



Cat[®] 631

Wheel Tractor-Scraper

Since 1960, the 631 family of wheel tractor-scrapers has been a signature machine for Caterpillar and the current 631 edition stays true to its original characteristics – built with strength and durability in mind for today and tomorrow’s work. No matter how difficult the task is for a construction or mining project, the 631 delivers results with the ability to load and dump on the run with fast cycle times on any earthmoving site worldwide. Its single engine allows for lower operating costs in applications and minimal rolling resistance, allowing the delivery of high productivity at the lowest cost per ton.

Be More Productive

- Up to 8% improvement in productivity.
- Advanced productivity electronic control system (APECS) allows the engine and transmission to communicate on a high level. This communication allows the machine to better utilize the power and torque the engine is producing. The 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 replaces top gear selection, allowing the machine to find the correct gear that works best for the engine and transmission. Pulling the load in the correct gear, in most cases, results in lower engine load factor and lower fuel burn.
- Auto-stall assists in quickly bringing the transmission to an operating temperature at startup when the machine is working in a cold climate region.
- Cat[®] Payload Estimator for scrapers is an earthmoving solution for optimal payload and jobsite efficiency. Payload Estimator achieves on-the-go weighing by using bowl lift cylinder pressure during the loaded haul segment. Payload Estimator is optimized to be used with sequence assist, which provides increased productivity with less operator effort. Payload Estimator is an automatic feature when ordered with sequence assist.

Work in Comfort

- Reduce up to 14 individual operator commands per cycle with sequence assist (optional attachment).
- Steer with less effort using the newly designed high-pressure steering system.
- Enjoy interior improvements and a more ergonomic work environment with a 21% larger cab than the G Series cab.
- Intuitive, ergonomic controls keep operators focused on their work.
- Maintain desired cab temperature with automatic temperature control.

Designed for Safety

- Get in and out of the cab easier with the new powered access ladder system (optional attachment).
- Enhance an operator’s awareness of site surroundings with the optional work area vision system (WAVS).
- Seat belt indicator provides visual and audible alerts when the seat belt is not in use.
- Advanced cushion hitch allows the cushion hitch to prevent end stroke by having the ability to predict end stroke events and manage the rate of dampening, resulting in reduced hitch maintenance and improved operator ride in rough conditions.
- Easy ground level access to fuel, water, and engine oil.



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Easy to Operate

- The spacious cab features easy, intuitive controls and excellent visibility. The cab provides a comfortable working environment for all-day operation.
- Cat advanced ride management (ARM) seat suspension reduces end stroke movement of the load cylinder for a smoother ride.
- 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.

Integrated Cat Technologies

- Monitor, manage, and enhance jobsite operations.
- Hit target grade faster and more accurately with Cat Grade technologies. Finish jobs in fewer passes and with less operator effort, saving you time and helping to increase profit.
- Product Link™ collects machine data that can be viewed online through web and mobile applications (optional attachment).

- 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.
- Shorten the learning curve for inexperienced operators with load assist (optional attachment).

Execute Efficiency

- The new tractor hydraulic on-demand fan helps assist in lower fuel consumption.
- Using draft-arm overflow guards diverts material away from the bowl, preventing material from getting caught between the draft arms and the bowl sides.
- Cat Grade Control (optional attachment) intelligently ensures the machine does not cut below grade in a cut area or overfill in the fill area.

Standard Equipment and Optional Attachments

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

	Standard	Optional		Standard	Optional
POWERTRAIN – TRACTOR					
Cat C18 engine with Mechanically Actuated Electronic Unit Injection (MEUI™)	✓		Messenger display		✓
Cat engine brake	✓		FLUIDS		
Electric start, 24V	✓		Extended life coolant to -37° C (-34° F)		✓
Fan, hydraulic	✓		OTHER STANDARD EQUIPMENT – TRACTOR		
Ground level engine shutdown	✓		Advanced cushion hitch		✓
Guard, crankcase	✓		Accumulators (cushion hitch and brake) with Canadian registration number (CRN)		✓
Starting aid, ether	✓		Fast oil change (engine)		✓
Braking system: primary and secondary, wet disc, hydraulic; parking, hydraulic-released, spring-applied	✓		Fenders, non-metallic		✓
Transmission: 8-speed planetary powershift, electronic clutch pressure control (ECPC), advanced productivity electronic control strategy (APECS) software, programmable top gear selection, transmission hold, differential lock, transmission guard, ground speed control, machine speed limit	✓		Heater, engine coolant 120V		✓
POWERTRAIN – SCRAPER					
Braking system: primary and secondary, dry disc, hydraulic	✓		Tow pin, front		✓
ELECTRICAL – TRACTOR					
Alternator, 115 amp	✓		OTHER STANDARD EQUIPMENT – SCRAPER		
Batteries (4), 12V, 1,000 CCA, maintenance free	✓		Bowl: 18.4 m³ (24.0 yd³) – heaped, 26.0 m³ (34.0 yd³) – struck		✓
Electrical system, 24V	✓		Hydraulic position sensing cylinders (bowl lift and apron)		✓
Lighting system: LED low beam, high beam, and work lights	✓		STEERING ARRANGEMENTS		
Starting/charging receptacle	✓		Secondary steering (ground driven)		✓
ELECTRICAL – SCRAPER					
Alarm, backup	✓		INTEGRATED TECHNOLOGIES		
Lighting system: brake lights-LED, turn signals with hazard function-LED	✓		Product Link™		✓
OPERATOR ENVIRONMENT – TRACTOR					
HVAC powered air precleaner	✓		Sequence Assist CPM – Payload Estimator and Cat Production Measurement		✓
HVAC system, heat, AC, defrost	✓		Load assist		✓
Thermostat control of HVAC system	✓		Cat Grade Control with load assist		✓
Coat hook	✓		OTHER ATTACHMENTS		
Lunchbox platform with holding strap	✓		Push-pull		✓
Diagnostic connection (2)	✓		Fast-fill fuel tank		✓
Dome courtesy light	✓		Camera arrangement – work area vision system (WAVS)		✓
Horn, electric	✓		Steering lock – external		✓
T-handle implement control	✓		Cab beacon		✓
Radio ready	✓		Air horn		✓
Rollover protective structure (ROPS)/falling objects protective structure (FOPS) cab, pressurized	✓		Fender, scraper		✓
Keypad switches: throttle lock, wipers/washers, hazard lights, retarding level select, work lights on/off, information mode on messenger display	✓		Guard, overflow		✓
Powered access		✓	Year of manufacture plate		✓
Safety tab rocker switches	✓		SERVICE INSTRUCTIONS		
Seat – Cat advanced ride management (ARM), Cat Comfort Series III, rotates 30 degrees	✓		Film arrangement – U.S. (ANSI)		✓
Steering wheel, tilt, telescoping, padded	✓		Film arrangement – International (ISO)		✓
Windows, right side emergency egress	✓				

