



Cat[®] 657

Coal Bowl Wheel Tractor-Scraper

The Cat[®] 657 Coal Bowl Wheel Tractor-Scraper features a purpose-built coal bowl that allows you to move high volumes of low-density, loose coal. Combine this with improved strength and durability, enhanced operator comfort, and new safety features – Powered Access System and effective wet disc brakes – and you have a machine that is up to the task of moving loose coal efficiently and effectively.

Purpose-Built Coal Bowl

- Large capacity coal bowl scrapers are longer and higher than standard open bowl scrapers.
- Purpose-built coal bowl dual engine scrapers deliver faster cycle times with maximum payloads.
- High ground speed provides the ability to manage stockpiles.
- Machine is designed for loading, hauling, and compaction for complete functionality.
- Work effectively in poor underfoot conditions and climb slippery piles and loose coal.
- Coal bowl scrapers provide effective coal compaction, which reduces the risk of spontaneous combustion in coal stockpiles by eliminating the air spaces.
- Specialty coal bowl scrapers are optimized for maximum machine productivity and efficiency.

Be More Productive

- The Advanced Productivity Electronic Control System (APECS) enables communication between the engine and transmission to effectively optimize power and torque output. This integration results in enhanced efficiency with a net result is moving more material.
- Use Ground Speed Control to set the desired top speed and the machine will find the gear that works best for the engine and the transmission, providing a lower fuel burn.
- The machine speed limit feature allows the machine to maintain a set top speed instead of relying on top gear selector.
- Auto-Stall assists in quickly bringing the transmission to an operating temperature at start-up when the machine is working in a cold climate region.

Work in Comfort

- Steer with less effort with the newly designed high-pressure steering system.
- Reduce up to 14 individual operator commands per cycle with Sequence Assist.
- Enjoy interior improvements and a more ergonomic work environment with a 21% larger cab than the 657 G Series cabs.
- Intuitive, ergonomic controls with multifunction display keep operators focused on their work.
- Maintain desired cab temperature with automatic temperature control.



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Designed for Safety

- The powered access ladder, included as a standard feature, enables easier entry and exit from the cab.
- Enhance the operator's awareness of site surroundings with the Work Area Vision System (WAVS).
- Convenient ground-level access to fuel fill and multiple maintenance points, ensuring safer and more efficient service.
- Seat belt indicator provides visual and audible alerts when the seat belt is not in use.
- The fuel fill, fuel filter, engine oil filter, engine oil change, and water drain are easily accessible at ground level.

Easy to Operate

- Engine overspeed protection will automatically engage with no operator input when the machine is in eighth gear. The machine will assist in slowing the machine speed by canceling the throttle command and engaging the engine compression brake.
- The spacious cab features easy, intuitive controls and excellent visibility. The cab provides a comfortable working environment for all-day operation.

Integrated Cat Technologies

- Access information anytime, anywhere with VisionLink™—use it to make informed decisions that boost productivity, lower costs, simplify maintenance, and improve safety and security on your jobsite.
- Product Link™ collects machine data that can be viewed online through web and mobile applications.

Execute Efficiency

- The Cat C18 tractor and C15 scraper engines meet U.S. EPA Tier 4 Final and EU Stage V emission standards, contributing to lower fuel consumption.
- The tractor hydraulic demand fan helps lower fuel consumption.
- Monitor, manage, and enhance jobsite operations.

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Standard Equipment and Optional Attachments

Standard equipment and optional attachments may vary. Consult your Cat® dealer for details.

	Standard	Optional		Standard	Optional
POWERTRAIN – TRACTOR			OPERATOR ENVIRONMENT – TRACTOR (CONTINUED)		
Cat® C18 (Meets U.S. EPA Tier 4 Final and EU Stage V emission standards)	✓		Lunchbox platform with holding strap	✓	
Cat engine brake	✓		Diagnostic connection	✓	
Differential Lock	✓		12V power ports (2)	✓	
Electric start, 24V	✓		Dome courtesy light	✓	
Fan, hydraulic	✓		Horn, electric	✓	
Ground-level engine shutdown	✓		T-Handle implement control	✓	
Guard, crankcase	✓		254 mm (10 in) touchscreen information display	✓	
Starting aid, ether	✓		Radio ready	✓	
Braking system: primary and secondary, wet disc, hydraulic; parking, hydraulic released, spring-applied	✓		Rollover protective structure/falling objects protective structure (ROPS/FOPS) cab, pressurized	✓	
Transmission: 8-speed planetary powershift, Electronic Clutch Pressure Control (ECPC), Advanced Productivity Electronic Control Strategy (APECS) software, programmable top gear selection, transmission hold, guard – powertrain, ground speed control, machine speed limit	✓		Keypad switches: throttle lock, wipers/washers, hazard lights, retarding level select, work lights on/off, information mode on the touchscreen display with a machine-specific keypad and optional tool automation keypad, and parking brake.	✓	
POWERTRAIN – SCRAPER			Seat belt, static two-piece	✓	
Cat C15 (Meets U.S. EPA Tier 4 Final and EU Stage V emission standards)	✓		Steering wheel, tilt, telescoping, padded	✓	
Cat engine brake	✓		Windows, right side emergency egress	✓	
Electric start, 24V	✓		Work Area Vision (3) Camera System	✓	
Fan, mechanical drive	✓		Powered access ladder	✓	
Ground-level engine shutdown			Safety tab rocker switches	✓	
Starting aid, ether	✓		Seat – Cat Advanced Ride Management (ARM), Cat Comfort Series III, rotates 30 degrees	✓	
Braking system: primary and secondary, wet disc, hydraulic; parking, hydraulic released, spring-applied	✓		FLUIDS		
Transmission: 8-speed planetary powershift, Electronic Clutch Pressure Control (ECPC), Advanced Productivity Electronic Control Strategy (APECS) software, programmable top gear selection, transmission hold, guard – powertrain, ground speed control, machine speed limit	✓		Extended life coolant to -37°C (-34°F)	✓	
ELECTRICAL – TRACTOR			OTHER STANDARD EQUIPMENT – TRACTOR		
Alternator, 115 amp	✓		Fast oil change (engine)	✓	
Batteries (4), 12V, 1,000 CCA, maintenance-free	✓		Vandalism locks	✓	
Electrical system, 24V	✓		Steering locks	✓	
Lighting system: LED headlights low beam and high beam, flood lights, cutting edge and bowl lights are LED.	✓		Heater, engine coolant 120V	✓	
Starting/charging receptacle	✓		OTHER STANDARD EQUIPMENT – SCRAPER		
ELECTRICAL – SCRAPER			Bowl	✓	
Alarm, backup	✓		Fast oil change (engine)	✓	
Lighting system: brake lights – LED, turn signals with hazard function – LED	✓		Vandalism locks	✓	
Alternator, 115 amp	✓		Heater, engine coolant 120V	✓	
Batteries (4), 12V, 1,000 CCA, maintenance free	✓		Hydraulic position sensing cylinders (bowl lift and apron)	✓	
Electrical system, 24V	✓		OTHER ATTACHMENTS		
Starting/charging receptacle	✓		Cab beacon with air horn		✓
OPERATOR ENVIRONMENT – TRACTOR			SERVICE INSTRUCTIONS		
HVAC powered air precleaner	✓		Film arrangement – U.S. (ANSI)		✓
HVAC system, heat, AC, defrost	✓		Film arrangement – International (ISO)		✓
Thermostat control of HVAC system	✓		INTEGRATED TECHNOLOGIES		
Coat hook	✓		Sequence Assist	✓	
			Product Link™		✓

