

# 815K

## Soil Compactor



### Engine

Engine Model  
Rated Power (Net)  
Maximum Net Torque @ 1,400 rpm

Cat® C7.1 ACERT™  
185 kW  
1219 N·m

### Operating Specifications

Operating Weight 22 386 kg



オフロード法少数特例  
2014年基準同等適合車

# Lower your operating cost with industry leading efficiency.

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**Cat Soil Compactors are designed with durability built in, ensuring maximum availability through multiple life cycles. With optimized performance and simplified serviceability, our machines allow you to operate more efficiently and safely.**

**Representing a long-standing commitment to quality and performance, this rugged, powerful machine is designed and built for heavy-duty compaction and dozing operations. Focused on helping our customers succeed, we have continued to build upon each new series. The 815K continues our legacy of reliability, performance, safety, operator comfort, serviceability, and efficiency.**

# Efficiency and Productivity

Delivering the efficiency and productivity you demand through integrated machine systems.

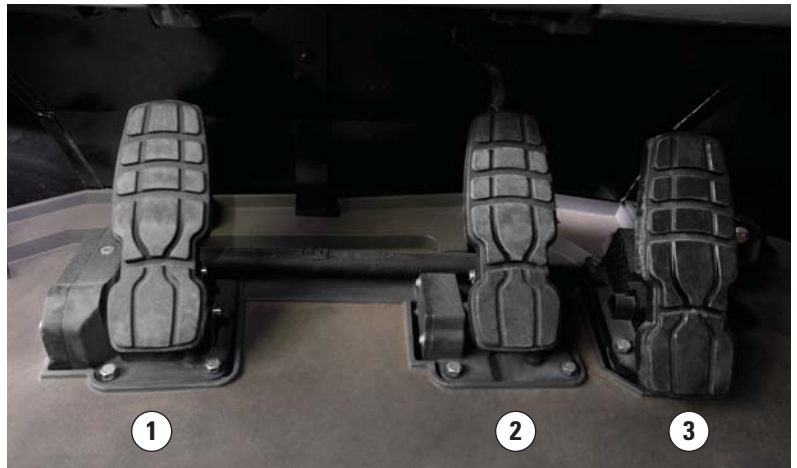


## **Advanced Productivity Electronic Control System (APECS)**

The new APECS is designed to improve transmission shifting performance, providing a higher level of comfort for the operator and increasing productivity.

## Decelerator Pedal

The left pedal acts as a brake, transmission neutralizer and an engine decelerator to override the engine speed selected by the throttle lock. This enables the operator to slow down when the throttle lock is engaged and to return to throttle lock without pressing a resume or set button again. This aids in maneuvering around trucks, tractors or any other obstacle.



## Electro Hydraulic Controls

Operators increase productivity with our responsive implements feature.

- Operate comfortably through electronically controlled hydraulic cylinder stops
- Handle easy-to-use soft detent controls



## Steering System

Confident machine operation starts with precise machine control enabled by the 815K's load sensing hydraulic steering system.

- Increase efficiency with our variable displacement piston pumps
- Achieve precise positioning for easy loading in tight areas with 42 degrees each way of steering articulation
- Enhance operator comfort with integrated steering and transmission control functions
- Smoother, faster cycles help reduce operator fatigue through the use of Steering and Transmission Integrated Control System (STIC™)



1) Decelerator 2) Brake 3) Accelerator

# Structures

Purpose-built from the ground up for the toughest conditions.



## Robust Structures

Your bottom line is improved by highly durable structures that achieve multiple life cycles and withstand the toughest loading conditions.

- Full box-section rear frame resists torsional shock and twisting forces
- Heavy-duty steering cylinder mounts efficiently transmit steering loads into the frame
- Axle mounting has been optimized for increased structural integrity



**The 815K is specifically designed and made with purpose built structures to remain safe and durable for the long run. Advanced design, materials and robotic welding contribute to increased durability and overall machine strength.**

# Engine and Power Train

Operate more efficiently with improved power and control.



## Engine and Emissions

The Cat C7.1 ACERT engine is designed for maximum fuel efficiency and increased power density. This engine complies with Tier 4 Final/Stage IV, and Low Volume Exemption 2014 equivalent emission standards in Japan. This engine features innovative Cat electronics, fuel injection process, air-management systems and aftertreatment solution with Cat Selective Catalytic Reduction. While in operation, the aftertreatment will be seamless to the operator thanks to the passive regeneration system which is utilized.

