

277B, 287B

Multi Terrain Loaders



	277B	287B
Cat® Diesel Engine	3044C DIT	3044C DIT
Net Power	59 kW/78 hp	59 kW/78 hp
Gross Power	61 kW/82 hp	61 kW/82 hp
Operating Weight	4250 kg	4660 kg
Rated Operating Capacities		
35% Tipping Load	936 kg	1143 kg
50% Tipping Load	1338 kg	1632 kg

Caterpillar® 277B and 287B Multi Terrain Loaders

Designed, built and backed by Caterpillar to deliver exceptional performance and versatility, ease of operation, serviceability and customer support.

World-class Operator Station

Operator comfort and ease of operation are designed into the operator's station from every aspect. Ergonomic features such as low-effort joystick controls, comfortable padded armrest and an adjustable contoured seat reduce operator fatigue. Excellent visibility to the work tools helps enhance productivity. **pg. 4-5**

Rubber Track Undercarriage

The unique rubber track undercarriage provides exceptional flotation, fast travel suspension, traction and stability with minimal pressure on the ground. **pg. 8**

High Performance Power Train

- ✓ The Cat® 3044C DIT Turbo engine provides high engine horsepower and torque. Exclusive anti-stall feature maximizes power to the drive train and work tools without stalling the engine, allowing part-throttle operation for lower sound levels and lower fuel consumption. **pg. 6**

Advanced Hydraulic System

- ✓ The hydraulic system in the Cat Multi Terrain Loaders is designed for maximum power and reliability. Increased hydraulic power enables better overall performance. Reduced componentary translates to fewer hydraulic connections thus reducing potential leak points. High Flow hydraulics are optional on the 287B. **pg. 7**

The Caterpillar Multi Terrain Loaders, with many work tool options, are highly versatile, compact construction machines. They are designed to deliver traditional Cat reliability and productivity in the toughest working conditions.

✓ *New feature*



Quick Coupler and Cat Work Tools

- ✓ A universal work tool interface and quick coupler make the Cat Multi Terrain Loader the most versatile machine on the jobsite. The wide range of Caterpillar work tools optimise machine performance for maximum utility and production. **pg. 10**

Serviceability

- ✓ Cat Multi Terrain Loaders offer quick and easy routine maintenance and service. The rear door opens 90 degrees and the cooling package raises to provide industry leading access to the engine compartment. The cab also tilts up for easy access. **pg. 9**

Customer Support

Caterpillar Dealers offer unmatched customer support, with excellent warranty programs and fast parts availability, resulting in maximum uptime and minimum repair costs. Equipment maintenance services help optimize machine performance and reliability. **pg. 12**

287B Vertical Lift Loader Linkage

Vertical lift loader linkage gives these Multi Terrain Loaders more lift height, longer reach at maximum lift height, and a near vertical lift path. Caterpillar vertical lift machines are designed for applications such as lift and place and truck loading. Their longer wheelbase gives greater stability, smoother ride and higher lift capacities. **pg. 8**



Operator Station

World-class operator station provides exceptional working comfort with excellent visibility, enhanced fingertip control and optimum instrumentation.



Ergonomic Design. Cat Multi Terrain Loaders feature an updated ergonomic cab design that makes operation easier and more comfortable. A choice of contoured, adjustable seats offer increased operator comfort. Careful placement of machine controls make them feel like a natural extension of the operator hands. A new contoured armbar gives excellent support of arms and wrists for easier machine control. The cab features a removable floor mat which acts as a foot rest and offers excellent sound and heat insulation. The foot throttle control is an ergonomically-designed pedal that allows operation at variable engine speeds for optimum performance while minimizing fuel consumption. A standard hand throttle also allows operation at any set engine speed.

Cab Features. The ergonomically designed cab provides the operator with easy to use pilot controls in a comfortable working environment. The standard offerings of the Cat Multi Terrain Loaders operator station include:

- 12 volt power socket
- Removable, sliding side windows
- Enclosed cabs feature an automatic lock-out switch which prevents accidental damage by disabling the loader functions when the door is open

Low-Effort Machine Controls.

