



333

Hydraulic Excavator

Technical Specifications

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

Table of Contents

Specifications	2
Engine	2
Swing Mechanism	2
Weights	2
Track	2
Drive	2
Hydraulic System	2
Service Refill Capacities	2
Standards	3
Sound Performance	3
Operating Weights and Ground Pressures	3
Major Component Weights	4
Dimensions	5
Working Ranges	6
Bucket Specifications and Compatibility	7
Attachments Offering Guide	8
Standard and Optional Equipment	9
Dealer Installed Kits and Attachments	11

333 Hydraulic Excavator Specifications

Engine

Engine Model	Cat® C7.1	
Net Power		
ISO 9249	193.8 kW	260 hp
ISO 9249 (DIN)	263 hp (metric)	
Engine Power		
ISO 14396	195 kW	261 hp
ISO 14396 (DIN)	265 hp (metric)	
Bore	105 mm	4 in
Stroke	135 mm	5 in
Displacement	7.01 L	428 in ³
Biodiesel Capability	Up to B20 ⁽¹⁾	

- Meets China Nonroad Stage III emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
- Recommended for use up to 4500 m (14,764 ft) altitude with engine power derate above 3000 m (9,842.5 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.*

Swing Mechanism

Swing Speed	11.5 rpm	
Maximum Swing Torque	111 kN·m	81,869 lbf·ft

Weights

Operating Weight	32 600 kg	71,800 lb
• HD Reach boom, HD R3.2 (10'6") stick, HD 1.88 m ³ (2.46 yd ³) bucket, 600 mm (24") triple grouser shoes, and 7700 kg (16,980 lb) counterweight.		

Track

Optional Track Shoes Width	600 mm	24 in
Optional Track Shoes Width	800 mm	31 in
Number of Shoes (each side)	50	
Number of Track Rollers (each side)	9	
Number of Carrier Rollers (each side)	2	

Drive

Gradeability	35°/70%	
Maximum Travel Speed	5.9 km/h	3.7 mph
Maximum Drawbar Pull	248 kN	55,820 lbf

Hydraulic System

Main System – Maximum Flow – Implement	560 L/min (280 × 2 pumps)	148 gal/min (74 × 2 pumps)
Maximum Pressure – Equipment – Normal	35 000 kPa	5,075 psi
Maximum Pressure – Travel	35 000 kPa	5,075 psi
Maximum Pressure – Swing	29 800 kPa	4,321 psi
Boom Cylinder – Bore	140 mm	6 in
Boom Cylinder – Stroke	1407 mm	55 in
Stick Cylinder – Bore	160 mm	6 in
Stick Cylinder – Stroke	1646 mm	65 in
Bucket Cylinder – Bore	145 mm	6 in
Bucket Cylinder – Stroke	1151 mm	45 in

Service Refill Capacities

Fuel Tank Capacity	474 L	125.2 gal
Cooling System	25 L	6.6 gal
Engine Oil (with filter)	25 L	6.6 gal
Swing Drive	11.5 L	3.0 gal
Final Drive (each)	4.5 L	1.2 gal
Hydraulic System (including tank)	310 L	81.9 gal
Hydraulic Tank (including suction pipe)	147 L	38.8 gal

333 Hydraulic Excavator Specifications

Standards

Brakes	ISO 10265:2008
Cab/Rollover Protective Structure (ROPS)	ISO 12117-2:2008
Cab/Falling Object Guard System (FOGS) (optional)	ISO 10262:1998 – Level II

Sound Performance

Exterior Sound Power Level – 103 dB(A)
ISO 6395:2008

Operator Sound Pressure Level – 73 dB(A)
ISO 6396:2008

- 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

Base Machine Configurations	600 mm (24") Triple Grouser Shoes		600 mm (24") Double Grouser Shoes		800 mm (31") Triple Grouser Shoes	
	Weight	Ground Pressure	Weight	Ground Pressure	Weight	Ground Pressure
Base Frame with Track Rollers and Carrier Rollers						
7700 kg (16,980 lb) Counterweight and Long Undercarriage Base Machine						
HD Reach Boom + HD R3.2 (10'6") Stick + 1.88 m ³ (2.46 yd ³) HD Bucket	32 600 (71,800)	62 (9.0)	32 900 (72,600)	63 (9.1)	33 500 (73,900)	48 (6.9)
HD Reach Boom + HD R2.8 (9'2") Stick + 1.88 m ³ (2.46 yd ³) HD Bucket	32 500 (71,600)	62 (9.0)	32 800 (72,400)	62 (9.0)	33 500 (73,700)	48 (6.9)

