313D Series 2



Hydraulic Excavator



Linginio	
Engine	Model
Engine	Power (ISO 14396)

313D Series 2 Features

Engine and Hydraulics

The powerful C4.4 engine meets China Nonroad Stage III emission standards and is combined with a highly efficient hydraulics system providing excellent machine performance with low fuel consumption.

Structures

Caterpillar design and manufacturing techniques assure outstanding durability and service life.

Operator Station

The spacious cab features excellent visibility and easy-to-access switches. The monitor features a full-color graphical display which is user intuitive and highly visual with built-in pre-start machine checks. Overall, the new cab provides a comfortable working environment for efficient day-long operation.

Service and Maintenance

This machine has been designed so that routine service and maintenance can be completed quickly and easily to help reduce ownership costs. Convenient access points with extended intervals and advanced filtration keeps down-time to a minimum.

Complete Customer Support

Your Cat dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment.

Cat 313D Series 2 Total Solutions

Caterpillar and its extensive dealer network offer a wide variety of solutions designed to meet the unique needs of your business.

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Achieve high productivity and lower operating costs with the Cat 313D Series 2 Hydraulic Excavator. Unmatched versatility, improved controllability, easy operation and a comfortable, redesigned operator station help make the 313D Series 2 an industry-leading performer.



Enhanced comfort, operation and visibility.

Operator Station

The ergonomically designed operator station is spacious, quiet and comfortable, assuring high productivity during a long work day. All switches are located on the right-hand console for convenient access.

Monitor

The monitor is a full-color Liquid Crystal Display (LCD) that can be adjusted to minimize sun glare. It has the capability of displaying information in Chinese and twenty-seven other languages.

Joystick Control

Low-effort pilot-operated joystick controls are designed to match the operator's natural wrist and arm position for maximum comfort and minimum fatigue.

Seat

The suspension seat provides a variety of adjustments to accommodate a wide range of operators. All seats include a reclining back, upper and lower seat slide adjustments, and height and tilt adjustments, to meet operator needs for comfort and productivity.

Console

The right and left joystick console can be adjusted to meet individual preferences, improving operator comfort and productivity during the course of a day.

Cab Exterior

The cab shell features thick steel tubing along the bottom perimeter of the cab, improving resistance to fatigue and vibration.



Cab Structure and Mounts

The cab shell is attached to the frame with viscous rubber cab mounts, which dampen vibrations and sound levels while enhancing operator comfort. Thick steel tubing along the bottom perimeter of the cab, improves resistance to fatigue and vibration.

Windows

To maximize visibility, all glass is affixed directly to the cab, eliminating window frames. The upper front windshield opens, closes and stores on the roof above the operator with a one-touch action release system.

Wipers

Pillar-mounted wipers increase the operator's viewing area and offer continuous and intermittent modes.

Engine

Delivering the most work per liter of fuel consumed.



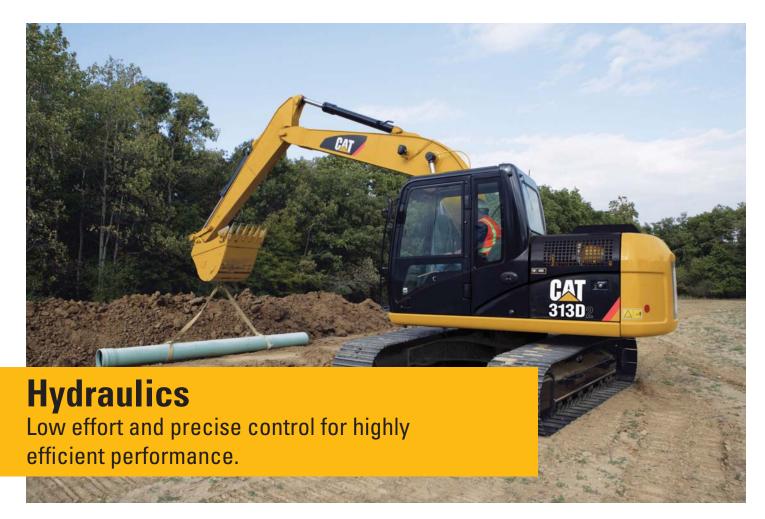
The Cat C4.4 engine has been designed to meet China Nonroad Stage III emission standards. This engine incorporates a time-proven mechanical governor and a low pressure fuel injection system which are major contributors to the improvement of fuel system robustness, high fuel efficiency and ease of troubleshooting. High filtration performance from the primary filter incorporating a water separator and a secondary filter also help to improve fuel filtration system reliability.

