318D L

Heavy Duty Application Hydraulic Excavators

Cat® C4.2 ACERT™ Engine	
Gross Power	91 kW
Net Power (SAE J1349)	86 kW
Weights	
Operating Weight – Long Undercarriage	17 620 kg

318D L Features

Engine and Hydraulics

A powerful Cat® 4.2 ACERT™ engine which meets Tier 3 and EU Stage IIIA combined with a highly efficient hydraulics system provides excellent machine performance with low fuel consumption.

Structures

Caterpillar design and manufacturing techniques assure outstanding durability and service life in the toughest applications.

Operator Station

Spacious cab with 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 downtime 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 318D L Total Solutions

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

Contents

Increased horsepower, improved controllability and a comfortable, redesigned operator station help make the Cat® 318D L Hydraulic Excavator an industry-leading performer. Easy to operate with unmatched versatility, the 318D L will help increase productivity and lower operating costs.

Operator Station

New levels of comfort, visibility and operation.

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 400×234 pixels Liquid Crystal Display (LCD) graphic display. The monitor angle can be adjusted to minimize sun glare and has the capability of displaying information in Chinese and twenty-six 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 standard suspension seat provides a variety of adjustments to suit the operator's size and weight including fore/aft, height and weight. Wide adjustable armrests and a retractable seat belt are also included.

Console

The consoles feature a simple, functional design to reduce operator fatigue, ease of switch operation and excellent visibility. Both consoles have attached armrests with height adjustments.

Cab Exterior

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

Cab Mounts

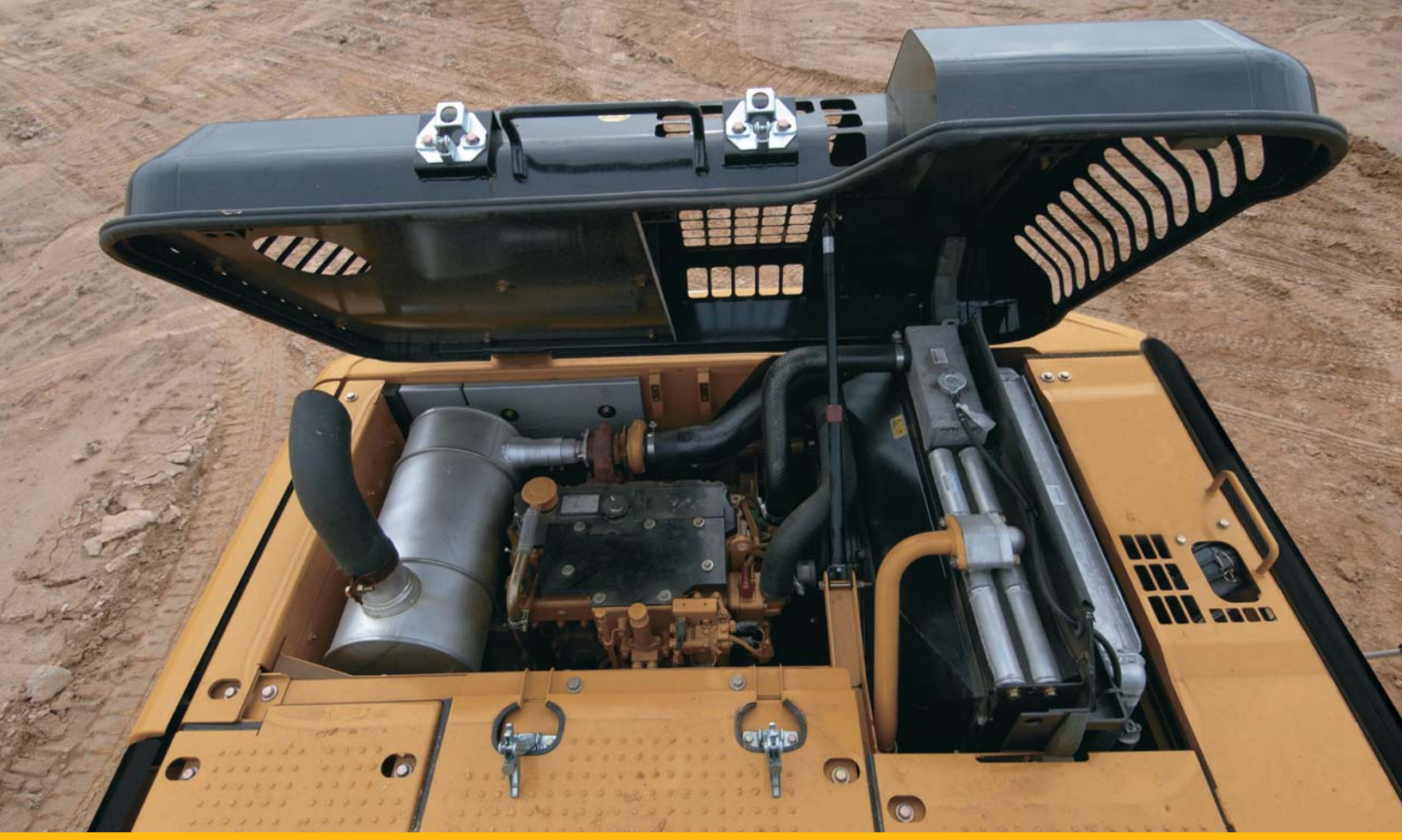
The cab shell is attached to the frame with viscous rubber cab mounts, which dampen vibrations and sound levels while enhancing operator comfort.