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

333 Hydraulic Excavator Specifications

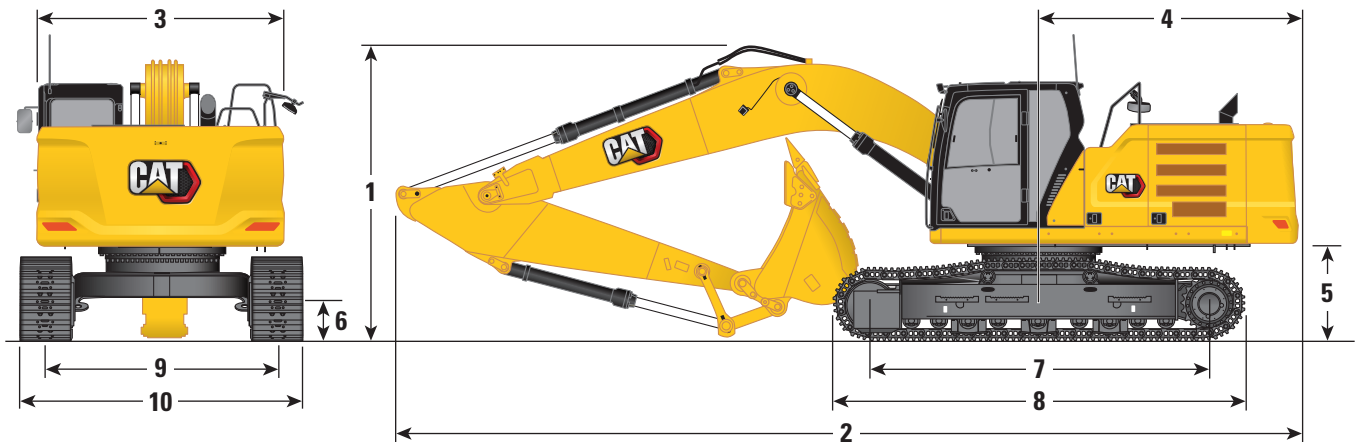
Major Component Weights

	kg	lb
Base Machine Weight (with 7700 kg [16,980 lb] counterweight, upper frame, long undercarriage with track rollers and two boom cylinders – does not include boom, stick, bucket, stick cylinder, bucket cylinders, tracks, fuel tank and operator)	22 130	48,770
Track Shoes:		
600 mm (24") Width, 11 mm (0.43") Thick, Triple Grouser Track Shoes	3650	8,040
600 mm (24") Width, 14.5 mm (0.57") Thick, Double Grouser Track Shoes	3980	8,770
800 mm (31") Width, 13 mm (0.51") Thick, Triple Grouser Track Shoes with Step Extension	4610	10,160
Two Boom Cylinders	500	1,100
Weight of 90% Fuel Tank and 75 kg (165 lb) Operator	470	1,040
Counterweight:		
7700 kg (16,980 lb) Counterweight	7700	16,970
Booms (including lines, pins, stick cylinder):		
6.15 m (20'2") HD Reach Boom	2770	6,110
5.55 m (18'2") Mass Boom	2390	5,270
10.2 m (33'6") Super Long Reach Boom	3250	7,160
Sticks (including lines, pins, bucket cylinder, bucket linkage):		
R2.8DB (9'2") HD Reach Stick	1780	3,920
R3.2DB (10'6") HD Reach Stick	1870	4,120
M2.5DB (8'2") Mass Stick	1670	3,680
SLR7.85A (25'9") Super Long Reach Stick	1580	3,480
Buckets (without linkage, with tips and side cutters):		
1.64 m ³ (2.15 yd ³) SD, DB Linkage	1770	3,900
1.88 m ³ (2.46 yd ³) HD, DB Linkage	1680	3,700
1.91 m ³ (2.50 yd ³) SDS, DB Linkage	1930	4,250
0.57 m ³ (0.75 yd ³) DC, A Linkage	390	860
0.74 m ³ (0.97 yd ³) DC, A Linkage	460	1,010