Ergonomic pilot-operated hydraulic controls give operators precision control of Cat Multi Terrain Loaders with minimal effort. The left joystick controls forward and reverse travel speed plus direction and the right joystick controls loader up/down and tilt control. Both joysticks use an intuitive “S” control pattern. Joysticks provide additional auxiliary controls, using positive-action buttons to provide precision fingertip control of many machine functions, including:

- One-touch continuous auxiliary hydraulic flow
- Momentary auxiliary hydraulic flow
- Multiple auxiliary functions
- Horn



High-efficiency Climate Controls.

Operating in extreme temperatures is now more comfortable with the optional cab air conditioner and heater installed.

The air conditioner offers 14 250 kj cooling capacity and the heater output is 18 690 kj. Six adjustable vents provide excellent air flow throughout the cab and makes defrosting the optional front door and side windows easier.

Visibility. The Cat Multi Terrain Loader has a wide cab opening providing exceptional view of the work tool enhancing ease of operation and productivity. The sloped angle of the engine compartment allows excellent visibility to the rear of the machine. A new convex rearview mirror option gives the operator a panoramic view of the rear and sides of the machine. For better visibility in low-light conditions, the standard forward lights are adjustable 10 degrees in any direction.

Instrumentation. Cat Multi Terrain Loaders use instrument panels and gauges that are simple, easy-to-use and reliable. Bright indicator lights and audible warning, signals any critical system situation. An engine air cleaner restriction indicator is situated in the cab for easier reference.

Access/Egress. The Cat Multi Terrain Loader cab is designed to make machine operation simple, productive and comfortable. Getting into and out of the cab is secure and easy through a wide opening with three-point grab handles and skid-resistant steps. Tilt cylinders are neatly located under the lift arms so not to interfere with operator access and egress.



Cab Packages. Several cab packages and options are available.

The standard cab includes:

- ROPS/FOPS cab
- Contoured cushion seat with fore/aft adjustment
- Retractable seat belt
- Cushioned, contoured armbar
- Dual throttle controls - hand and foot
- Dome light
- Horn
- Rear wall liner
- Windows, top and rear
- Two overhead instrument panels
- Pilot-hydraulic joystick and fingertip auxiliary controls
- 12 Volt power socket

The deluxe cab package includes items in the standard cab, plus

- Deluxe suspension seat
- Headliner
- Additional working lights

A cold-weather cab package includes items in the standard cab, plus:

- Removable, sliding side windows
- High-efficiency heater/defrost
- Engine coolant heater
- Heavy-duty 880 CCA starting battery
- Debris barrier

Other cab options include:

- Cab door (either glass or polycarbonate) with wiper/washer and loader arm lock-out
- Air conditioner with heater/defrost
- FOPS, Level II
- Insulated floor mat with foot rest
- Cup holder
- 76 mm seat belt
- Additional controls for
 - hydraulic quick coupler
 - proportional auxiliary hydraulics
 - work tool electrical requirements
 - high flow hydraulics

High Performance Power Train

The Caterpillar hystat power train delivers aggressive performance and easy operation.



Cat Diesel Power.

The heart of the Cat Multi Terrain Loader power train is the Caterpillar 3044C DIT Turbo diesel engine. This rugged, reliable four-cylinder Stage II compliant Cat engine offers aggressive performance and a fast torque curve for quick response.

Throttle Control. Dual engine throttle controls allow the operator to match engine speed to the task. The hand throttle is ideal for jobs requiring consistent engine speed - such as cold planing or trenching. The foot throttle enables the operator to vary engine speed and minimize fuel consumption for other tasks such as load and carry, truck loading, grading and dozing.

Anti-Stall System. An exclusive anti-stall system on the Cat Multi Terrain Loaders allows maximum power to the tracks while minimizing engine stalling. This exclusive system helps maximize productivity for experienced operators and makes it easier for novice operators to become productive.

Closed-Loop, High Output Hydrostatic System.

The dual, closed-loop, axial piston hydrostatic pumps are driven directly off the engine. The pumps provide pressure and flow to two fixed displacement motors that power the final drive motors, driving the tracks. No chains are used.