Automatic Engine Control and Fuel Delivery

With a net power of 68 kW (91 hp) the 313D Series 2 has been designed with fuel economy in mind.

Economy Mode

Available as standard, economy mode allows you to balance the demands of performance and fuel economy while maintaining the breakout forces and lift capacity enjoyed at standard power.



Outstanding Performance

The 313D Series 2 hydraulic system is designed for high efficiency and performance. This compact design utilizes short tubes and lines, reducing friction and pressure drops, resulting in a more efficient use of power.

- Hydraulic snubbers at the rod end of the boom cylinders and both ends of the stick cylinder cushion shock, reduce sound and increase cylinder life.
- Flow is reduced to a minimum when controls are in the neutral position to reduce fuel consumption and extend component life.
- Electronic under speed control electronically adjusts pump output to not exceed engine power, preventing the need to reserve engine power to avoid engine stalls.
- Hydraulic cross-sensing system uses two hydraulic pumps up to 100 percent of engine power under all operating conditions, improving productivity with faster implement speeds and quicker, stronger pivot turns.

Boom and Stick Regeneration Circuit

The boom and stick regeneration circuit saves energy during boom-down and stick-in operation, increasing efficiency and lowering operating costs.

Easy Operation

Work mode and power mode switches have been eliminated making full power available at all times. Operators do not need to learn different modes, an automatic boom and swing priority function automatically selects the best mode based on joystick movement.

Undercarriage and **Structures**

Strong, stable and easy to maneuver.

Caterpillar uses advanced engineering and software to analyze all structures, creating a durable, reliable machine for the robust applications. More than 70 percent of the structural welds are robotic and achieve three times the penetration over manual welds. These structural components and undercarriage are the backbone of the machine's durability.

Carbody Design

X-shaped, box-section carbody provides excellent resistance to torsional bending. Robot-welded track roller frames are press-formed, pentagonal units that deliver exceptional strength and service life.

Grease Lubricated Track

Grease lubricated track seals protect the track link and deliver long track link pin and bushing inner wear.

Travel Motors

Travel motors with automatic speed selection let the 313D Series 2 automatically change up and down from high and low speeds in a smooth, controlled manner.





Front Linkage

Reliable, durable and versatile.

Built for performance and long service life, Cat booms and sticks are welded, box-section structures with thick multi-plate high strength steel fabrications.

Service intervals are extended with self-lubricating bearings that resist corrosion and galling for superior durability.

Heavy Duty Stick

A 2.5 m (8'2") heavy duty stick has additional plates, new forged parts and welded joints for increased durability in the toughest of applications.

Heavy Duty Boom

A 4.65 m (15'3") one-piece, heavy duty boom features parts made from a new forging pattern and additional, thicker plates. A light attached to the left side offers improved visibility in dark and low-light conditions.

Work Tools

Dig, hammer, rip, and cut with confidence.

An extensive range of Cat Work Tools for the 313D Series 2 includes buckets, rippers, couplers and hammers. Each is designed to optimize the versatility and performance of your machine.

Buckets

Next Generation Cat buckets feature four standard bucket categories. Each category is based on intended bucket durability when used in recommended application and material. Each bucket durability is available as pin-on, or can be used with a quick coupler.

General Duty Buckets (GD)

For digging in low impact, lower abrasion materials such as dirt, loam, and mixed compositions of dirt and fine gravel. Example: Digging conditions in which General Duty tip life exceeds 800 hours.

Typically larger General Duty Buckets are the most popular sizes, and are used by site developers to mass excavate in low abrasion applications.

- Lighter structures decrease load time and increase the weight that can be lifted.
- Standard size adapters and tips.
- Sidebars are pre-drilled for optional sidecutters.

Severe Duty Buckets (SD)

For higher abrasion conditions such as well shot granite and caliche. Example: Digging conditions where tip life ranges from 200 to 400 hours with Penetration Plus tips.

