

# **321**Hydraulic Excavator

## **Technical Specifications**

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.

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Engine		
Engine Model	Cat® C3.6	
Net Power		
ISO 9249	96 kW	129 hp
ISO 9249 (DIN)	131 hp (me	etric)
Engine Power		
ISO 14396	100 kW	134 hp
ISO 14396 (DIN)	136 hp (me	etric)
Bore	98 mm	4 in
Stroke	120 mm	5 in
Displacement	3.6 L	220 in <sup>3</sup>
Biodiesel Capability	Up to B200	(1)

- · Noncertified emission engine.
- Recommended for use up to 4000 m (13,120 ft) altitude with engine power derate above 3000 m (9,840 ft).
- Advertised power is tested per the specified standard in effect at the time of manufacture.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air intake system, exhaust system and alternator.
- Engine speed at 2,000 rpm.
- (1) Cat engines are compatible with diesel fuel blended with the following lower-carbon intensity fuels\*\* up to:
  - ✓ 100% biodiesel FAME (fatty acid methyl ester)\*
  - √ 100% renewable diesel, HVO (hydrogenated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

\*For use of blends higher than 20% biodiesel, consult your Cat dealer.

<sup>\*\*</sup>Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Swing Mechanism		
Swing Speed	10.0 rpm	
Maximum Swing Torque	61 kN·m	45.260 lbf·ft

Waximum Swing Torque	OI KIVIII	45,200 101 10	
Weights			
Operating Weight	19 300 kg	42,600 lb	_

4.1 m (13'5") Standard undercarriage, 5.7 m (18'8") Reach boom,
 R2.25 m (7'5") stick, 1.0 m³ (1.31 yd³) General Duty (GD) bucket,
 600 mm (24") triple grouser track shoes and 3650 kg (8,050 lb) counterweight.

Operating Weight 19 700 kg 43,500 lb

4.25 m (13'11") Medium undercarriage, 5.7 m (18'8") Reach Boom,
 R2.25 m (7'5") stick, 1.0 m³ (1.31 yd³) GD bucket, 600 mm (24")
 triple grouser track shoes and 3650 kg (8,050 lb) counterweight.

Track		
Standard Undercarriage		
Track Shoes Width	600 mm	24 in
Number of Shoes (each side)	45	
Number of Track Rollers (each side)	7	
Number of Carrier Rollers (each side)	2	
Medium Undercarriage		
Track Shoes Width	600 mm	24 in
Number of Shoes (each side)	47	
Number of Track Rollers (each side)	7	
Number of Carrier Rollers (each side)	2	
Drive		
Maximum Gradeability	35°/70%	
Maximum Travel Speed	5.5 km/h	3.43 mph
Maximum Drawbar Pull	156 kN	35,070 lbf
Hydraulic System		
Main System – Maximum Flow – Implement	315 L/min	83 gal/min
Maximum Pressure – Equipment – Implement	35 000 kPa	5,075 psi
Maximum Pressure – Travel	35 000 kPa	5,075 psi

25 000 kPa

3900 kPa

120 mm

1260 mm

135 mm

1504 mm

115 mm

1104 mm

3,625 psi

566 psi

5 in

50 in

5 in

59 in

5 in

43 in

Maximum Pressure - Swing

Boom Cylinder – Bore

Boom Cylinder - Stroke

Stick Cylinder - Bore

Stick Cylinder - Stroke

Bucket Cylinder - Bore

Bucket Cylinder - Stroke

Pilot System - Maximum Pressure

Service Refill Capacities		
Fuel Tank Capacity	370 L	97.7 gal
Cooling System	22 L	5.8 gal
Engine Oil (with filter)	11 L	2.9 gal
Swing Drive	6 L	1.6 gal
Final Drive (each)	6 L	1.6 gal
Hydraulic System (including tank)	218 L	57.6 gal
Hydraulic Tank	115 L	30.4 gal

Standards	
Brakes	ISO 10265: 2008
Cab	ISO 10262: 1998 – Level I

Sound Performance		
ISO 6395:2008 (external)	102 dB(A)	
ISO 6396:2008 (inside cab)	72 dB(A)	

• 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 a noisy environment.