Advanced Hydraulic System

The hydraulic system has built-in reliability and provides exceptional lift, breakout and auxiliary power to work tools.



Front Hydraulics. Standard ON/OFF front hydraulics are featured on both the 277B and 287B. Optional proportional front auxiliary hydraulics are also available on these models.

Power and Reliability. Maximum power and reliability are built into the Cat Multi Terrain Loader hydraulic system. In addition to providing power to drive the tracks, this system also provides the loader lift and tilt functions, powers the auxiliary circuit to drive work tools and drives the engine cooling fan.

Hydraulic Pumps. Hydraulic pumps are driven directly off the engine for maximum hydraulic performance and reliability - no belts are used. Pumps provide hydraulic flow to the loader and auxiliary hydraulic circuits. Control of the loader lift and tilt functions is by hydraulically-operated joystick controls for low-effort and precise operation.

Auxiliary Hydraulics. Standard auxiliary hydraulics to power work tools are available through quick-connect hydraulic couplings that are rigidly mounted to the loader arm. Cat XT hose and O-Ring Face Seals help ensure a leak-free system.

Reliability and Cleanliness.

Reduced potential leak points improve reliability and result in a cleaner machine. In addition, hydraulic oil flows through a 4-micron spin-on filter. A filter restriction indicator is located at the operator station. A 74-micron screen in the hydraulic tank prevents larger debris from entering the system and causing damage to the hydraulic components.

Hydraulic Oil Cooler. A high-efficiency hydraulic oil cooler lets the Cat Multi Terrain Loader work longer and harder in higher ambient temperatures, even when using continuous flow work tools. The high capacity hydraulic oil reservoir also helps keep operating temperatures lower.

Rubber Track Undercarriage

The unique rubber track undercarriage provides low ground pressure, stability, high traction, fast travel and suspension.



Rubber Track Undercarriage. The rubber track undercarriage transfers machine weight to the ground through 48 wheeled contact points on the 277B and 42 on the 287B. Machine weight is evenly distributed throughout the track.

Large Contact Area. The large ground contact area helps maximize traction and minimize ground pressure.

Positive Track Drive. The elevated, internal positive track drive keeps drive components away from ground debris.

Durable Rubber Track. The rugged, durable rubber track is lightweight and pliable, yet reinforced with high tensile strength cords.

Torsion Axles. Heavy-duty, torsion axles suspend each side of the undercarriage from the machine frame and are shock-absorbing, giving:

- Minimal shock to the machine and operator even in rough ground conditions
- Improved load retention
- Smooth travel, even at higher speeds

287B Vertical Lift Linkage

Designed and built for operation in the toughest working conditions requiring vertical lifting capabilities.



Lift Arms. The loader lift arms are purpose-designed to provide a substantially straight load path into the machine and a good viewing area to the work tool and sides of the machine. The lift arms are also designed to handle heavy loads without twisting and bending for exceptional reliability.

Spherical Bearing. The spherical bearing distributes the load from the lift arm into the frame by allowing the pin to rotate and pivot within the bore, reducing the chance of developing fatigue cracks in the arms.

Serviceability

Quick access and superior design makes the Cat Multi Terrain Loader easy to service and maintain.

Service Access. The rear service door opens 90 degrees for easy access to both sides of the in-line mounted engine.

Filters. All filters are spin-on and easily accessible, which makes routine service quicker and virtually spill-free.

Cooling System. The radiator, hydraulic oil cooler and grill tilt up to increase access to the cooling system during maintenance and allows easier cleaning of debris from between the grill and cooling package. The cooling fan is hydraulically driven for quieter operation and to eliminate the service and maintenance that comes with belt driven fans.

Easy Tilting Cab. The machine cab can now be tilted rearward by a single person using a single tool, and is held in place by a self-latching mechanism. When the cab is tilted back, all hydraulic pumps, motors, valves, lines and the fuel tank are accessible for quick, easier service.

