



Cat[®] 651

Wheel Tractor-Scraper

The 651 has rejoined our wheel tractor-scraper lineup. Delivering high levels of productivity, the 651 single engine earthmoving system is a wise choice on numerous large-scale projects by providing fast cycle times when working in lower grades and rolling resistance applications. First introduced into the Cat[®] wheel tractor-scraper lineup in 1962, the 651 continues to uphold its legacy as one of our signature machines. Its single engine power provides the ability to work with a Cat D10 or D11 Dozer, delivering ultra-fast load times and the ability to work in abrasive or rocky conditions. With improvements in productivity combined with enhancements in operator comfort and new safety features – Powered Access System and effective wet disc brakes – this machine offers high returns on investment and time.

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 of 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.
- Cat Payload for scrapers is an earthmoving solution for optimal payload and jobsite efficiency. Cat Payload achieves on-the-go weighing by using bowl lift cylinder pressure during the loaded haul segment. Cat Payload is optimized to be used with Sequence Assist, which provides increased productivity with less operator effort.

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 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 powered access ladder system.
- Enhance the operator's awareness of site surroundings with the Work Area Vision System (WAVS).
- Convenient ground-level access to fuel fill, filters, engine oil change, and water drain for safer, easier access and more efficient service.
- Seat belt indicator provides visual and audible alerts when the seat belt is not in use.

Easy to Operate

- 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.
- The spacious cab features easy, intuitive controls and excellent visibility. The cab provides a comfortable working environment for all-day operation.



Cat® 651 Wheel Tractor-Scraper

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 (optional attachment).
- 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.
- Monitor, manage, and enhance jobsite operations.
- Shorten the learning curve for inexperienced operators with Sequence Assist.

Execute Efficiency

- The Cat C18 tractor engine meets U.S. EPA Tier 4 Final and EU Stage V emission standards, contributing to lower fuel consumption.
- The tractor hydraulic on-demand fan helps assist in lower fuel consumption.
- Cat Grade (optional attachment) 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 | | | OPERATOR ENVIRONMENT – TRACTOR (CONTINUED) | | |
| Cat® C18 engine (Meets U.S. EPA Tier 4 Final and EU Stage V emission standards) | ✓ | | Keypad switches: throttle lock, wipers/washers, hazard lights, retarding level select, work lights on/off, information mode on the touchscreen display | ✓ | |
| Cat engine brake | ✓ | | Seat belt, static two-piece | ✓ | |
| Differential Lock | ✓ | | Steering wheel, tilt, telescoping, padded | ✓ | |
| Electric start, 24V | ✓ | | Windows, right side emergency egress | ✓ | |
| Fan, hydraulic | ✓ | | Work Area Vision (3) Camera System | ✓ | |
| Ground-level engine shutdown | ✓ | | Powered access ladder | ✓ | |
| Guard, crankcase | ✓ | | Seat – Cat Advanced Ride Management (ARM), Cat Comfort Series III, rotates 30 degrees | ✓ | |
| Starting aid, ether | ✓ | | FLUIDS | | |
| Braking system: primary and secondary, wet disc, hydraulic; parking, hydraulic released, spring-applied | ✓ | | Extended life coolant to -37°C (-34°F) | ✓ | |
| 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 | ✓ | | OTHER STANDARD EQUIPMENT – TRACTOR | | |
| POWERTRAIN – SCRAPER | | | Accumulators (brake and cushion hitch) with Canadian Registration Number (CRN) | ✓ | |
| Braking system: primary and secondary, wet disc, hydraulic | ✓ | | Fast oil change (engine) | ✓ | |
| ELECTRICAL – TRACTOR | | | Vandalism locks | ✓ | |
| Alternator, 115 amp | ✓ | | Steering locks | ✓ | |
| Batteries (4), 12V, 1,000 CCA, maintenance-free | ✓ | | Secondary Steering (ground driven) | ✓ | |
| Electrical system, 24V | ✓ | | Heater, engine coolant 120V | ✓ | |
| Lighting system: LED headlights low beam and high beam, flood lights, cutting edge, and bowl lights are LED. | ✓ | | OTHER STANDARD EQUIPMENT – SCRAPER | | |
| Starting/charging receptacle | ✓ | | Bowl: 24.5 m³ (32.0 yd³) - struck, 33.6 m³ (44.0 yd³) - heaped | ✓ | |
| ELECTRICAL – SCRAPER | | | Hydraulic Position Sensing Cylinders (Bowl lift and apron) | ✓ | |
| Alarm, backup | ✓ | | Fast-fill fuel tank | ✓ | |
| Lighting system: LED brake/turn indicators | ✓ | | Fenders-Scraper | ✓ | |
| OPERATOR ENVIRONMENT - TRACTOR | | | Overflow guard | ✓ | |
| HVAC powered air precleaner | ✓ | | Scraper Push-Frame Guards | ✓ | |
| HVAC system, heat, AC, defrost | ✓ | | OTHER ATTACHMENTS | | |
| Thermostat control of HVAC system | ✓ | | Cab beacon with air horn | | ✓ |
| Coat hook | ✓ | | INTEGRATED TECHNOLOGIES | | |
| Lunchbox platform with holding strap | ✓ | | Sequence Assist and Cat Payload | ✓ | |
| Diagnostic connection | ✓ | | Cat Grade | | ✓ |
| 12V power ports (2) | ✓ | | Product Link | | ✓ |
| Dome courtesy light | ✓ | | SERVICE INSTRUCTIONS | | |
| Horn, electric | ✓ | | Film arrangement – U.S. (ANSI) | | ✓ |
| T-Handle implement control | ✓ | | Film arrangement – International (ISO) | | ✓ |
| 254 mm (10 in) touchscreen information display | ✓ | | | | |
| Radio ready | ✓ | | | | |
| Rollover protective structure/falling objects protective structure (ROPS/FOPS) cab, pressurized | ✓ | | | | |