333 Hydraulic Excavator Specifications

Dimensions

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

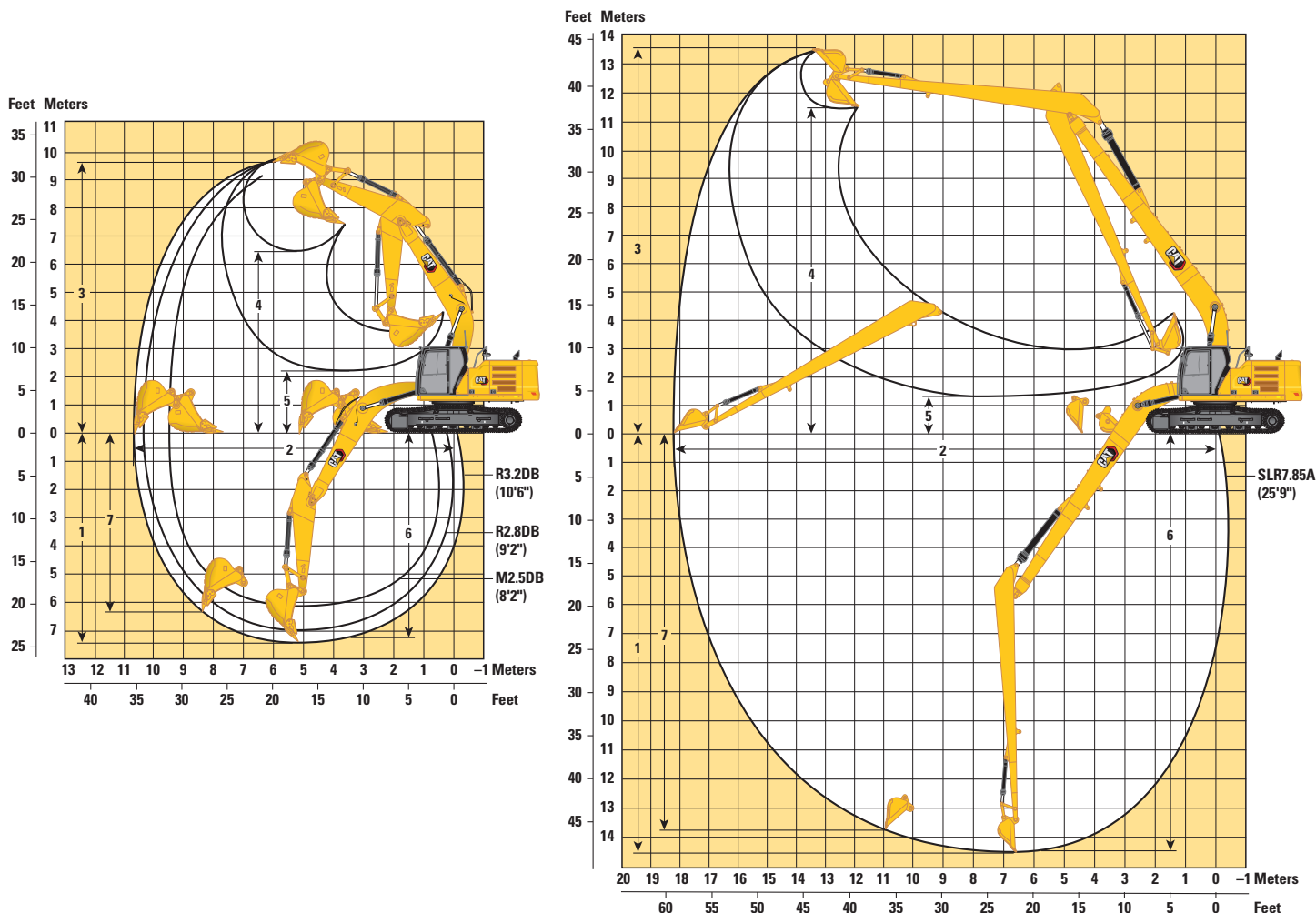


Boom Options	HD Reach Boom 6.15 m (20'2")				Mass Boom 5.55 m (18'2")		SLR Boom 10.2 m (33'6")		
Stick Options	HD Reach Stick				Mass Stick		SLR Stick		
	HD R2.8DB (9'2")		HD R3.2DB (10'6")		M2.5DB (8'2")		SLR7.85A (25'9")		
1 Machine Height:									
Top of Cab Height	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	
Top of FOGS Height	3200 mm	10'6"	3200 mm	10'6"	3200 mm	10'6"	3200 mm	10'6"	
Handrail Height	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	
With Boom/Stick/Bucket Installed	3650 mm	12'0"	3580 mm	11'9"	3530 mm	11'7"	3230 mm	10'7"	
With Boom/Stick Installed	3650 mm	12'0"	3580 mm	11'9"	3440 mm	11'3"	3230 mm	10'7"	
With Boom Installed	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	3060 mm	10'0"	
2 Machine Length:									
With Boom/Stick/Bucket Installed	10 450 mm	34'3"	10 450 mm	34'3"	9870 mm	32'5"	14 480 mm	47'6"	
With Boom/Stick Installed	10 450 mm	34'3"	10 450 mm	34'3"	9850 mm	32'4"	14 480 mm	47'6"	
With Boom Installed	9230 mm	30'3"	9230 mm	30'3"	8600 mm	28'3"	13 390 mm	43'11"	
3 Upperframe Width	2930 mm	9'7"	2930 mm	9'7"	2930 mm	9'7"	2930 mm	9'7"	
4 Tail Swing Radius	3130 mm	10'3"	3130 mm	10'3"	3130 mm	10'3"	3130 mm	10'3"	
5 Counterweight Clearance	1120 mm	3'8"	1120 mm	3'8"	1120 mm	3'8"	1120 mm	3'8"	
6 Ground Clearance	480 mm	1'7"	480 mm	1'7"	490 mm	1'7"	490 mm	1'7"	
7 Track Length – Length to Center of Rollers	3990 mm	13'1"	3990 mm	13'1"	3990 mm	13'1"	3990 mm	13'1"	
8 Track Length – Overall Length	4860 mm	15'11"	4860 mm	15'11"	4860 mm	15'11"	4850 mm	15'11"	
9 Track Gauge – Extended	2740 mm	9'0"	2740 mm	9'0"	2740 mm	9'0"	2740 mm	9'0"	