#### **Operating Weights and Ground Pressures**

	600 mm (24") Triple Grouser Track Sho			
	We	eight	Ground	Pressure
Base Machine Configurations	kg	(lb)	kPa	(psi)
Base Frame with Track Rollers and Carrier Rollers				
Base Machine with 3650 kg (8,050 lb) Counterweight and 4.1 m (13'5") Standard Undercarriage				
5.7 m (18'8") Reach boom, R2.25 m (7'5") stick, 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> ) GD bucket	19 300	(42,600)	44.4	(6.4)
5.7 m (18'8") Reach boom, R2.5 m (8'2") stick, 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> ) GD bucket	19 300	(42,600)	44.4	(6.4)
Base Machine with 3650 kg (8,050 lb) Counterweight and 4.25 m (13'11") Medium Undercarriage				
5.7 m (18'8") Reach boom, R2.25 m (7'5") stick, 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> ) GD bucket	19 700	(43,500)	43.2	(6.3)
5.7 m (18'8") Reach boom, R2.5 m (8'2") stick, 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> ) GD bucket	19 700	(43,500)	43.2	(6.3)

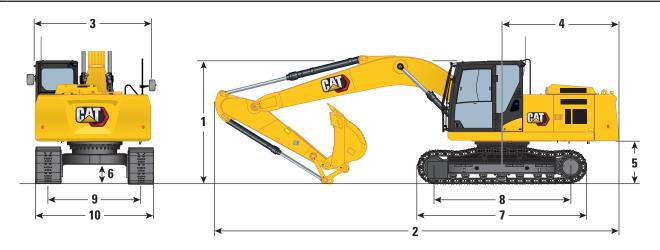
All operating weights include a 90% fuel tank with 75 kg (165 lb) operator.

## **Major Component Weights**

	kg	lb
Base machine (with counterweight, undercarriage, swing frame, base frame with track rollers and carrier rollers, two boom cylinders, pins, 90% fuel tank and 75 kg [165 lb] operator – does not include boom, stick, bucket, boom cylinders, stick cylinder, bucket cylinder, tracks).		
With 3650 kg (8,050 lb) Counterweight and 4.1 m (13'5") Standard Undercarriage	13 470	29,690
With 3650 kg (8,050 lb) Counterweight and 4.25 m (13'11") Medium Undercarriage	13 740	30,300
Track Shoes:		
600 mm (24") Wide, 8.5 mm (0.34") Thick, Triple Grouser Track Shoes for 4.1 m (13'5") Standard Undercarriage	2390	5,270
600 mm (24") Wide, 8.5 mm (0.34") Thick, Triple Grouser Track Shoes for 4.25 m (13'11") Medium Undercarriage	2500	5,500
Two Boom Cylinders	360	790
Weight of 90% Fuel Tank and 75 kg (165 lb) Operator	350	770
Counterweight:		
3650 kg (8,050 lb) Counterweight	3650	8,050
Swing Frame:		
Standard Swing Frame	1860	4,100
Undercarriages:		
Base Frame with Standard Track Rollers and Carrier Rollers for 4.1 m (13'5") Standard Undercarriage	4160	9,160
Base Frame with Standard Track Rollers and Carrier Rollers for 4.25 m (13'11") Medium Undercarriage	4430	9,760
Boom (including lines, pins, stick cylinder):		
5.7 m (18'8") Reach Boom	1690	3,730
Sticks (including lines, pins, bucket cylinder, bucket linkage):		
2.25 m (7'5") Reach Stick	960	2,110
2.5 m (8'2") Reach Stick	960	2,110
Bucket (without linkage):		
1.0 m³ (1.31 yd³) GD Bucket	820	1,810