## Efficient Systems and Components

Innovative systems intelligently lower the average working engine speeds and reduce the overall system heat loads which result in significantly improved performance and fuel efficiency.

## Advanced Systems with Innovative Integration

The deep system integration of the new engine and emissions system, power train, hydraulic system and cooling system result in lower fuel consumption on average compared to previous models.

## Cat Planetary Powershift Transmission

Building your success begins with a best-in-class transmission.

- Consistent, smooth shifting and efficiency through integrated electronic controls that utilize Advanced Productivity Electronic Control System (APECS).
- Long life and reliability through heat treat gear and metallurgy.
- Three forward and three reverse speeds to match your application.

## Diesel Exhaust Fluid (DEF)

Cat engines equipped with an SCR system inject DEF into the exhaust to reduce NO<sub>x</sub> emissions. DEF is a precisely mixed solution of 32.5% high purity chemical grade urea and 67.5% de-ionized water. DEF used in Cat SCR systems must meet the requirements outlined in the International Organization for Standardization (ISO) standard 22241-1.

## Next Generation Fuel Systems

Cat injection timing precisely controls the fuel injection process through a series of carefully timed microbursts, providing more control of combustion for the cleanest, most efficient fuel burn. On the 815K the high pressure common rail fuel systems boost performance and reduce soot for the C7.1 ACERT engine.

## Cat NO<sub>x</sub> Reduction System

The Cat NO<sub>x</sub> Reduction System (NRS) captures and cools a small quantity of exhaust gas, then routes it back into the combustion chamber where it drives down combustion temperatures and reduces NO<sub>x</sub> emissions.

## Aftertreatment Technologies

To meet the additional 80% reduction in NO<sub>x</sub> emissions required by Tier 4 Final/Stage IV emission standards, one new system, the Selective Catalytic Reduction (SCR), has been added to the already proven Cat Tier 4 Interim/Stage IIIB aftertreatment solution.



# Tamping Wheels and Tips

The heart of any compaction system.



## Chevron Tamping Tip Design

The modified chevron tamping wheel tip design provides greater ground pressure, more compaction, excellent traction and a smooth ride.



## Compaction

Compaction is achieved from the bottom of the lift to the top. The tapered tips walk out of the lift without “fluffing” the soil. The top of the lift is compacted and the surface is relatively smooth and sealed so hauling units are able to maintain a high speed when traveling over the fill. The 815K travel speed allows four forces of compaction: pressure, manipulation, impact and vibration. Since the 815K can also spread fill, the number of spreader tractors may be able to be reduced.

## Symmetrical Tamping Tip Pattern

Equal compaction in forward or reverse is the result of the symmetrical tamping tip pattern. Tips are full perimeter and replaceable. The tip is welded to a base assembly, which then is welded directly to the drum.



## Cleaner Bars

Each wheel has two cleaner bars to keep the drums free of carryover dirt, regardless of rolling direction so efficiency is maximized. Cleaner bars are available with standard or abrasive tips depending upon the application.

## Adjustable Cleaner Bar Tip

The adjustable cleaner bar tips are heat-treated and direct hardened, cutting edge steel to increase wear life, which translates into lower operating costs.



## Your operators can work more efficiently and stay comfortable with our customer-inspired cab features.



### Environment

Your operator's productivity is enhanced with our clean, comfortable cab environment.

- Experience reduced vibrations from isolation cab mounts and seat air suspension
- Maintain desired cab temperature with automatic temperature controls
- Pressurized cab with filtered air
- Reduced sound levels
- Convenient floor storage tray/lunch box



### Cat Comfort Series III Seat

Enhance comfort and help reduce operator fatigue with Cat Comfort Series III seat.

- Mid back design and extra thick, contoured cushions
- Air suspension system
- Easy-to-reach seat levers and controls for six way adjustments
- Seat-mounted implement pod and STIC steer that moves with the seat
- 76 mm wide retractable seat belt



### Control Panel

Ergonomic placement of switches and information display keep your operators comfortable all day every day.

- Large backlit membrane switches feature LED activation indicators
- Switches feature ISO symbols for quick function identification
- Two position rocker switch activates the electro hydraulic park brake

# Operator Station

Best-in-class operator comfort and ergonomics.



## Steering and Transmission Integrated Control System (STIC™)

Enter and exit the cab easily and safely with a new fold up STIC armrest.