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

Clean, quiet operation with superior power.

The Cat C4.2 engine with ACERT technology optimizes performance and meets U.S. EPA Tier 3 and EU Stage IIIA regulations. In conjunction with integrated electronics, ACERT technology reduces emissions during the combustion process by using advanced technology in the air and fuel systems. The Cat C4.2 engine has five percent more power than the former engine, allowing for more hydraulic pressure and increased productivity.

Automatic Engine Control and Fuel Delivery

A three-stage control with one-touch command maximizes fuel efficiency and reduces sound levels. Fuel delivery is managed by the ADEM™ A4 Engine Controller for the best performance per liter (gallon) of fuel used. Flexible fuel mapping allows the engine to respond quickly to varying application needs.

Electronic controls govern the fuel injection system. Multiple injection fuel delivery involves a high level of precision and by precisely shaping the combustion cycle, lowers combustion chamber temperatures, generates fewer emissions and optimizes fuel combustion. This means more work output for your fuel cost.

Crankshaft and Pistons

A forged, one-piece, induction hardened crankshaft enhances balance, decreases vibration and improves abrasion resistance. Heat resistant, aluminum alloy pistons have a short compression height for greater efficiency and longer life.

Economy Mode

Available as a standard feature, 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.

Hydraulics

High efficiency and performance with low effort and precise control.

Outstanding Performance

The 318D L hydraulic system is designed for high efficiency and performance. Auxiliary hydraulic and electrical lines are routed to the boom foot making installation of hydraulic circuits much easier. The new compact design utilizes shorter 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 cylinders cushion shock, reduce sound and increase cylinder life.
- Flow is reduced to a minimum when controls are in neutral to reduce fuel consumption and extend component life.
- Hydraulic Cross-Sensing System uses two hydraulic pumps to 100 percent of engine power under all operating conditions, improving productivity with faster implement speeds and quicker, stronger pivot turns.
- Improved balance and lift capacity with six percent increase in additional counterweight.

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 cost.

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

Excellent stability and maneuverability.

Caterpillar uses advanced engineering and software to analyze all structures, creating a durable, reliable machine for the toughest applications. More than 70 percent of the structural welds are robotic and achieve additional 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. Integral to the track roller frame are the standard idler and center guards, which help maintain track alignment when traveling or working on slopes.

Grease Lubricated Track

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

Travel Motors

Travel motors with automatic speed selection let the 318D L automatically change up and down from high and low speeds in a smooth, controlled manner.

Front Linkage

Performance, reliability and durability.