Cat® 657 Coal Bowl Wheel Tractor-Scraper

Technical Specifications

Engine – Tractor

Engine Model	Cat® C18
Rated Engine Speed	2,000 rpm
Engine Power (ISO 14396:2002)	469 kW 629 hp

Engine – Scraper

Engine Model	Cat C15
Rated Engine Speed	2,100 rpm
Engine Power (ISO 14396:2002)	353 kW 473 hp

- Meets U.S. EPA Tier 4 Final and EU Stage V emission standards.

General Data

Scraper Capacity:		
Struck	45.1 m³	59.0 yd³
Heaped	55.8 m³	73.0 yd³
Rated Load	49 895 kg 110,000 lb	49.1 tonnes 55.0 tons
Width of Cut	3.8 m	12.5'
Maximum Depth of Cut (Cushion Hitch Locked)	417 mm	16.4"
Maximum Depth of Spread	660 mm	26.0"
Top Speed (Loaded)	56.1 km/h	34.9 mph
180° Curb-to-Curb Turning Width (Right)	14.7 m	48.2'
Tire Size	40.5/75 R39 ** E-3	
Operating Weight		
Unloaded	74 850 kg	165,000 lb
With Rated Load	122 050 kg	269,075 lb
Overall Length	17.35 m	56.9'

Service Refill Capacities

Crankcase:		
Tractor	52.0 L	13.7 gal
Scraper	34.0 L	9.0 gal
Transmission System:		
Tractor	136.0 L	35.9 gal
Scraper	121.0 L	32.0 gal
Cooling System:		
Tractor	88.6 L	23.4 gal
Scraper	63.2 L	16.7 gal
Fuel Tank	1628.0 L	430.1 gal
Hydraulic System	150.0 L	39.6 gal
Diesel Exhaust Fluid:		
Tractor	30.5 L	8.1 gal
Scraper	22.0 L	5.8 gal

Transmission

First	5.7 kph	3.5 mph
Second	10.5 kph	6.5 mph
Third	12.5 kph	7.8 mph
Fourth	17.0 kph	10.6 mph
Fifth	22.8 kph	14.2 mph
Sixth	30.9 kph	19.2 mph
Seventh	41.4 kph	25.7 mph
Eighth	56.1 kph	34.9 mph
Reverse	10.8 kph	6.7 mph

Safety Criteria Compliance Standards

Rollover Protective Structure (ROPS)	ISO 3471:2008 for up to 26 600kg (58,643 lb)
Falling Objects Protective Structure (FOPS)	ISO 3449:2005 Level II
Brakes	ISO 3450:2011
Steering System	ISO 5010:2007
Seat Belt	ISO 6683:2005, SAE J386
Forward Horn and Reverse Alarm	ISO 9533:2010

Sound

- Exterior Sound Power Level for Standard Machine ISO 6395:2008 is 116 dB(A)
- Interior Sound Pressure Level for Standard Machine ISO 6396:2008 is 75 dB(A)
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.
(1) The measurement was conducted at 100% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.
(2) This is a work cycle sound exposure level. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.

Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. Refer to the machine labeling for identification of the gas.
 - If equipped with R134a (Global Warming Potential = 1430), the system contains 1.9 kg (4.2 lb) of refrigerant which has a CO₂ equivalent of 2.71 metric tonnes (2.674 tons).
 - If equipped with R1234yf (Global Warming Potential = 0.501), the system contains 1.85 kg (4.1 lb) of refrigerant which has a CO₂ equivalent of 0.001 metric tonnes (0.001 tons).

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