10 Undercarriage Width:									
600 mm (24") Shoes	3340 mm	10'11"	3340 mm	10'11"	3340 mm	10'11"	3340 mm	10'11"	
800 mm (31") Shoes	3540 mm	11'7"	3540 mm	11'7"	3540 mm	11'7"	3540 mm	11'7"	
Bucket Type	HD		HD		HD		DC		
Bucket Capacity	1.88 m ³	2.46 yd ³	1.88 m ³	2.46 yd ³	2.36 m ³	3.09 yd ³	0.57 m ³	0.75 yd ³	
Bucket Tip Radius	1784 mm	5'10"	1784 mm	5'10"	1787 mm	5'10"	1073 mm	3'6"	

333 Hydraulic Excavator Specifications

Working Ranges

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



Boom Options	HD Reach Boom 6.15 m (20'2")				Mass Boom 5.55 m (18'2")		SLR Boom 10.2 m (33'6")	
Stick Options	HD Reach Stick				Mass Stick		SLR Stick	
	HD R2.8DB (9'2")		HD R3.2DB (10'6")		M2.5DB (8'2")		SLR7.85A (25'9")	
1 Maximum Digging Depth	6970 mm	22'10"	7370 mm	24'2"	6130 mm	20'1"	14 590 mm	47'10"
2 Maximum Reach at Ground Line	10 390 mm	34'1"	10 680 mm	35'0"	9470 mm	31'1"	18 270 mm	59'11"
3 Maximum Cutting Height	9770 mm	32'1"	9660 mm	31'8"	9150 mm	30'0"	13 620 mm	44'8"
4 Maximum Loading Height	6540 mm	21'5"	6510 mm	21'4"	5970 mm	19'7"	11 590 mm	38'0"
5 Minimum Loading Height	2580 mm	8'6"	2170 mm	7'1"	2440 mm	8'0"	1330 mm	4'4"
6 Maximum Depth Cut for 2440 mm (8'0") Level Bottom	6800 mm	22'4"	7200 mm	23'7"	5940 mm	19'6"	14 490 mm	47'6"
7 Maximum Vertical Wall Digging Depth	5270 mm	17'3"	6240 mm	20'6"	4380 mm	14'4"	13 870 mm	45'6"
Bucket Digging Force (ISO)	197 kN	44,290 lbf	197 kN	44,290 lbf	211 kN	47,430 lbf	62 kN	13,940 lbf
Stick Digging Force (ISO)	164 kN	36,870 lbf	147 kN	33,050 lbf	153 kN	34,400 lbf	45 kN	10,120 lbf
Bucket Type	HD		HD		DC		DC	
Bucket Capacity	1.88 m ³	2.46 yd ³	1.88 m ³	2.46 yd ³	2.36 m ³	3.09 yd ³	0.57 m ³	0.75 yd ³
Bucket Tip Radius	1784 mm	5'10"	1784 mm	5'10"	1787 mm	5'10"	1073 mm	3'6"