Built for performance and long service life, Cat booms and sticks are welded, box-section structures with thick multi-plate high strength steel fabrications. The 318D L offers one boom with four different stick options.

Heavy Duty Stick

A 2.6 m heavy duty stick has additional plates, new forged parts and welded joints for increased durability, digging force and lifting capability.

Reach Stick

A 2.9 m reach stick maximizes digging envelope. It is made of high tensile strength steel using a large box section design with interior baffle plates for increased durability.

Boom

A 5.1 m 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.

Versatility

Do more with Cat Work Tools.

Cat Buckets and Cat Ground Engaging Tools (GET) are designed and matched to the machine ensuring optimal performance and fuel consumption. They are built to Caterpillar specifications guaranteeing quality and durability, whatever the application.

General Duty Buckets

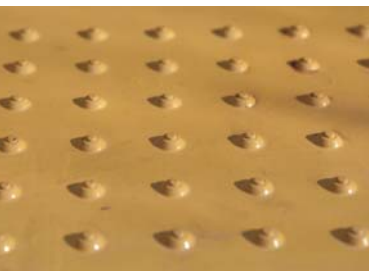
General Duty buckets have been designed for machines digging in low-impact, moderately abrasive materials such as dirt, loam, gravel and clay.

Severe Duty Buckets

Severe duty are best suited to highly abrasive applications such as shot rock and granite.

Serviceability

Simplified service and maintenance saves time and money.



Ground Level Service

The design and layout of the 318D L was made with the service technician in mind. Many service locations are easily accessible at 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 pump, pilot filter, drain filter, and the engine oil filter.

Radiator Compartment

The left service door allows easy access to the engine radiator, oil cooler, air-to-air-after-cooler, water separator and 3rd fuel filter. A reserve tank and drain cock are attached to the radiator for simplified 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.

Capsule Filter

The hydraulic return filter, a capsule filter, is situated outside the hydraulic tank. This filter prevents contaminants from entering the system when hydraulic oil is changed and keeps the operation clean.

Greasing Points

A concentrated remote greasing block on the boom delivers grease to hard-to-reach locations on the front.

Fan Guard

Engine radiator fan is completely enclosed by fine wire mesh, reducing the risk of an accident.

Anti-Skid Plate

Anti-skid plate covers top of storage box and upper structure to prevent slipping during maintenance.

Diagnostics and Monitoring

The 318D L is equipped with S·O·S^{SM} sampling ports and hydraulic test ports for the hydraulic system, engine oil, and for coolant. A test connection for the Cat Electronic Technician (Cat ET) service tool is located behind the cab.

Extended Service Interval

318D L service and maintenance intervals have been extended to reduce machine service time and increase machine availability.

Complete Customer Support

Cat dealer services help you operate longer with lower costs.

Product Support

You will find nearly all parts at our dealer parts counter. Cat dealers utilize a worldwide computer network to find in-stock parts to minimize machine downtime. Save money with remanufactured components.

Machine Selection

Make detailed comparisons of the machines you are considering before you buy. What are the job requirements, machine attachments and operating hours? What production is needed? Your Cat dealer can provide recommendations.

Maintenance Services

Repair option programs guarantee the cost of repairs up front. 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, and work with customers to develop a plan the best meets specific needs. These plans can cover the entire machine, including attachments, to help protect the customer's investment.

Replacement

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

318D L Hydraulic Excavator Specifications

Engine

Engine Model	Cat® C4.2 ACERT™
Gross Power	91 kW
Net Power	86 kW
ISO 9249	86 kW
Bore	102 mm
Stroke	130 mm
Displacement	4.25 L

- 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 altitude.
- The 318D L meets U.S. EPA Tier 3 and EU Stage IIIA Directive/97/68/EC emissions requirements.

Weights

Operating Weight – Long Undercarriage	17 620 kg

- 2600 mm heavy duty stick and 600 mm shoes.