#### **Dimensions**

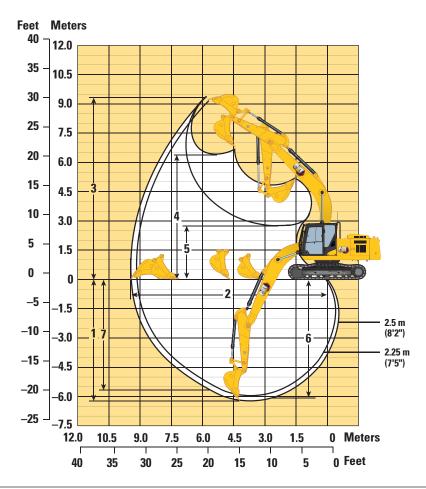
All dimensions are approximate and may vary depending on bucket selection.



Boom Option Reach Boom 5.7 m (18'8")								
Stick Options		Reach Stick Reach Stick R2.25 m (7'5") R2.5 m (8'2")		Reach Stick R2.25 m (7'5")		Reach Stick R2.5 m (8'2")		
Undercarriage Options		4.1 m (13'5") Standard			4.25 m (13'11") Medium			
1 Machine Height:								
Cab Height (without shoe lug height)	2940 mm	9'8"	2940 mm	9'8"	2940 mm	9'8"	2940 mm	9'8"
Shipping Height (including shoe lug height)	3250 mm	10'8"	3350 mm	11'0"	3250 mm	10'8"	3350 mm	11'0"
Handrail Height	3010 mm	9'11"	3010 mm	9'11"	3010 mm	9'11"	3010 mm	9'11"
2 Machine Length:								
With Boom/Stick/Bucket Installed	9570 mm	31'5"	9520 mm	31'3"	9570 mm	31'5"	9520 mm	31'3"
3 Upperframe Width	2760 mm	9'1"	2760 mm	9'1"	2760 mm	9'1"	2760 mm	9'1"
4 Tail Swing Radius	2830 mm	9'3"	2830 mm	9'3"	2830 mm	9'3"	2830 mm	9'3"
5 Counterweight Clearance (without shoe lug)	1020 mm	3'4"	1020 mm	3'4"	1020 mm	3'4"	1020 mm	3'4"
6 Ground Clearance (without shoe lug)	430 mm	1'5"	430 mm	1'5"	430 mm	1'5"	430 mm	1'5"
7 Track Length	4080 mm	13'5"	4080 mm	13'5"	4250 mm	13'11"	4250 mm	13'11"
8 Track Length – Length to Center of Rollers	3270 mm	10'9"	3270 mm	10'9"	3450 mm	11'4"	3450 mm	11'4"
9 Track Gauge – Standard Undercarriage	2200 mm	7'3"	2200 mm	7'3"	2380 mm	7'10"	2380 mm	7'10"
<b>10</b> Transportation Width								
600 mm (24") Shoes	2800 mm	9'2"	2800 mm	9'2"	2980 mm	9'9"	2980 mm	9'9"
Bucket Type	GI	)	GI	)	GD		GD	
Bucket Capacity	1.00 m <sup>3</sup>	1.31 yd <sup>3</sup>	1.00 m <sup>3</sup>	1.31 yd <sup>3</sup>	1.00 m <sup>3</sup>	1.31 yd <sup>3</sup>	1.00 m <sup>3</sup>	1.31 yd <sup>3</sup>
Bucket Tip Radius	1490 mm	4'11"	1490 mm	4'11"	1490 mm	4'11"	1490 mm	4'11"

#### **Working Ranges**

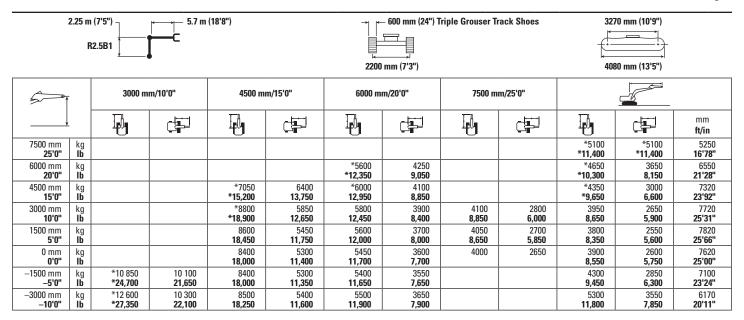
All dimensions are approximate and may vary depending on bucket selection.