Belly Pan Section. A removable belly pan section on the floor of the machine's lower frame provides excellent access for periodic cleaning.

Electrical and Hydraulic Lines.

Cleaner routing of electrical and hydraulic lines improves reliability and simplifies service.

Maintenance Points. They are grouped in easily accessible locations.

S•O•SSM Valves. Scheduled Oil Sampling S•O•S valves are standard to allow regular monitoring of the engine and hydraulic oil quality.

Other Standard Service Features

- Easy access to battery, air filter and single engine belt
- Sight glass on hydraulic tank and radiator allow quick, easy level checks
- Air filter restriction indicators are located inside the operator station and at the air filter
- Ecology drains simplify changing engine and hydraulic oils
- Grease fittings are countersunk to prevent damage
- Extended life coolant and 500-hour engine oil change intervals



Quick Coupler and Caterpillar Work Tools

Choose from a wide variety of tools that are performance matched to Cat Multi Terrain Loaders.



Quick Coupler. Work tools can be changed quickly and easily with the Cat Multi Terrain's quick coupler system. The universal coupler interface features:

- Low profile side plates are designed for the optimum match to work tools and minimal material packing
- Opposing wedges ensure a tight tool fit
- Rugged design and large contact area absorbs loads and minimizes stress
- Tool engagement and release are quick and easy
- Vertical pins are chrome-plated and lubricated for smooth engagement and prevention of corrosion
- Coupler allows excellent visibility to work tools and unobstructed entry and exit to the cab

The standard quick coupler features manual engagement and disengagement of work tools using two high-leverage handles. An optional hydraulic quick coupler is also available and allows engagement and disengagement of work tools without the need for the operator to exit the machine. Control of the coupler by use of a rocker switch inside the cab, making work tool changes quicker and easier.

Cat Work Tools. They extend the versatility of the Cat Multi Terrain Loaders. Designed and built for optimum performance and durability, these tools deliver high productivity, long service life and excellent value:

- Angle blades
- Augers
- Backhoes
- Brooms
- Buckets:
 - general purpose
 - grapple
 - light material
 - multi purpose
 - utility
- Cold planers
- Compactor vibratory
- Hammers
- Landscape rakes
- Landscape tillers
- Material handling arm
- Pallet forks
- Stump grinders
- Trenchers

- **Augers.** Caterpillar Augers are designed for drilling holes for footings, fencing, signs, trees and shrubs in construction, agricultural and landscaping applications.

- **Backhoes.** The compact Caterpillar Backhoe transforms the Multi Terrain Loader into a dedicated excavator for digging out trenches, hammer use or general excavating tasks.

- **Brooms.** Caterpillar Angle Brooms are ideal work tools for removing rock, dirt and other debris from streets, carparks, driveways, pavements and factory floors.

- **Buckets - multi purpose.** Caterpillar Multi Purpose Buckets are designed to optimize the versatility of Cat Multi Terrain Loaders when digging, dozing, clamping, scraping, back dragging, grading and levelling in a wide range of applications.

- **Cold planers.** Caterpillar Cold Planers are designed for milling tarmac, asphalt, concrete surfaces, prior to repair and reinstatement.

- **Grapple Forks.** Caterpillar Industrial Grapple Forks are designed to easily handle a wide array of bulky, loose, objects encountered in demolition, industrial, construction and other aggressive applications.

- **Trenchers.** Caterpillar Trenchers are designed for cutting narrow straight trenches in soil prior to laying electrical, telephone lines, cable lines, water or gas pipes.



Complete Customer Support

Cat dealer services help you operate longer with lower costs.



Machine Selection. With four different Cat Multi Terrain Loaders to choose from, selecting the right machine is even easier when you consult your Caterpillar dealer. Your dealer helps you make detailed machine comparisons before you purchase.

Purchase Options. Available to let you look beyond just the initial machine price. With your Cat dealer, you can review available financing options plus look at day-to-day operating costs. You can also look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the life of the machine.

Customer Support Agreements.

These agreements offer you a variety of service and maintenance options that can be customized to best fit your specific requirements. These can cover the entire machine and include work tools to help protect your investment.