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Technical Specifications

Engine

Engine Model: Tractor	Cat® C18	
Rated Engine Speed: Tractor	1,900 rpm	
Engine Power (ISO 14396:2002)	425 kW	570 hp
<ul style="list-style-type: none"> Meets U.S. EPA Tier 4 Final or EU Stage V emission standards, or equivalent to U.S. EPA Tier 3 and EU Stage IIIA, or equivalent to U.S. EPA Tier 2. Net power available at the flywheel when the engine is equipped with fan, air cleaner, aftertreatment, and alternator with engine speed at 1,900 rpm. 		

General Data

Overall Width	3.94 m	12'11"
Overall Shipping Height	3.89 m	12'9"
Scraper Capacity:		
Struck	18.3 m³	24.0 yd³
Heaped	26.0 m³	34.0 yd³
Rated Load	37 200 kg 37.2 tonnes	82,200 lb 41.1 tons
Width of Cut	3.51 m	17'7"
Maximum Depth of Cut	450 mm	12.4"
Maximum Depth of Spread	535 mm	21.1"
Top Speed (Loaded)	55.8 km/h	34.7 mph
180° Curb-to-Curb Turning Width	12.23 m	40'2"
Tires:		
Tractor Drive	33.25R29**E3	
Scraper	33.25R29**E3	

Non Push-Pull

Operating Weight (Empty)	46 600 kg	102,750 lb
Overall Length	15.04 m	49'4"

Push-Pull

Operating Weight (Empty)	48 275 kg	106,430 lb
Overall Length (With Bail Down)	16.64 m	54'7"

Transmission

Speed	km/h	mph	Speed	km/h	mph
Forward 1	5.5	3.4	Forward 6	30.6	19.0
Forward 2	10.0	6.2	Forward 7	41.4	25.7
Forward 3	12.4	7.7	Forward 8	55.8	34.7
Forward 4	16.9	10.5	Reverse 1	9.9	6.2
Forward 5	22.7	14.1			

Service Refill Capacities

Differential	158.0 L	41.7 gal
Final Drive (Each)	19.0 L	5.0 gal
Rear Wheels (Each)	4.0 L	1.0 gal
Brake Cooling (Scraper)	33.0 L	8.7 gal
Crankcase (Tractor)	52.0 L	13.7 gal
Transmission System	110.0 L	29.0 gal
Cooling System	75.0 L	19.8 gal
Fuel Tank	874.0 L	231.0 gal
Hydraulic System	142.0 L	37.5 gal
Diesel exhaust fluid (DEF) tank*	30.5 L	8.0 gal

*When equipped

Safety Criteria Compliance Standards

Rollover Protective Structure (ROPS)	ISO 3471:2008 for up to 21 282 kg (46,919 lb)
Falling Object Protective Structure (FOPS)	ISO 3449:2005 Level II
Brakes	ISO 3450:2011
Steering System	ISO 5010:2007
Seat Belt	SAE J386:FEB2006
Reverse Alarm	ISO 9533:2010

Implement Cycle Times

Bowl Raise	3.5 seconds
Bowl Lower	3.5 seconds
Apron Raise	4.0 seconds
Apron Lower	3.8 seconds
Ejector Extend	8.5 seconds
Ejector Retract	8.5 seconds
Bail Raise	1.5 seconds
Bail Lower	2.1 seconds

Cab

ROPS/FOPS	ISO 3471:2008 ISO 3449:2005 Level II
• The exterior sound power level for the standard machine (ISO 6393:2008) is 111.5 dB(A).	

Air Conditioning

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.9 kg (4.2 lbs) of refrigerant which has a CO₂ equivalent of 2.71 metric tonnes (2.674 tons).

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(Global)