Swing Mechanism

Swing Torque	43 400 N·m
Swing Speed	10.2 rpm

Drive

Maximum Drawbar Pull	157 kN
Travel Speed	5.6 km/h

Hydraulic System

Main Implement System – Maximum Flow (2x)	150 L/min
Maximum Pressure – Implements	35 000 kPa
Maximum Pressure – Travel	35 000 kPa
Maximum Pressure – Swing	22 550 kPa
Pilot System – Maximum Flow	26.2 L/min
Pilot System – Maximum Pressure	4120 kPa
Boom Cylinder – Bore	110 mm
Boom Cylinder – Stroke	1193 mm
Stick Cylinder – Bore	120 mm
Stick Cylinder – Stroke	1331 mm
Bucket Cylinder – Bore	100 mm
Bucket Cylinder – Stroke	1048 mm

Service Refill Capacities

Fuel Tank	300 L
Cooling System	22 L
Engine Oil	17.5 L
Swing Drive	3 L
Final Drive (Each)	5 L
Hydraulic System (Including Tank)	190 L
Hydraulic Tank	106 L

Standards

Cab/FOGS	SAE J1356 FEB88 ISO 10262

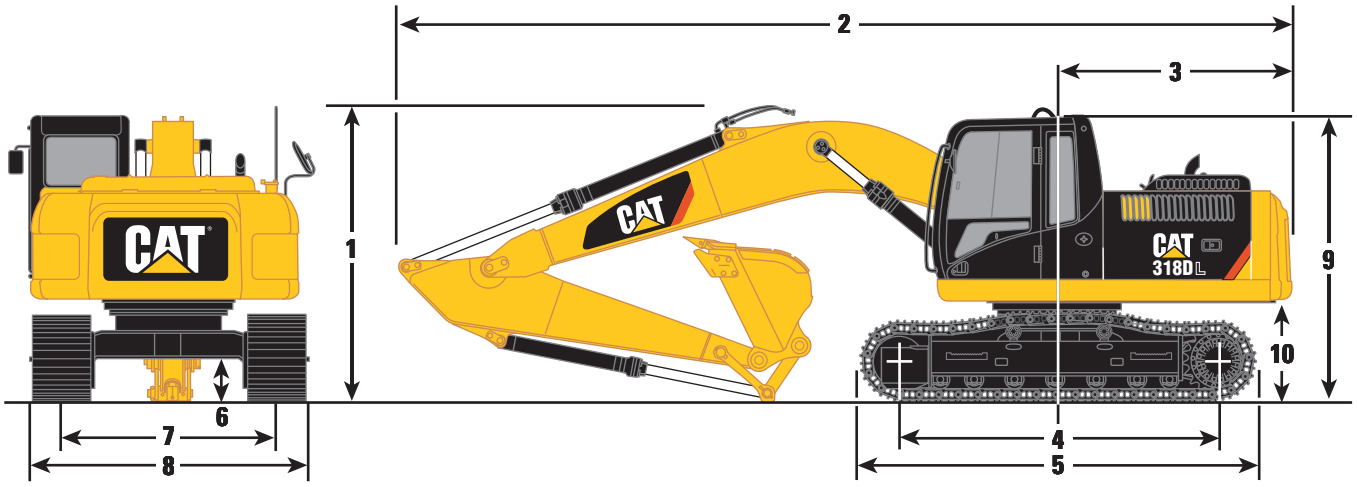
Sound Performance

Performance:

- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT 98 is 73 dB(A), for the cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.

Dimensions

All dimensions are approximate.



Boom Option	Reach – 5.1 m	
Stick Option	**R2.6 m**	**R2.9 m**
1 Shipping Height	3030 mm	3070 mm
2 Shipping Length	8540 mm	8560 mm
3 Tail Swing Radius	2500 mm	2500 mm
4 Length to Center of Idler and Sprocket	3170 mm	3170 mm
5 Track Length	3970 mm	3970 mm
6 Ground Clearance	460 mm	460 mm
7 Track Gauge	1990 mm	1990 mm
8 Transport Width – 600 mm shoes (standard)	2590 mm	2590 mm
9 Cab Height	2870 mm	2870 mm
10 Counterweight Clearance	1030 mm	1030 mm