- Bottom wear plates are about 50% thicker than Heavy Duty Buckets.
- Side wear plates are about 40% larger than Heavy Duty Buckets for added protection against abrasive and gouging wear.
- Heavy Duty and Severe Duty Buckets use same size adapters.
- Adapters are sized to accommodate higher abrasion conditions.
- Tips are up-sized (over the General Duty bucket) for enhanced performance and durability.
- Sidebars are pre-drilled for optional sidecutters and sidebar protectors.







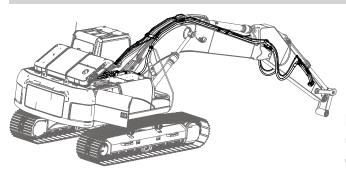
Center-Lock™ Pin Grabber Coupler

Pin grabber couplers allow work tools to be changed quickly – improving overall production and increasing machine versatility. Coupler is pinned on in place of the bucket using standard pins and allows one machine to be used for multiple tasks on the job site.

Hammers

Cat E Series hammers are the first 100% Caterpillar designed and manufactured hammers. The features such as automatic shutoff and external adjusted operating pressure are fully leveraged and combined with a new housing design guarantee the outstanding performance for quarry and demolition applications.







Hydraulic Kits

Caterpillar offers field-installed hydraulic kits that are uniquely designed to integrate Cat Work Tools with Cat excavators. Hoses and tubes are pre-made, pre-shaped, and pre-painted to make installation quick and easy.

Comprehensive Product Support

All Cat Work Tools are backed up by a world-wide network of wellstocked spare-parts depots and highly experienced after-sales service and support personnel.

Serviceability

Simplified service and maintenance features save you time and money.

Ground Level Service

The design and layout of the 313D Series 2 was made with the service technician in mind. Many service locations are easily accessible from ground level allowing service and maintenance to get completed quickly and efficiently.

Pump Compartment

A service door on the right side of the upper structure allows ground-level access to the hydraulic pumps, hydraulic filters, and engine oil filter.

Radiator Compartment

The left service door allows easy access to the engine radiator, hydraulic oil cooler, water separator, primary and secondary fuel filter, and AC condenser. A reserve tank and drain cock are attached to the radiator for simplified ground level maintenance.

The air filter features a double-element construction for superior cleaning efficiency. When the air cleaner plugs, a warning is displayed on the monitor screen inside the cab. Maintenance free batteries are standard along with a battery disconnect switch.

Hydraulic Filter

The hydraulic return filter is an in-tank design with a service life of 2,000 hours. A sensor indicates through the in-cab monitor when the filter is plugged and needs to be replaced.

Greasing Points

A concentrated remote greasing block on the boom allows the greasing of hard-to-reach locations on the boom and stick.

Fan Guard

Engine radiator fan is 180 degree enclosed by fine wire mesh, which provides maximum protection when carrying out routine service and maintenance.

Anti-Skid Plate

Anti-skid plating covers the entire upper structure along with the tool box to prevent slipping during maintenance.



Diagnostics and Monitoring

The 313D Series 2 is equipped with Scheduled Oil Sampling $(S \cdot O \cdot S^{SM})$ ports for the hydraulic system, engine oil, and coolant. Standard hydraulic test ports situated throughout the hydraulic system enable quick and easy fault finding in the event of a problem.

Extended Service Interval

313D Series 2 service and maintenance intervals have been extended to reduce machine service time and increase machine availability.



Product Support

Cat dealers utilize a worldwide computer network to find in-stock parts to minimize machine downtime. You can also save money with our line of remanufactured components.

Machine Selection

Your Cat dealers can provide specific recommendations with detailed comparisons of the Cat machines you are considering before you buy. This ensures you get the right sized machine and appropriate work tools to meet all of your application needs.

Maintenance Services

Repair option programs guarantee the cost of repairs up front. Condition Monitoring Services and Diagnostic programs such as Scheduled Oil Sampling, Coolant Sampling and Technical Analysis help you avoid unscheduled repairs.

Customer Support Agreements

Cat dealers offer a variety of product support agreements which can be tailored to meet your specific needs. These plans can cover the entire machine – including attachments – to help protect your investment.

Replacement

Repair, rebuild, or replace? Your Cat dealers can help you evaluate the costs involved so you can make the right choice.

