diesel
    - Mechanically-actuated Electronic Unit Injection (MEUI)
    - Electric start from the cab, 24V
    - Fan, suction
    - Radiator, NGMR (9 fins per inch)
    - Ground level engine shutdown
    - Muffler
    - Starting aid, ether
    - Thermo-shield, laminated
  - Braking system
    - Parking/primary/secondary/hydraulic retarder
    - Shields – brake
  - Transmission
    - 8-speed automatic power shift with electronic control

OTHER STANDARD EQUIPMENT
- Tractor
  - Air dryer
  - Auto ether aid
  - Cushion hitch
  - Extended Life Coolant, –36° C (–33° F)
  - Fast oil change
  - Fenders
  - Guard, bottom
  - Guard, crankcase
  - Hydraulic retarder
  - Locks, vandalism protection
  - Product Link Ready
  - Tires, 40.5/75 R39 radial
  - Tow pins – front and rear
- Scraper
  - Extended Life Coolant, –36° C (–33° F)
  - Engine coolant heater
  - Fuel system, fast fill (meets EEC regulations)
  - Fast oil change
  - Fenders
  - Hydraulic retarder
  - Locks, vandalism protection
  - Overflow guard
  - Tires, 40.5/75 R39 radial

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for details.

Auger
Heater, engine coolant
Lights, side vision
Push block, extended
Push-pull arrangement
Steering, secondary
Extended Life Coolant, –50° C (–58° F)
Fan, defroster
Lock, steering
Push-pull arrangement w/rear radiator guard
Retractable seat belts
Product Link

657G Wheel Tractor Scraper

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com**

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

AEHQ5652-01 (12-08)

Replaces AEHQ5652

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