Experience maximum responsiveness and control with STIC that combines directional selection, gear selection and steering into a single lever.

- Simple side-to-side motion turns machine right or left, minimizing operator movements
- Easy to operate finger controlled gear selection
- Smoother, faster cycles help reduce operator fatigue through the use of low effort integrated controls





# Integrated Technologies

Monitor, manage, and enhance job site operations.

Cat Connect makes smart use of technology and services to improve your job site efficiency. Using the data from technology-equipped machines, you'll get more information and insight into your equipment and operations than ever before.

Cat Connect technologies offers improvements in these key areas:



**Equipment Management** – increase uptime and reduce operating costs.



**Productivity** – monitor production and manage job site efficiency.



**Safety** – enhance job site awareness to keep your people and equipment safe.



### **COMPACT Technologies**

COMPACT technologies combine advanced compaction measurement, in-cab guidance and reporting capabilities to help you consistently meet compaction targets fast, uniformly, and in fewer passes – saving on fuel and the cost of unnecessary rework.

#### **Cat Compaction Control**

The factory Cat Compaction Control system uses Machine Drive Power (MDP) technology to measure rolling resistance and correlates it with soil stiffness. MDP works in both cohesive or granular soils. Optional 3D mapping system maps compaction measurements to the precise location the operator is working, providing a real-time view of progress, and a record of compaction uniformity.



### **LINK Technologies**

LINK technologies wirelessly connect you to your equipment, giving you valuable insight into how your machine or fleet is performing so you can make timely, fact-based decisions that can boost job site efficiency and productivity.

#### **Product Link™/VisionLink®**

Product Link is deeply integrated into your machine, giving you access to timely information like machine location, hours, fuel usage, idle time and event codes via the online VisionLink user interface can help you effectively manage your fleet and lower operating costs.



### **DETECT Technologies**

DETECT technologies help keep people and equipment safe by enhancing operator awareness of the work area around working equipment and by monitoring and reporting unsafe conditions, like avoidance zones.

#### **Rear Vision Camera**

A rear vision camera greatly enhances visibility behind the machine to help the operator work more productively. Work with greater confidence and at peak potential while keeping people and assets safe.



# Safety

Making your safety our priority.

**We are constantly improving our products in an effort to provide a safe work environment for the operator and those who work on your job site.**

## **Machine Access**

- Railings, ladders and non-slip surfaces enhance technician and operator safety
- Maintain three points of contact at all times through ground level or platform accessible service areas



### Visibility

- Rearview camera with in-cab monitor increases operator awareness around the machine
- Standard cab mounted LED warning strobes
- Optional heated mirrors ensure enhanced visibility for safe operation
- Optional LED lights provide excellent workspace visibility

### Operator Environment

- Reduced vibrations to the operator with isolated cab mounts and seat mounted implement and steering controls
- Low interior sound levels
- Pressurized cab with filtered air
- Standard 76 mm seat belts on the operator seat

# Sustainability

Stewards of the environment.



## Reducing the Impact to the Environment

The 815K is an efficient, productive machine that's designed to conserve our natural resources for generations ahead.

- Engine Idle Shutdown can help you save fuel by avoiding unnecessary idling.
- Reduce waste to the environment with our maintenance free batteries.
- The high speed oil change is standard and ensures fast, easy, and secure changing of the engine oil.
- The 815K is built to be rebuilt with major structures and components capable of being remanufactured to reduce waste and replacement costs.



# Serviceability

Enabling high uptime by reducing your service time.

## We can help you succeed by ensuring your 815K has design features to reduce your downtime.

- Safe and convenient service with ground level or platform access to daily service points.
- Swing-out doors on both sides of the engine compartment provide easy access to important daily service checks.
- Ecology drains for ease of service and prevention of spills.
- Reduce downtime with VIMS™ system notifications so your operators and technicians can resolve any problems before failure.
- Quick visual inspection and minimize fluid contamination with sight gauges.
- Hydraulic oil cooler, air conditioner condenser, and fuel cooler grouped together for ease of access.
- Side access doors provided for cleanout of the cooling package.
- A new ground level service area includes a Master Disconnect Switch with integrated lock-out/tag-out, DEF purge lamp, circuit breakers, emergency fuel shutoff switch and the jump start receptacle.
- Centralized grease points for convenient maintenance.



## Customer Support

Your Cat dealers know how to keep your machines productive.



### Legendary Cat Dealer Support

A valued partner, your Cat dealer is available whenever you need them.