Boom Option	Reach Boom 5.7 m (18'8")									
Stick Options	Reach Stick R2.25 m (7'5")		Reach Stick R2.5 m (8'2")		Reach Stick R2.25 m (7'5")		Reach Stick R2.5 m (8'2")			
Undercarriage Options		4.1 m (13'5'	') Standard		4.25 m (13'11") Medium					
1 Maximum Digging Depth	5970 mm	19'7"	6220 mm	20'5"	5970 mm	19'7"	6220 mm	20'5"		
2 Maximum Reach at Ground Line	9150 mm	30'0"	9380 mm	30'9"	9150 mm	30'0"	9380 mm	30'9"		
3 Maximum Cutting Height	9120 mm	29'11"	9240 mm	30'4"	9120 mm	29'11"	9240 mm	30'4"		
4 Maximum Loading Height	6250 mm	20'6"	6370 mm	20'11"	6250 mm	20'6"	6370 mm	20'11"		
5 Minimum Loading Height	2920 mm	9'7"	2670 mm	8'9"	2920 mm	9'7"	2670 mm	8'9"		
6 Maximum Depth Cut for 2440 mm (8 ft) Level Bottom	5760 mm	18'11"	6030 mm	19'9"	5760 mm	18'11"	6030 mm	19'9"		
7 Maximum Vertical Wall Digging Depth	5360 mm	17'7"	5610 mm	18'5"	5360 mm	17'7"	5610 mm	18'5"		
Bucket Digging Force (ISO)	135 kN	30,280 lbf	135 kN	30,440 lbf	135 kN	30,280 lbf	135 kN	30,440 lbf		
Stick Digging Force (ISO)	119 kN	26,800 lbf	111 kN	25,040 lbf	119 kN	26,800 lbf	111 kN	25,040 lbf		
Bucket Type	C	iD	GD		GD		GD		GD	
Bucket Capacity	1.00 m <sup>3</sup>	1.31 yd³	1.00 m <sup>3</sup>	1.31 yd³	1.00 m <sup>3</sup>	1.31 yd³	1.00 m <sup>3</sup>	1.31 yd³		
Bucket Tip Radius	1490 mm	4'11"	1490 mm	4'11"	1490 mm	4'11"	1490 mm	4'11"		

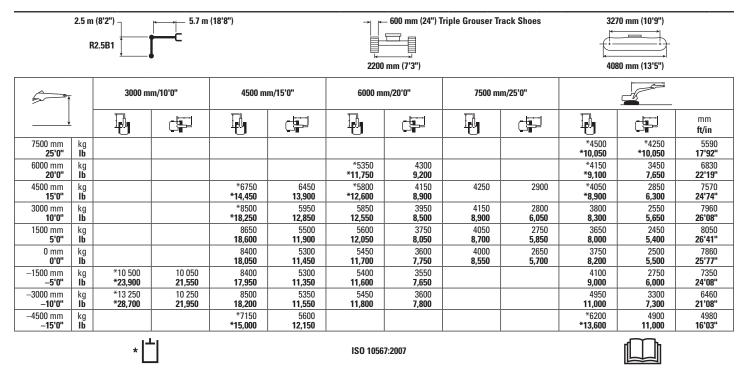
#### Reach Boom Lift Capacities - Counterweight: 3650 kg (8,050 lb) - without Bucket

4080 mm (13'5") Standard Undercarriage



#### Reach Boom Lift Capacities – Counterweight: 3650 kg (8,050 lb) – without Bucket

4080 mm (13'5") Standard Undercarriage



<sup>\*</sup>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.