Machine Support. It is one of your Cat dealer's primary goals. You will find high availability of parts at our Dealer parts counter. Cat Dealers utilize a worldwide computer network to find in-stock parts to minimize machine downtime. Your Cat dealer can also save you money by suggesting Cat Remanufactured parts that carry the same warranty as new, but with savings of 40 to 70 percent.

Maintenance Service Plans.

Help manage machine maintenance, by choosing from a wide range of maintenance plans and services at the time you purchase a machine. Repair option plans guarantee the cost of repairs up front. Diagnostics programs such as Scheduled Oil Sampling, Coolant Sampling and Technical Analysis help you avoid downtime and unscheduled repairs.

Operator Training. Cat dealers can improve your operator's techniques and help boost your profits.

Cat Machine Security System.

Secure your investment with Caterpillar's Machine Security System (MSS), a programmable key system that provides maximum machine security for Cat Multi Terrain Loader owners.

- MSS disables machine by interacting with the machine's Electronic Control Modules (ECM)
- Keys fit all existing Cat machines (including machines without MSS)
- Each machine can store up to 50 key identifications
- Each key can be configured to operate a certain range of machines or enable operation for a certain period of time

Repair, Rebuild or Replace.

Choices become even more evident when you consult your Caterpillar dealer. Your Cat dealer can help evaluate the costs involved so you can make the right choice every time.

Engine 3044C DIT T

	277B	287B
Ratings at 2600 rpm	kW/hp	kW/hp
Net power	59/78	59/78
Gross power	61/82	61/82

Dimensions

Displacement	3.3 liter	3.3 liter
Bore	94 mm	94 mm
Stroke	120 mm	120 mm

- Caterpillar 3044C DIT turbocharged, water-cooled, four-stroke cycle, four-cylinder diesel
- Net power rating per ISO 9249 or EEC 80/1269
- Meets EU directive 97/68/EC Stage II emission requirements

Operating Specifications

Based on standard machine equipped with 1981 mm general purpose bucket, full fuel 65 kg, and operator 75 kg.

	277B	287B
Operating Weight	4250 kg	4660 kg
Rated operating capacities*		
35% tipping load	936 kg	1143 kg
50% tipping load	1338 kg	1632 kg
Ground contact area	1.87 m ²	1.87 m ²
Ground Pressure	21.7 kPa	26 kPa
Tipping load	2676 kg	3265 kg
Breakout force		
lift cylinder	2112 kg	2372 kg
tilt cylinder	2487 kg	2498 kg

* ISO 5998:1986

Service Refill Capacities

	277B	287B
	Liters	Liters
Cooling System	10	10
Engine Crankcase	10	10
Fuel Tank	95	110
Hydraulic System	52	51
Hydraulic Tank	35	35

Power Train, Axles and Brakes

Dual, closed-loop, axial piston hydrostatic pumps driven directly off engine. Pumps provide pressure and flow to two fixed displacement motors.

	277B	287B
Travel speed		
Forward/reverse (km/h)	11.2	11.2

Features

- Single hydraulically-operated joystick, controls speed and direction
- Anti-stall system maximizes torque to the tracks without stalling engine
- Hydrostatic service brakes
- Multi-disc, spring-applied hydraulically released parking brake

Hydraulic System

	277B	287B
Hydraulic Flow	Standard	Standard
Loader		
Hydraulic pressure (kPa)	23 000	23 000
Hydraulic Flow (l/min)	83	83
Hydraulic power (kW)	31.9	31.9

ROPS/FOPS

Rollover Protective Structure (ROPS) and Falling Objects Protective Structure (FOPS).