- Preventive maintenance programs and guaranteed maintenance contracts
- Best-in-class parts availability
- Improve your efficiency with operator training
- Genuine Cat Remanufactured parts



## Operating Costs

Save time and money by working smart.

Data from customer machines show Cat Soil Compactors are among the most fuel efficient machines in the industry. Several features contribute to this excellent fuel efficiency:

- **ACERT Engine** – Advanced engine controls maximizes power and efficiency.
- **Engine Idle Shutdown** – Automatic engine and electrical system shutdown conserves fuel.
- **Advanced Productivity Electronic Control System (APECS)** – All new APECS transmission controls provides greater momentum on grades and fuel savings by carrying that momentum through the shift points.
- **Fuel Tank Capacity** minimum of 12 hours operation depending on the application.

# 815K Soil Compactor Specifications

## Engine

Engine Model	Cat C7.1 ACERT
Rated Power (SAE J1349)	185 kW
Rated Power (Net ISO 9249)	185 kW
Gross Power (SAE J1995)	212 kW
Gross Power (ISO 14396)	204 kW
Maximum Net Torque @ 1,400 rpm	1219 N·m
Torque Rise	52%

Maximum Altitude without Derating	3000 m
Bore	105 mm
Stroke	135 mm
Displacement	7.01 L
High Idle Speed	2,270 rpm
Low Idle Speed	800 rpm

## Operating Specifications

Maximum Operating Weight	22 386 kg
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## Transmission

Transmission Type	Planetary – Powershift – ECPC
Travel Speeds	
Forward – First	6.7 km/h
Forward – Second	12 km/h
Forward – Third	21.2 km/h
Reverse – First	7.7 km/h
Reverse – Second	13.7 km/h
Reverse – Third	24.2 km/h

## Hydraulic System

Pump Flow at 2,111 rpm	89 L/min
Main Relief Pressure	22 000 kPa
Maximum Supply Pressure	20 200 kPa
Lift Cylinder, Double-acting: Bore and Stroke	101.6 mm × 627 mm
Tilt Cylinder, Double-acting: Bore and Stroke	101.6 mm × 167 mm

## Service Refill Capacities

Cooling System	81 L
Engine Crankcase	20 L
Transmission	56 L
Fuel Tank	500 L
Diesel Exhaust Fluid Tank*	16 L
Differentials and Final Drives – Front	65 L
Differentials and Final Drives – Rear	65 L
Hydraulic Tank Only	75 L

\*Diesel Exhaust Fluid (DEF) that meets all requirements defined in ISO 22241-1.

## Axles

Front	Planetary – Fixed
Rear	Planetary – Oscillating
Oscillation Angle	±10°

## Brakes

Parking Brake	Drum and Shoe, Spring Applied, Hydraulic Released
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# 815K Soil Compactor Specifications

## Cab

	Standard	Suppression
Operator Sound Level (ISO 6396)	71 dB(A)	70 dB(A)
Machine Sound Level (ISO 6395)	111 dB(A)	109 dB(A)

## Hydraulic System – Steering

Steering System – Circuit	Closed Center Load Sensing
Bore	101.6 mm
Stroke	597 mm
Steering System – Pump	Piston – Variable Displacement
Maximum System Flow	147 L/min @ 2,111 rpm
Steering Pressure Limited	27 600 kPa
Vehicle Articulation Angle	84 degrees

## Blades

Width – Moldboard Length	3652 mm
Height Including Cutting Edge	860 mm
Maximum Depth of Cut	222 mm
Maximum Lift Above Ground	802 mm
Blade Tilt Angle – Right – Hydraulic	4.8°
Blade Tilt Angle – Left – Hydraulic	5.5°
Blade Tilt Adjustment – Right	305 mm
Blade Tilt Adjustment – Left	346 mm
Total Tilt Adjustment	651 mm
Width Over End Bits	3761 mm