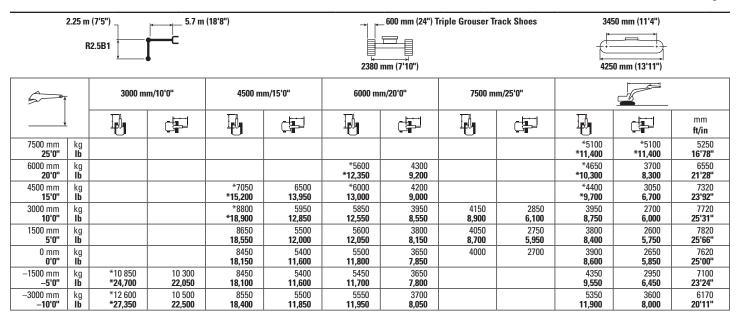
They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift 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.

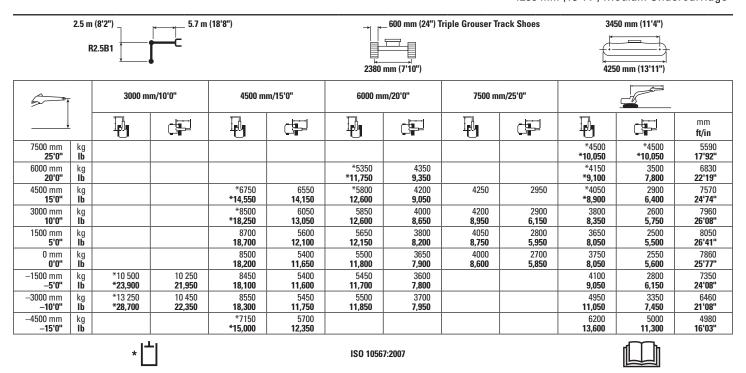
#### Reach Boom Lift Capacities - Counterweight: 3650 kg (8,050 lb) - without Bucket

4250 mm (13'11") Medium Undercarriage



#### Reach Boom Lift Capacities – Counterweight: 3650 kg (8,050 lb) – without Bucket

4250 mm (13'11") Medium Undercarriage



<sup>\*</sup>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.

#### **Bucket Specifications and Compatibility**

									4.1 m (13'5") Standard Undercarriage		4.25 m (13'11") Medium Undercarriage	
		Width		Capacity		Weight		Fill	Reach Boom		Reach Boom	
									R2.25 m (7'5")	R2.5 m (8'2")	R2.25 m (7'5")	R2.5 m (8'2")
	Linkage	mm	in	m³	yd³	kg	lb	%	Stick	Stick	Stick	Stick
Pin-On (No Quick Coupler)							_					
General Duty	В	1256	50	1.00	1.31	802	1,768	95	•	•	•	•
Maximum load with pin-on (payload + bucket)				kg	2642	2514	2700	2570				
				lb	5,825	5,542	5,952	5,666				

The above loads are in compliance with hydraulic excavator standard EN474-5:2006+A3:2013, 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:** 

● 1800 kg/m³ (3,000 lb/yd³)

Capacity based on ISO 7451:2007.

Bucket weight with General Duty 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.

#### **Attachments Offering Guide**

Not all Attachments are available in all regions. Consult your Cat dealer for configurations available in your region.

✓ Match

PIN-ON ATTACHMENTS					
Boom Type		Reach Boom			
Stick Length		R2.25 m (7'5") Reach Stick	R2.5 m (8'2") Reach Stick		
Hydraulic Hammers	H120GC S	✓	✓		

## **321 Standard and Optional Equipment**

#### **Standard and Optional Equipment**

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

	Standard	Optional
ENGINE		
Cat C3.6 single turbo diesel engine	✓	
Three selectable modes: Power, Smart, Eco	✓	
One-touch low idle with automatic engine speed control (AEC)	✓	
Two stage fuel filtration system with water separator and indicator	✓	
4000 m (13,120 ft) altitude capability with derate from 3000 m (9,840 ft)	✓	
52 °C (126 °F) high-ambient cooling capacity with derate above 48 °C (118 °F)	✓	
-10 °C (14 °F) cold start capability	✓	
100 Amp alternator	✓	
Radial sealed double element air filter	✓	
Electric fuel priming pump	✓	
HYDRAULIC SYSTEM		
Electronic main control valve	✓	
Hydraulic boom and stick regeneration circuits	✓	
Automatic hydraulic warm up	✓	
Single type electronic main pump	✓	
Automatic two speed travel	✓	
High performance hydraulic return filter	✓	
Hydraulic auxiliary lines (hammer)		✓