Engine		
Engine Model	Cat C4.4	
Net Power – ISO 14396	75 kW	100 hp
Net Power – SAE J1349/ISO 9249	68 kW	91 hp
Bore	105 mm	4.13 in
Stroke	127 mm	5 in
Displacement	4.4 L	268.5 in ³

- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No engine derating required below 2300 m (7,546 ft) altitude.
- The 313D Series 2 meets emission standards of China Nonroad Stage III.
- The 313D Series 2 meets the Stage I of sound regulation.

Weights		
Operating Weight – Standard	13 400 kg	29,541.95 lb
Undercarriage		

 • HD Boom 4.65 m (15'3"), HD 2.5 m (8'2") Stick, 500 mm (20") Triple Grousers track shoes, SD 0.65 m³ (0.85 yd³) bucket

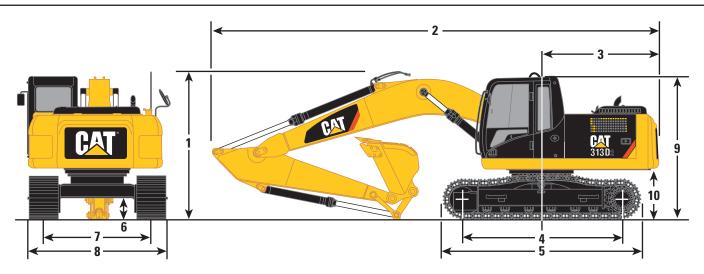
Swing Mechanism		
Swing Speed	12.2 rpm	
Swing Torque	30.9 kN·m	22,825 lbf-ft
Drive		
Maximum Travel Speed	5.6 km/h	3.5 mph
Maximum Drawbar Pull	114 kN	25,628 lbf

Hydraulic System		
Main System – Maximum Flow (Total)	254 L/min	67 gal/min
Swing System – Maximum Flow	127 L/min	34 gal/min
Maximum Pressure – Equipment	30 500 kPa	4,424 psi
Maximum Pressure – Travel	35 000 kPa	5,076 psi
Maximum Pressure – Swing	23 000 kPa	3,336 psi
Pilot System – Maximum Flow	21.9 L/min	5.79 gal/min
Pilot System – Maximum Pressure	4120 kPa	598 psi
Boom Cylinder – Bore	110 mm	4.33 in
Boom Cylinder – Stroke	1015 mm	40 in
Stick Cylinder – Bore	120 mm	4.72 in
Stick Cylinder – Stroke	1197 mm	47.1 in
Bucket Cylinder – Bore	100 mm	3.93 in
Bucket Cylinder – Stroke	939 mm	37 in
Service Refill Capacities		

Service Refill Capacities			
Fuel Tank Capacity	250 L	66.05 gal	
Cooling System	17.88 L	4.73 gal	
Engine Oil (with filter)	16 L	4.23 gal	
Swing Drive	3 L	0.8 gal	
Final Drive (each)	3 L	0.8 gal	
Hydraulic System (including tank)	104 L	27.48 gal	
Hydraulic Tank	90.6 L	23.94 gal	

Dimensions

All dimensions are approximate.



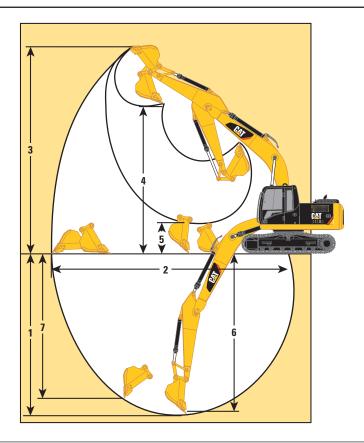
Boom Options	HD Boom 4.65 m (15'3")	
Stick Options	2.5HD (8'2")	
1 Shipping Height*	2830 mm	9'3"
Shipping Height with Guard Rail	2830 mm	9'3"
2 Shipping Length – Standard Undercarriage	7610 mm	24'11"
3 Tail Swing Radius	2140 mm	7'0"
4 Length to Center of Rollers – Standard Undercarriage	2780 mm	9'1"
5 Track Length – Standard Undercarriage	3490 mm	11'5"
6 Ground Clearance	440 mm	1'5"
7 Track Gauge	1990 mm	6'6"
8 Transport Width – 500 mm (20") Shoes	2490 mm	8'2"
9 Cab Height	2760 mm	9'1"
10 Counterweight Clearance**	900 mm	3'0"

^{*}Including shoe lug height.

^{**}Without shoe lug height.

Working Ranges

All dimensions are approximate.