- ROPS meets ISO 3471:1994
- FOPS meets ISO 3449:1998 Level I
- FOPS Level II (optional) meets ISO 3449:1998 Level II

Sound

Operator Sound

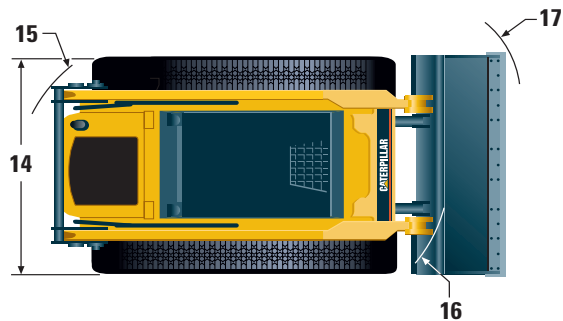
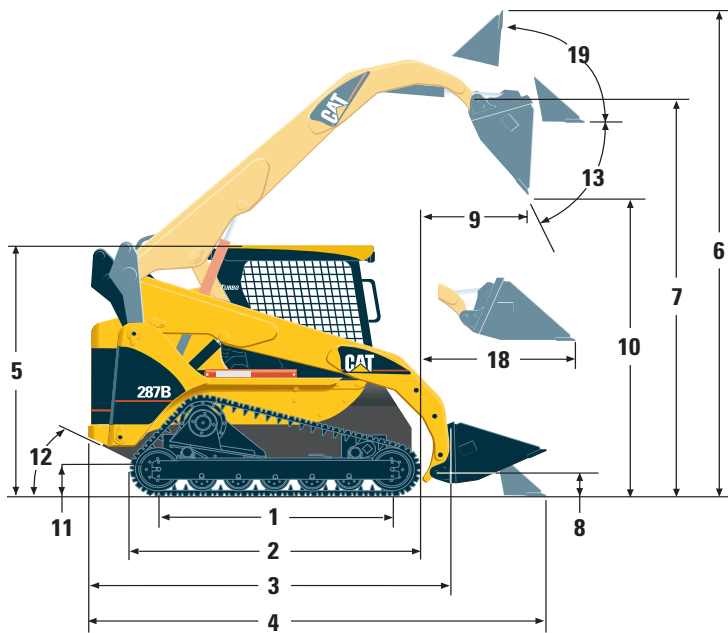
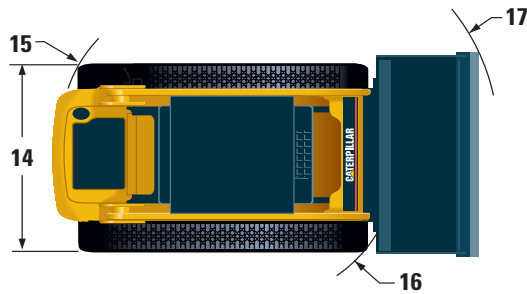
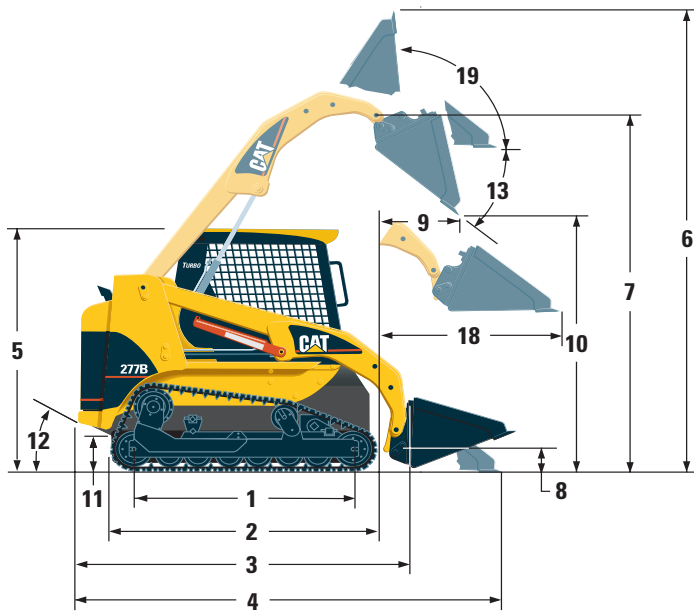
- The operator sound level measured according to the procedures specified in ISO 6396 is 89 dB(A).

Exterior Sound

- The labeled spectator sound power level measured according to the test procedures and conditions specified in 2000/14/EC is 104 dB(A).