Ground Pressure

Track Width	2.6 m HD stick		2.9 m STD stick
	0.8 m³ GD bucket	**0.73 m³ SD bucket**	**0.8 m³ GD bucket**
600 mm triple grouser	42.0 kPa	42.3 kPa	42.0 kPa

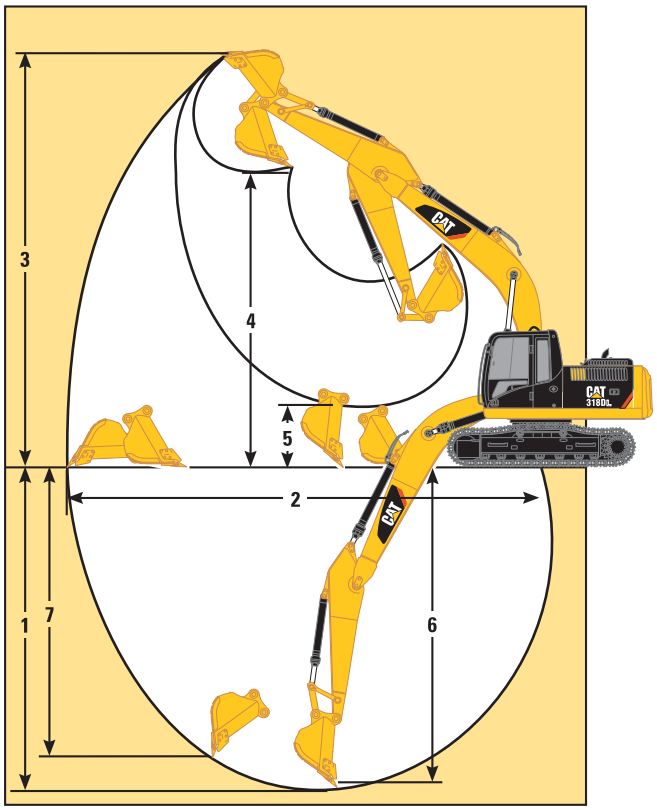
Operating Weights

Caterpillar designed and built track-type undercarriage.

Track Width	Operating Weight		
	2.6 m HD stick		2.9 m stick
	0.8 m³ GD Bucket/BKT	**0.73 m³ SD BKT**	**0.8 m³ GD BKT**
600 mm triple grouser	17 690 kg	17 840 kg	17 670 kg

Reach Excavator Working Ranges

Reach (R) boom configuration



Stick Option	R2.6 m	R2.9 m
Bucket – Long Fixed Undercarriage	**0.61 m³**	**0.8 m³**
1 Maximum Digging Depth	6070 mm	6370 mm
2 Maximum Reach at Ground Level	8750 mm	8960 mm
3 Maximum Cutting Height	8920 mm	8870 mm
4 Maximum Loading Height	6310 mm	6310 mm
5 Minimum Loading Height	2330 mm	2030 mm
6 Maximum Depth Cut for 2440 mm Level Bottom	5840 mm	6130 mm
7 Maximum Vertical Wall Digging Depth	5350 mm	5360 mm
Bucket Digging Force (SAE) (ISO)	100.2 kN 114.5 kN	100.2 kN 114.5 kN
Stick Digging Force (SAE) (ISO)	77.7 kN 80.4 kN	73.0 kN 75.4 kN

All measurements are approximate.

Buckets

Buckets have tapered sides, angled corner teeth, dual radius curvature, horizontal wear strips, and holes for optional side cutters.

Part Number	Bucket Type	Linkage	Edge	Width (mm)	Capacity (m^3)	GET	Tip Number	Weight (kg)
370-3250	GD	Std	ISJ-Str	1100	0.8	J300 × 5	9J-3167 Long	652
358-4489	SD	Std	ISJ-Str	1079	0.73	J350 × 5	8E-3752 HD Long	798

Material Densities

Material	kg/m^3	Material	kg/m^3
Clay, dry	1480	Gravel, pit run	1930
Clay, wet	1660	Rock/dirt, 50%	1720
Earth, dry	1510	Sand, dry	1420
Earth, wet	1600	Sand, wet	1840
Loam	1250	Sand and Clay	1600
Gravel, dry	1510	Stone, crushed	1600
Gravel, wet	2020	Top soil	950

For densities of other materials see Caterpillar Performance Handbook.