Boom Options		HD Boom 4.65 m (15'3")		
Stick Options	2.5HD (8	B'2")		
1 Maximum Digging Depth	5580 mm	18'4"		
2 Maximum Reach at Ground Level	8210 mm	26'11"		
3 Maximum Cutting Height	8510 mm	27'11"		
4 Maximum Loading Height	6060 mm	19'11"		
5 Minimum Loading Height	1980 mm	6'6"		
6 Maximum Depth Cut for 2440 mm (8 ft) Level Bottom	5370 mm	17'7"		
7 Maximum Vertical Wall Digging Depth	5050 mm	16'7"		

Note: The measurement is applicable on the machine equipped with the SD 0.65 $\mathrm{m^3}$ (0.85 $\mathrm{yd^3}$) bucket.

Operating Weight and Ground Pressure

Standard Undercarriage without Blade		500 mm Triple Grou	· · /	
HD Boom – 4.65 m (15'3")				
2.5HD (8'2")	13 400 kg	29,541.95 lb	43.4 kPa	6.3 psi

Weights are rounded up to nearest 100 kg (220 lb) including SD 0.65 m³ (0.85 yd³) bucket (620 kg/1,367 lb).

Major Component Weights

Base Machine (with boom cylinder, without counterweight, front linkage and track)	4490 kg	9,898.76 lb
Undercarriage – Standard Undercarriage	2560 kg	5,643.84 lb
Counterweight – Standard Counterweight	2450 kg	5,401.33 lb
Boom (includes lines, pins and stick cylinder) – Reach Boom (4.65 m/15'3") HD	1220 kg	2,689.64 lb
Stick (includes lines, pins and bucket cylinder) – HD 2.5 (8'2")	640 kg	1,410.96 lb
Track Shoe (STD/per two tracks) – 500 mm (20") triple grouser	1460 kg	3,218.75 lb
Buckets (reference only) – SD 0.65 m ³ (0.85 yd ³) (includes sidecutter and tip)	620 kg	1,366.87 lb

All weights are rounded up to nearest 10 kg and lb except for buckets. Kg and lb were rounded up separately so some of the kg and lb do not match. Base machine includes 75 kg (165 lb) operator weight, 90% fuel weight, and undercarriage with center guard.

Bucket and Stick Forces

		Series 2 4.65 m (15'3")
Stick Options	2.5H	D (8'2")
General Duty	0.65 m ³	0.85 yd³
Bucket Digging Force (ISO)	95 kN	21,356.85 lbf
Stick Digging Force (ISO)	65 kN	14,612.59 lbf
Bucket Digging Force (SAE)	85 kN	19,108.77 lbf
Stick Digging Force (SAE)	64 kN	14,387.78 lbf
Severe Duty	0.65 m ³	0.85 yd³
Bucket Digging Force (ISO)	96 kN	21,581.66 lbf
Stick Digging Force (ISO)	65 kN	14,612.59 lbf
Bucket Digging Force (SAE)	83 kN	18,659.15 lbf
Stick Digging Force (SAE)	63 kN	14,162.97 lbf

Bucket Specifications and Compatibility

	Wi	Width		Capacity		ight	Fill	HD Reach Boom
	mm	ft/in	m³	yd³	kg	lb	%	2.5 HD (8'2")
Without Quick Coupler								
General Duty (GD)	1050	3.44/41	0.65	0.85	494	1,089	100%	•
Severe Duty (SD)	1050	3.44/41	0.65	0.85	559	1,232	90%	•
	Maximum load pin-on (payload + bucket)						kg	1750
							lb	3,858

The above loads are in compliance with hydraulic excavator standard EN474, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity with front linkage fully extended at ground line with bucket curled.

Maximum Material Density:

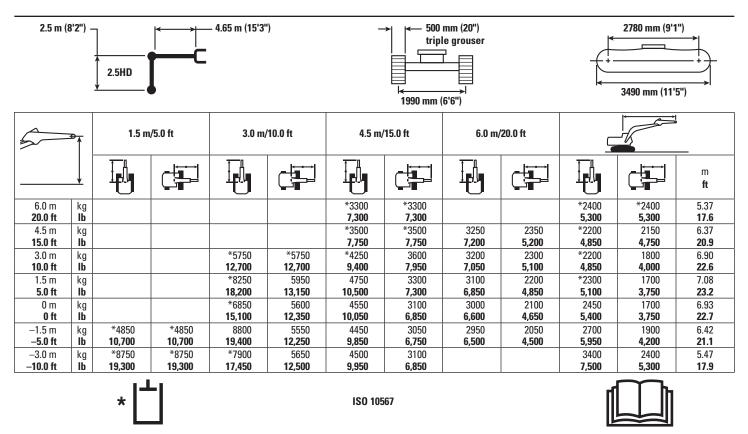
2100 kg/m³ (3,540 lb/yd³)

Capacity based on ISO 7451.