333 Hydraulic Excavator Specifications

Bucket Specifications and Compatibility

	Linkage	Width		Capacity		Weight		Fill	7700 kg (16,980 lb) Counterweight		
		mm	in	m³	yd³	kg	lb	%	HD Reach		SLR Boom
									HD R3.2 m (10'6")	HD R2.8 m (9'2")	7.85A (25'9") SLR
Pin-On (No Quick Coupler)											
Heavy Duty (HD)	DB	1550	61	1.88	2.46	1621	3,574	100	⊙	⊙	
	DB	1550	61	1.88	2.46	1576	3,574	100	⊙	●	
	DB	1600	63	2.00	2.62	1532	3,377	100	⊙	⊙	
Severe Duty (SD)	DB	1400	56	1.64	2.14	1689	4,171	90	●	●	
	DB	1500	56	1.90	2.49	1848	4,074	90	⊙	●	
	DB	1550	56	1.90	2.49	1877	4,138	90	⊙	●	
	DB	1550	56	1.90	2.49	1833	4,041	90	⊙	●	
Ditch Cleaning (DC)	A	1200	48	0.57	0.74	388	855	100			⊙
Maximum load with pin-on (payload + bucket)								kg	5055	5342	1435
								lb	11,144	11,777	3,164
With Pin Grabber Quick Coupler											
Heavy Duty (HD)	DB	1550	61	1.88	2.46	1621	3,574	100	⊖	⊖	
	DB	1550	61	1.88	2.46	1576	3,574	100	⊖	⊙	
	DB	1600	63	2.00	2.62	1532	3,377	100	⊙	⊙	
Severe Duty (SD)	DB	1400	56	1.64	2.14	1689	4,171	90	⊙	●	
	DB	1500	56	1.90	2.49	1848	4,074	90	⊖	⊙	
	DB	1550	56	1.90	2.49	1877	4,138	90	⊖	⊙	
	DB	1550	56	1.90	2.49	1833	4,041	90	⊖	⊙	
Ditch Cleaning (DC)	A	1200	48	0.57	0.74	388	855	100			◇
Maximum load with coupler (payload + bucket)								kg	4529	4816	909
								lb	9,984	10,617	2,003

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.

Capacity based on ISO 7451:2007.

Bucket weight with General Duty tips.

Maximum Material Density:

- 2100 kg/m³ (3,500 lb/yd³)
- ⊙ 1800 kg/m³ (3,000 lb/yd³)
- ⊖ 1500 kg/m³ (2,500 lb/yd³)
- ◇ 900 kg/m³ (1,500 lb/yd³)

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.

333 Hydraulic Excavator Specifications

Attachments Offering Guide

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

☒ Match

☐ No Match

PIN-ON ATTACHMENTS

Boom Type		HD Reach		Mass Reach
Stick Length		HD R2.8 m (9'2")	HD R3.2 m (10'6")	M2.5 m (8'2")
Hydraulic Hammers	H130 GC	✓	✓	✓
	H130 GC S	✓	✓	✓
	H140 GC	✓	✓	✓
	H140 GC S	✓	✓	✓
	H160 GC	✓	✓	✓
	H160 GC S	✓	✓	✓
	H180 GC S			✓