Dimensions

All dimensions are approximate, based on standard machine equipped with 1676 mm general purpose bucket.



	277B mm	287B mm
1 Trackbase	2045	1842
2 Length of undercarriage	2494	2293
3 Length without bucket	2923	2901
4 Length with bucket on ground	3684	3697
5 Height to top of cab	2074	2123
6 Max overall height	4025	4182
7 Hinge pin height at max lift	3091	3250
8 Hinge pin height at carry position	251	218
9 Reach at max lift and dump	676	837

	277B mm	287B mm
10 Clearance at max lift and dump	2349	2386
11 Ground clearance	353	283°
12 Departure angle	62°	47°
13 Maximum dump angle	40°	51°
14 Maximum width over track	1898	1962
Turning radius from center		
15 left	1545	1615
16 right	1603	1514
17 full	2512	2433
18 Reach with level arms and bucket	1455	1378
19 Rack back angle at max height	97°	87°

Standard Equipment

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

Alternator, 90-amp	Gauges:	Seat, Suspension
Air Cleaner, Dual Element, Radial Seal	fuel level	Seat Belt, retractable, 50 mm
Armrest, pull down	hour meter, digital	Sight gauge, coolant and hydraulic oil
Battery, 12-volt, 650 CCA	Indicators	Starting Aid, Glow Plugs
Brake, Parking SAHR	Air Filter Restriction	Support, Lift Arm
Cleanout, belly pan	Alternator Output	Switch, Ignition
Controls, Pilot-Operated, Hydraulic	Armrest raised/operator out of seat	Tail Lights
Coupler, Mechanical, Quick	Engine Coolant Temperature	Throttle controls, hand and foot
Ecology drains: engine, hydraulic oil	Engine Oil Pressure	Tie Downs, front and rear
and coolant	Hydraulic Filter Restriction	Valve, hydraulic, three section
Electric Socket, 12-volt	Hydraulic Oil Temperature	Windows, top and rear
Engine	Parking Brake Engaged	
Cat 3044C DIT turbocharged	Lifting Provision	
Falling Object Protective Structure,	Four-point	
Level 1	Muffler, Standard	
Fan, Hydraulically driven	Pre-cleaner, self-unloading	
Filter, Fuel, Bayonet-type	Pump, fuel priming	
Filter, hydraulic, spin-on, 4 micron	Pump, hydraulic implement	
Fuel/water separator, spin-on	Pump, Hystat charge and hydraulic fan	
Hydraulics, auxiliary, front, ON/OFF	Rear view mirror, internal	
Hydraulics, continuous flow	Rubber Track undercarriage	
Instrumentation (Audible)	with 457 mm Wide Rubber Track	
Engine Coolant Temperature	Safety control interlock system	
Engine Oil Pressure	Scheduled Oil Sampling (S•O•S) valves	
Hydraulic Oil Temperature	Seat, static	

Optional Equipment

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

Air conditioning with heater/defrost	Headliner	Seat, suspension
Alarm, Back Up	Heater/Defrost, cab	Seat belt, 76 mm for static seat
Battery, 880 CCA	Heater, engine coolant	Seat belt, 76 mm for suspension seat
Control, Work Tool, Electrical	Horn	Synthetic oil for cold weather operation
Counterweight, adds 45 kg to ROC	Hydraulics, auxiliary, front,	Tank, Water, for appropriate work tools
Coupler, hydraulic	proportional	Windows
Cup holder	Hydraulics, self leveling, lift	side, sliding, removable
Debris Barrier for Cab	Lifting Provision	
Door, Front, Laminated Glass with	Single-point (via parts)	
Wiper-Washer	Lights	
Door, Front, Polycarbonate, with	Warning Beacon	
Wiper-Washer, for Demolition use	Front and Rear, Working	
Floormat	Machine Security System (MSS)	
Falling Object Protective Structure,		
Level II, attaches to existing FOPS		

277B and 287B Multi Terrain Loaders

HEHL3009 (02/2004) hr

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

www.CAT.com
© 2004 Caterpillar

CATERPILLAR[®]