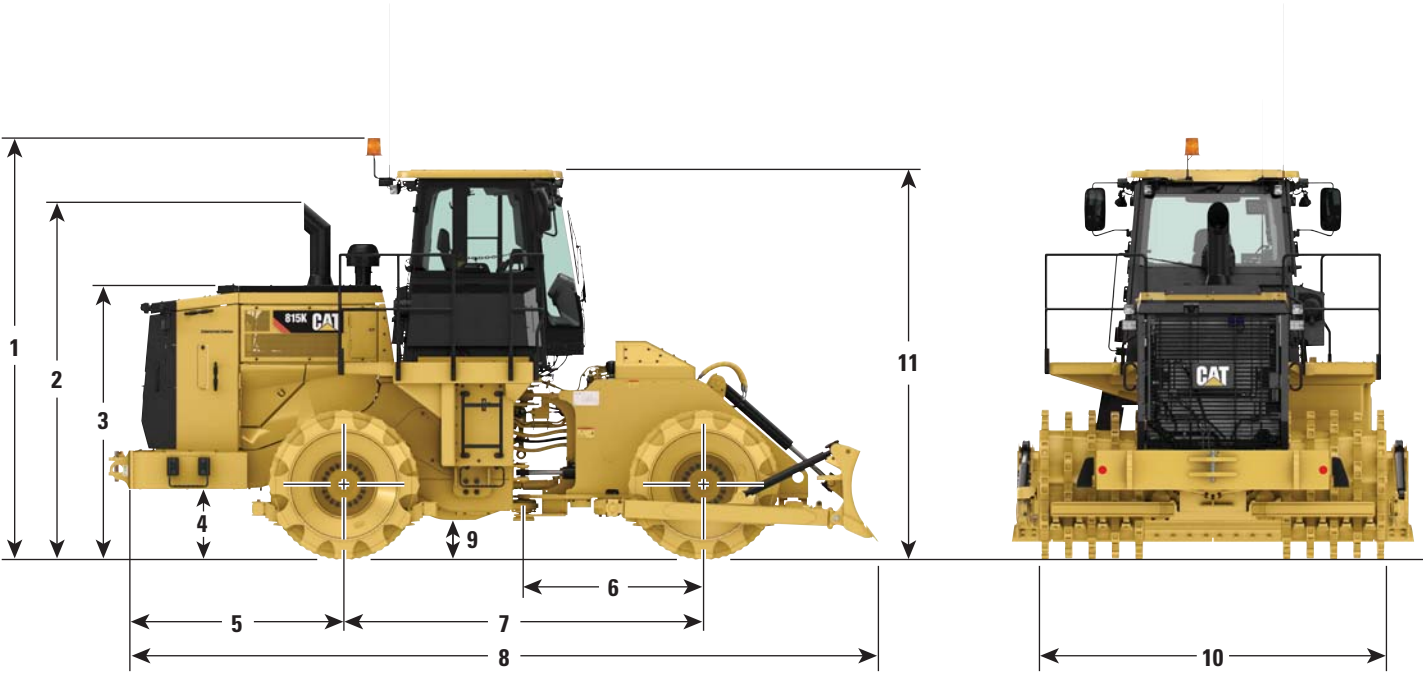
## Wheels

Weight	4409 kg
Outside Diameter	1412 mm
Drum Diameter	1029 mm
Drum Width	991 mm
Tips per Wheel	60
Width over Drums	3243 mm

# 815K Soil Compactor Specifications

## Dimensions

All dimensions are approximate.



1	Height to Top of Beacon	3946 mm
2	Height to Top of Exhaust Pipe	3344 mm
3	Height to Top of Hood	2566 mm
4	Ground Clearance to Bumper	665 mm
5	Center Line of Rear Axle to Bumper	1990 mm
6	Hitch to Center Line of Front Axle	1675 mm
7	Wheelbase	3350 mm
8	Length with Blade on Ground	7157 mm
9	Ground Clearance	375 mm
10	Width over Wheels	3243 mm
11	Height to Top of Cab Roof	3650 mm
Turning Radius – Inside of Push Arms		2520 mm

# 815K Standard Equipment

## Standard Equipment

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

### POWER TRAIN

- Advanced Productivity Electronic Control System (APECS)
- Air to air aftercooler
- Brakes, full hydraulic, enclosed, wet multiple disc service brakes
- Cat clean emission module
- Electro-hydraulic parking brake
- Electronic Clutch Pressure Control (ECPC)
- Engine, Cat C7.1 with ACERT Technology
- Engine driven cooling fan – suction
- Fuel priming pump (electric)
- Fuel to air cooler
- Ground level engine shutoff
- Radiator, unit core
- Starting aid (ether)
- Throttle lock
- Torque converter
- Transmission, planetary, with 3F/3R speed range control