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
BOOMS, STICKS AND LINKAGES			CAT TECHNOLOGY		
6.15 m (20'2") HD Reach boom		✓	Cat Product Link™	✓	
5.55 m (18'2") Mass boom		✓	Remove Flash	✓	
10.2 m (33'6") Super Long Reach boom		✓	Remote Troubleshoot	✓	
2.8 m (9'2") HD Reach stick		✓	Auto hammer stop	✓	
3.2 m (10'6") HD Reach stick		✓	ELECTRICAL SYSTEM		
2.5 m (8'2") Mass stick		✓	Maintenance-free 1,000 CCA batteries	✓	
7.85 m (25'9") Super Long Reach stick		✓	Centralized electrical disconnect switch	✓	
Bucket linkage, DB-type with lifting eye		✓	Programmable time-delay working lights	✓	
Bucket linkage, DB-type without lifting eye		✓	LED chassis, boom and cab lights	✓	
Bucket linkage, A-type with lifting eye		✓	ENGINE		
Bucket linkage, A-type without lifting eye		✓	Cat® C7.1 single turbo diesel engine	✓	
CAB			Two selectable modes: Power, Smart	✓	
ROPS	✓		4500 m (14,760 ft) altitude capability with engine power derate above 3000 m (9,840 ft)	✓	
High-resolution 203 mm (8") LCD touchscreen monitor	✓		Electric cooling fans with auto-reverse function	✓	
Auto bi-level air conditioner	✓		Auto engine speed control	✓	
Keyless push-to-start engine control	✓		Auto engine idle shutdown	✓	
Height-adjustable console, three steps with tool	✓		Electric fuel priming pump	✓	
Fixed left-side console	✓		50° C (122° F) high-ambient cooling capacity	✓	
Mechanical-suspension seat	✓		-18° C (0° F) cold start capability	✓	
51 mm (2") seat belt	✓		Double element air filter with integrated pre-cleaner	✓	
Console mounted radio (with Bluetooth® pairing and USB port)	✓		2 × 115 Amp dual alternator	✓	
24V DC outlet	✓		Two-stage fuel filtration system with water separator and indicator	✓	
Document storage	✓				
Cup holder	✓				
Beverage holder	✓				
Openable two-piece front window	✓				
Rear window emergency exit	✓				
Upper radial wiper with washer	✓				
Openable steel hatch	✓				
LED dome light	✓				
Roller front sunscreen	✓				
Roller rear sunscreen		✓			
Washable floor mat	✓				
Beacon ready	✓				
Cat Stick Steer		✓			

(continued on next page)

333 Standard and Optional Equipment

Standard and Optional Equipment *(continued)*

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

	Standard	Optional		Standard	Optional
HYDRAULIC SYSTEM			SERVICE AND MAINTENANCE		
Electronic main control valve	✓		Side entry to service platform	✓	
Boom and stick regeneration circuits	✓		Grouped location of engine oil and fuel filters	✓	
Tandem type electronic main pump	✓		Scheduled Oil Sampling (S·O·S SM) ports	✓	
Auto warm up	✓		Ground-level 2nd dipstick for engine oil	✓	
Auto two-speed travel	✓		Integrated vehicle health management system		✓
Boom and stick drift reduction valve	✓		UNDERCARRIAGE AND STRUCTURES		
Element type main hydraulic filter	✓		Long undercarriage	✓	
SAFETY AND SECURITY			600 mm (24") double grouser track shoes		✓
Rearview camera	✓		600 mm (24") triple grouser track shoes		✓
Right-hand-side mirror		✓	800 mm (31") triple grouser track shoes		✓
Right-hand-sideview cameras	✓		Three-piece segmented track guiding guards		✓
Ground-level engine shutoff switch	✓		Full-length segmented track guiding guards		✓
Right-hand handrail and hand hold	✓		Travel motor guards	✓	
Signaling/warning horn	✓		Bottom guards	✓	
Service platform with anti-skid plate and countersunk bolts	✓		Swivel guard	✓	
Hydraulic lock out lever neutralizes all controls	✓		Grease lubricated track links	✓	
Travel alarm		✓	7700 kg (16,980 lb) counterweight	✓	
Swing alarm		✓	Tie-down points (ISO 15818 compliant)	✓	

Dealer Installed Kits and Attachments

Attachments may vary. Consult your Cat dealer for details.

CAB

- RH electrical pedal (two-way) for tool control
- LH electrical pedal (two-way) for tool control
- Radial lower wiper for two piece (70/30) windshield, with washer
- Polycarbonate roof hatch
- P5A laminated glass front windshield and roof hatch (for EU demolition regulation)

GUARDS

- Falling object guard system (not compatible with cab light cover, rain protector)
- Mesh guard full front (not compatible with cab light cover, rain protector)
- Mesh guard lower half front
- Full protecting vandalism guard (not compatible with cab light cover, rain protector)

SERVICE AND MAINTENANCE

- Grease gun holder

SAFETY AND SECURITY

- Bluetooth receiver kit
- 75 mm (3") retractable seat belt

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

© 2022 Caterpillar
All rights reserved

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

CAT, CATERPILLAR, LET'S DO THE WORK, their respective logos, "Caterpillar Corporate Yellow," the "Power Edge" and Cat "Modern Hex" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

AEXQ3371-02 (10-2022)
Replaces AEXQ3371-01
Build Number: 07E
(Taiwan)