Bucket weight with long tips.

Caterpillar recommends using appropriate work tools to maximize the value customers receive from our products. Use of work tools, including buckets, which are outside of Caterpillar's recommendations or specifications for weight, dimensions, flows, pressures, etc. may result in less-than-optimal performance, including but not limited to reductions in production, stability, reliability, and component durability. Improper use of a work tool resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.

Reach Boom Lift Capacities – Counterweight: 2.45 mt (5,401.33 lb) – without Bucket



^{*}Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

Lift capacity stays with ±5% for all available track shoes.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

313D Series 2 Standard Equipment

Standard Equipment

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

ENGINE

- Diesel engine Cat C4.4 with mechanical governor
- -2300 m (7,546 ft) altitude capability
- 50 amp alternator, air intake heater
- China Nonroad Stage III emission package
- 10 micron fuel filter
- 4 micron fuel pre-filter
- One touch low idle with AEC
- Remote engine oil filter
- Radial seal air filter, double element
- Two speed travel
- Water separator in fuel line with indicator
- Waved fin radiator with side by side type oil cooler
- Fix type A/C condenser
- 43° C (109.4° F) High ambient cooling
- Air precleaner

CAB

- Bolt-on FOGS capability
- Openable front windshield with assist device
- Pillar mounted upper windshield wiper and washer
- Front windshield glass split by 70/30
- Cab sliding upper door window
- Rear window, emergency exit
- Removable lower windshield with in cab storage bracket
- Metal hatch
- Interior lighting
- · Standard joystick
- · Laminated front upper windshield
- Seat high back, mechanical suspension with head rest
- Seat belt, retractable
- Floor mat
- Bi-level air conditioner (auto) with defroster
- · Windshield washer

- · Coat hook
- · Ashtray and lighter
- · Beverage holder
- · Literature holder
- · Radio mounting
- Mounting for two stereo speakers
- Antenna flexible type
- Storage compartment suitable for lunch box
- Monitor
- Language display
- -Full graphic and full color display
- Warning information
- Filter/fluid change information
- Machine condition
- Error code and tool mode setting information
- -Full time clock on monitor
- Positive filtered ventilation
- Seat integrated control joystick
- · Adjustable armrest
- Adjustable console
- Neutral lever (lock out) for all controls
- Travel control pedals with removable hand levers
- Capability of installing two additional pedals

ELECTRICAL

- · Circuit breaker
- · Cat battery

COUNTERWEIGHT

• Counterweight without lifting eye (2450 kg/5,401.33 lb)

FRONT LINKAGE

- HD Boom, 4.65 m (15'3")
- HD Stick, 2.5 m (8'2")
- · Bucket linkage

TECHNOLOGY

• Product LinkTM, Cellular

HYDRAULIC

- Hydraulic main pump
- High performance hydraulic return filter
- Regeneration control for boom and stick
- Boom lowering device for back up
- · Boom drift reducing valve
- · Stick drift reducing valve
- Reverse swing damping valve
- Automatic swing parking brake
- · Auxiliary hydraulic valve
- Capability of stackable valves for main valve
- · Capability of auxiliary circuit

SECURITY

- · Cat one key security system
- Signaling/warning horn
- Mirrors, rearview (frame right, cab left)
- Secondary engine shutoff switch
- · Door locks
- Cap locks on fuel and hydraulic tanks
- Lockable external tool/storage box
- Openable skylight for emergency exit
- · Rearview camera-ready

LIGHTS

- Halogen boom light (left side)
- Exterior lights integrated into storage box

UNDERCARRIAGE

- Grease lubricated track (GLT2)
- Idler section track guiding guard
- Towing eye on base frame
- Standard idler tension spring
- Guard, standard bottom
- 500 mm (20") triple grouser shoes

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com**

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