Cat® 651 Wheel Tractor-Scraper

Technical Specifications

| Engine | | |
|---|-----------|--------|
| Engine Model: Tractor | Cat® C18 | |
| Rated Engine Speed: Tractor | 2,000 rpm | |
| Engine Power (ISO 14396:2002): Tractor | 469 kW | 629 hp |
| • Meets U.S. EPA Tier 4 Final and EU Stage V emission standards | | |

| General Data | | |
|---|--------------------|------------|
| Scraper Capacity | | |
| Struck | 24.5 m³ | 32.0 yd³ |
| Heaped | 33.6 m³ | 44.0 yd³ |
| Rated Load | 47 174 kg | 104,000 lb |
| | 46.4 mt | 52.0 ton |
| Width of Cut | 3.8 m | 12.5 ft |
| Maximum Depth of Cut (Cushion Hitch Locked) | 440 mm | 17.3 in |
| Maximum Depth of Spread | 660 mm | 26.0 in |
| Top Speed (Loaded) | 56.1 km/h | 34.9 mph |
| 180° Curb-to-Curb Turning Width (Right) | 13.85 m | 45.4 ft |
| Tire Size | 40.5/75 R39 ** E-3 | |
| Operating Weight | | |
| Unloaded | 65 770 kg | 145,000 lb |
| With Rated Load | 112 945 kg | 249,000 lb |
| Overall Length | 16.3 m | 53.5 ft |

| 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 |

| Sound | | |
|---|--|--|
| • The exterior sound power level for the standard machine (ISO 6395:2008) is 116 dB(A). | | |
| • The interior sound pressure level for the standard machine (ISO 6396:2008) is 75 dB(A). | | |

| Safety Criteria Compliance Standards | |
|---|---|
| Rollover Protective Structure (ROPS) | ISO 3471:2008 for up to 26 600 kg (58,643 lb) |
| Falling Objects Protective Structure (FOPS) | ISO 3449:2005 Level II |
| Brakes | ISO 3450:2011 |
| Steering System | ISO 5010:2019 |
| Seat Belt | ISO 6683:2005, SAE J386 |
| Forward Horn and Reverse Alarm | ISO 9533:2010 |

| Implement Cycle Times | | |
|-----------------------|-------------|-------------|
| | Lower | Raise |
| Apron | 4.1 seconds | 4.4 seconds |
| Bail | 1.9 seconds | 1.7 seconds |
| Bowl | 4.5 seconds | 4.2 seconds |
| | Extend | Retract |
| Ejector | 9.2 seconds | 7.8 seconds |

| Service Refill Capacities | | |
|----------------------------|---------|-----------|
| Crankcase | 52.0 L | 13.7 gal |
| Transmission System | 136.0 L | 35.9 gal |
| Cooling System | 88.6 L | 23.4 gal |
| Fuel Tank | 860 L | 227.0 gal |
| Hydraulic System | 150.0 L | 39.6 gal |
| Diesel Exhaust Fluid (DEF) | 30.5 L | 8.1 gal |
| Differential | 136.0 L | 35.9 gal |
| Final Drive (each) | 24.0 L | 6.3 gal |
| Rear Wheels (each) | 9.0 L | 2.4 gal |
| Brake Disc Oil (Scraper) | 70.0 L | 48.5 gal |
| Windshield Washer Fluid | 5.0 L | 1.3 gal |

| 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 CO ₂ equivalent of 2.71 metric tonnes (2.99 tons). | |
| • If equipped with R1234yf (Global Warming Potential = 0.501), the system contains 1.85 kg (4.1 lb) of refrigerant which has a CO ₂ equivalent of 0.001 metric tonnes (0.001 tons). | |

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Replaces AEXQ3246-01
Build Number: 11A
(Global excluding Japan)