318D L Hydraulic Excavator Specifications

Reach Boom Lift Capacities

 Load Point Height

 Load Radius Over Front

 Load Radius Over Side

 Load at Maximum Reach

STICK – 2.6 m HD
BUCKET – None

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

BOOM – 5.1 m
COUNTERWEIGHT – 3.2 mt

		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
														m
7.5 m	kg											*3250	*3250	4.76
6.0 m	kg							*3500	3400			*2850	*2850	6.18
4.5 m	kg					*4550	*4550	*4200	3350			*2750	2550	7.01
3.0 m	kg			*8700	*8700	*5750	4900	*4700	3200			*2800	2250	7.44
1.5 m	kg					*7050	4500	4900	3000	*3400	2150	*3000	2150	7.56
Ground Line	kg			*6250	*6250	7350	4250	4750	2900			*3350	2150	7.36
–1.5 m	kg	*5700	*5700	*10 100	7700	7250	4200	4700	2850			3900	2400	6.84
–3.0 m	kg	*9950	*9950	*10 450	7850	*7250	4250					4900	2950	5.89
–4.5 m	kg			*7450	*7450							*5250	4900	4.23

* 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.

STICK – 2.9 m Std
BUCKET – None

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

BOOM – 5.1 m
COUNTERWEIGHT – 3.2 mt

		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
														m
7.5 m	kg											*2800	*2800	5.19
6.0 m	kg							*3700	3500			*2500	*2500	6.52
4.5 m	kg							*4050	3400			*2450	*2450	7.31
3.0 m	kg			*7950	*7950	*5500	5000	*4550	3250	*3400	2300	*2500	2200	7.73
1.5 m	kg			*6550	*6550	*6850	4600	4950	3100	3550	2200	*2650	2050	7.84
Ground Line	kg			*6600	*6600	7400	4350	4800	2950	3500	2150	*2950	2100	7.65
–1.5 m	kg	*5350	*5350	*9650	7700	7250	4200	4700	2850			*3550	2250	7.15
–3.0 m	kg	*9000	*9000	*10 900	7800	7300	4250	4750	2900			4500	2750	6.24
–4.5 m	kg			*8350	8100	*5600	4400					*5200	4150	4.72

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

318D L Standard Equipment

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

Alternator, 50 amp

Automatic engine speed control

Automatic swing brake

Bolt-on Falling Object Guard System (FOGS) capability

Cab

- Ashtray with cigar lighter
- Coat hook
- Drink holder
- Economy mode
- Horn
- Bi-level air conditioner (auto) with defroster
- Seat H-back with head rest and mechanical suspension

Language display monitor (full graphic/full color display)

- Clock
- Filter/fluid change information
- Level check for hydraulic oil, engine oil and coolant
- Warning messages

Product Link

Light, interior

Literature holder

Metal roof and sunshade

Openable front windshield

Positive filtered ventilation

Storage compartment

Travel control pedals with removable hand levers

Door locks and caps lock with one-key security system

Light, storage box mounted (1)

Mirrors (frame and cab)

Power Train

- Cat® C4.2 engine with ACERT™ Technology
- 24-volt electric starter
- Air intake heater
- Water separator

Radial seal air filter, double element

Reverse swing damping valve

Third fuel filter

Undercarriage

- Hydraulic track adjusters
- Idler and center section track guiding guards
- Track-type undercarriage with grease lubricated seals
- 600 mm triple grouser track shoes
- Center section track guiding guard

Water level indicator with water separator

318D L Optional Equipment

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

2.6 m Heavy Duty stick, boom and bucket linkage boom combination

2.9 m stick, boom and bucket linkage combination

318D L Hydraulic Excavator

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

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

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