	Standard	Optional
CAB		
Sound suppressed cab with viscous mounts	✓	
Front windshield guard (wire mesh)		✓
Mechanical-suspension seat with headrest and armrest angle adjustment	✓	
High-resolution 203 mm (8") LCD touchscreen monitor	✓	
Keyless push to start engine control	✓	
51 mm (2") orange seat belt	✓	
AM/FM Bluetooth® radio with USB/ Auxiliary ports	✓	
Auto bi-level air conditioner with pressurized function	✓	
Fixed left-side console	✓	
One-button joysticks	✓	
24V DC outlet	✓	
Storage compartments	✓	
Cup holder	✓	
Coat hook	✓	
Openable steel hatch	✓	
Openable skylight	✓	
Openable tempered front upper windshield	✓	
Rear window emergency exit	✓	
Sun visor		✓
Dome interior lights	✓	
Washable floor mat	✓	

(continued on next page)

## **321 Standard and Optional Equipment**

#### Standard and Optional Equipment (continued)

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

	Standard	Optional
UNDERCARRIAGE AND STRUCTURES		•
4.1 m (13'5") Standard undercarriage		✓
4.25 m (13'11") Medium undercarriage		✓
Grease lubricated track link	✓	
Bottom guard	✓	
Center track guiding guard	✓	
3650 kg (8,050 lb) counterweight	✓	
600 mm (24") triple grouser track shoes	✓	
BOOM, STICK AND LINKAGE		
5.7 m (18'8") Reach boom	✓	
2.25 m (7'5") Reach stick		✓
2.5 m (8'2") Reach stick		✓
Bucket linkage, B1 family with lifting eye	✓	
ELECTRICAL SYSTEM		
Two 750 CCA maintenance free batteries	✓	
Simplified electrohydraulic (EH) control system/harness	✓	
Centralized electrical disconnect switch	✓	
LED chassis and cab lights	✓	
LED left-side boom light	✓	
LED right-side boom light		✓

<sup>&</sup>lt;sup>1</sup>Provides core telematics data to manage health, maintenance insights, and condition monitoring. Other plans available for more comprehensive data reporting. Consult your Cat dealer for details.

	Standard	Optional
CAT TECHNOLOGY		
VisionLink <sup>TM</sup>	<b>√</b> 1	
SERVICE AND MAINTENANCE		
Scheduled Oil Sampling (S·O·S <sup>SM</sup> ) ports	✓	
Radiator screen for radiator/oil cooler to prevent plugging by debris	✓	
SAFETY AND SECURITY		
Rearview mirrors; handrail mounted (one), cab handhold mounted (one)	✓	
Bolt free service platform with anti-skid plate	✓	
Neutral lever (lock out) for all controls	✓	
Ground level accessible secondary engine shutoff switch in cab	✓	
Handrail and handhold	✓	
Signaling/warning horn	✓	
Rearview camera		✓
Travel alarm		✓

#### **321 Attachments**

#### **Dealer Installed Kit and Attachments**

Attachments may vary. Consult your Cat dealer for details.

#### CAB

- Right Hand (RH) Floor pedal for hammer
- Sun visor

#### **GUARDS**

• Cabin front windshield mesh guard

#### **SAFETY AND SECURITY**

• Travel alarm

#### **OTHER ATTACHMENTS**

- Rearview camera
- Hammer lines kit (R2.25 m [7'5"] stick)
- Track guiding guard kit
- 1.0 m³ (1.31 yd³) GD bucket reinforcement kit
- Ground Engaging Tools (GET) tip kit
- Adaptor kit

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

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