### ELECTRICAL

- Alarm, back-up
- Alternator, 150 amp
- Batteries, maintenance-free
- Electrical system, 24V
- Ground level lockable master disconnect switch
- Lights, directional (rear)
- Light, warning switched (LED strobe)
- Lighting system, (front and rear)
- Starter, electric
- Starting receptacle for emergency start

### OPERATOR ENVIRONMENT

- 12V power port for mobile phone or laptop connection
- AccuGrade™ mapping (ready)
- Air conditioner
- Cab, sound-suppressed pressurized
- Cab door, sliding window (LH)
- Cat Compaction Control (ready)
- Cat Detect: Object Detection (ready)
- Coat and hard hat hooks
- Finger tip shifting controls
- Flip-up armrest
- Heater and defroster
- Horn, electric
- Hydraulic controls – seat mounted
- Implement hydraulic lockout
- Instrumentation, gauges
  - DEF fluid level
  - Engine coolant temperature
  - Fuel level
  - Hydraulic oil temperature
  - Speedometer/tachometer
  - Torque converter temperature
- Instrumentation, warning indicators
  - Action alert system, three categories
  - Brake oil pressure
  - Electrical system, low voltage
  - Engine failure malfunction alert and action lamp
  - Parking brake status
- Light, (dome) cab
- Lunch box and beverage holders
- Mirror, internal (panoramic)
- Mirrors, rearview (externally mounted)
- Radio ready for entertainment
  - Antenna
  - Speakers
  - Converter (12V)
- Seat, Cat Comfort (cloth) air suspension
- Seat belt with minder, retractable, 76 mm wide
- STIC control system with lockout
- Sun visor, front

- Tinted glass
- Transmission gear (indicator)
- Vital Information Management System (VIMS)
  - Graphical information display
  - External data port
  - Customizable operator profiles
  - Event indicator light on rear grill
- Wet-arm wipers/washers (front and rear)
  - Intermittent wipers (front and rear)

### TIRES, RIMS AND WHEELS

- Wheels, tamping foot

### GUARDS

- Cleaner bars with teeth
- Guards, crankcase and power train
- Guard, driveshaft

### FLUIDS

- Antifreeze, premixed 50% concentration extended life (–34° C)

### OTHER STANDARD EQUIPMENT

- DEF tank fill gauge
- Doors, service access (locking)
- Ecology drains for engine, radiator, transmission, hydraulic tank
- Engine, crankcase, 500 hour interval with CJ-4 oil
- Emergency platform egress
- Fire suppression ready
- Fuel tank, 500 L
- Hitch, drawbar with pin
- Hoses, Cat XT™
- Hydraulic, engine, and transmission oil coolers
- Oil change system, high speed
- Oil sampling valves
- Steering, load sensing
- Total hydraulic filtration system
- Vandalism protection caplocks
- Venturi stack

# 815K Standard Attachments and Optional Equipment

## Standard Attachments

Standard attachments may vary. Consult your Cat dealer for details.

### HYDRAULICS

- Hydraulics

### OPERATOR ENVIRONMENT

- Glass (window)
  - Standard bonded or rubber-mounted glass
- Precleaner – cab
  - Standard or powered
- Seat – cab
  - Standard or heated and ventilated
- Mirrors – cab
  - Standard or heated

### POWER TRAIN

- Axles
  - Standard or non-spin rear

### SPECIAL ARRANGEMENTS

- Engine Precleaners
  - Turbine or dual stage

### ELECTRICAL

- Lights
  - Standard or LED

### FUEL SYSTEMS

- Fuel tank
  - Non-fast or fast fill

### TECHNOLOGY PRODUCTS

- Product Link
  - GSM, satellite

### CLEANER BARS

- Cleaner bars
  - Standard or abrasive

### BLADES

- Blades
  - Straight or tilt-straight

## Optional Equipment

Optional equipment may vary. Some options may be included/excluded in arrangement packages. Consult your Cat dealer for details.

### OPERATOR ENVIRONMENT

- Camera, rear vision
- Radio, AM/FM/AUX/USB/BLUETOOTH
- Radio, CB (ready)

### TECHNOLOGY PRODUCTS

- Compaction control, basic

### FLUIDS

- Antifreeze, –50° C

### STARTING AIDS

- Heater, engine coolant, 120V
- Heater, engine coolant, 240V

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Based on the Labor, Safety and Health Laws in Japan, employer of small construction equipment are required to provide specific training for all operators on machines with ship weight less than 3 metric ton. For machines greater than 3 metric ton, operator needs to obtain operator license certification from a Government approved registered training school.

