336D, 385C

Long Reach Excavation

	336D	385C
Cat® Engines with ACERT® Technology	C9	C18
Net Power (ISO 9249) at 1800 rpm	200 kW (270 hp)	390 kW (530 hp)
Operating Weight	38.4–40.0 mt	88.3–88.5 mt
Maximum Reach (Short/Long)	15.6–18.0 m	18.0–21.3 m

336D and 385C Long Reach Excavation

Caterpillar® Long Reach Excavation Arrangements have been designed specifically for jobs requiring longer reach than standard excavators, combined with digging capabilities.

Long Reach Excavation (LRE)

Caterpillar Long Reach Excavation machines are ideally suited for applications such as deep or long distance digging in sand or gravel pits (replacing draglines), slope forming, cleaning of settling banks and ponds, drainage, etc. These excavators can feed directly into a hopper or load a truck.

Hydraulics

Designed to deliver power and maximum control for long reach excavation jobs.
For weed-cutting and tilting buckets, medium pressure circuit, as well as hydraulic lines for the boom and the stick, are available as options.

Booms and Sticks

The Long Reach Excavation booms and sticks are purposely designed, following Caterpillar standards, to provide maximum performance and durability in digging applications with a productive bucket size.

Long Reach Excavation Attachments

Caterpillar offers a wide variety of buckets for its Long Reach Excavation product range.

Undercarriage

The heavy duty and wide undercarriages are stable and durable and provide extra stability over the side.

SmartBoom™

The Caterpillar exclusive SmartBoom feature eases the operations by smoothening the movements and accelerating return cycle speed.

Upper Frame and Counterweight

The heavy-duty upper frame guarantees durability and resistance to handle increased loads and movements generated by the demanding long reach application. A heavier counterweight balances the swing bearing and provides enhanced stability.

Complete Customer Service

Your Cat dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment. The dealer will help you choose a plan that can cover everything from machine and attachment selection to replacement.

Service and Maintenance

Fast, easy service has been designed in with extended service intervals, advanced filtration, convenient filter access and user-friendly electronic diagnostics for increased productivity and reduced maintenance costs.

Undercarriage

Durable undercarriage absorbs stresses and provides excellent stability.

Heavy Duty High Wide Undercarriage (HDHW) .
The durable Heavy Duty High Wide undercarriages provide very stable and rugged platforms for long reach digging and loading applications.

- The undercarriage is reinforced and has a high ground clearance.
- Thick carbody plates and increased box section height induce increased weight and lift capacities.

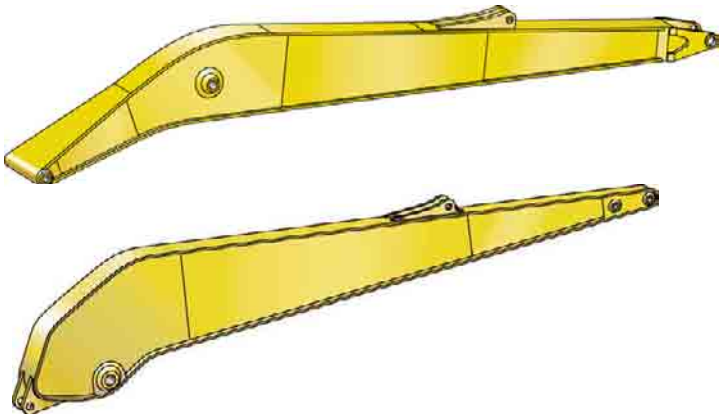
Variable Gauge Undercarriage (LVG). The 385C L undercarriage components offer heavy-duty performance and durability. Track rollers, carrier rollers and idlers are sealed and lubricated for excellent service life.

Other undercarriage configurations are also available. Contact your local Caterpillar dealer for details.

HDHW 336D with Heavy Duty High Wide undercarriage
LVG 385C L with Variable Gauge undercarriage

Boom and Stick for Long Reach Excavation

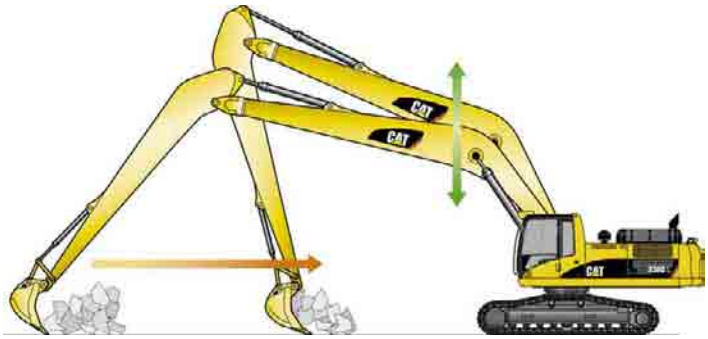
Durable front parts help you get the best out of your machine.



Long Reach Excavation Front Parts. Like all Cat booms and sticks, Caterpillar Long Reach Excavation front parts are built for performance and long service life:

- Finite elements analysis: analyses the design structural stresses and enables optimization of durability and performance.
- Castings and forgings are used at high stress areas such as boom nose, boom foot, boom cylinder and stick foot.
- Internal baffle plates give the structures extra strength and durability to withstand torsional loads.
- Large welded box section structures with thick, multi-plate fabrication are used in high-stress areas.
- The Long Reach Excavation boom and stick are stress relieved, thanks to an in-house heat treatment, to maximize material strength and durability.

Retrofit Front Parts. Long Reach Excavation retrofit front parts provide a maximal versatility to the 336D LRE. A boom hook system gives the opportunity to quickly and easily change the front parts from LRE configuration to reach or straight boom configuration.



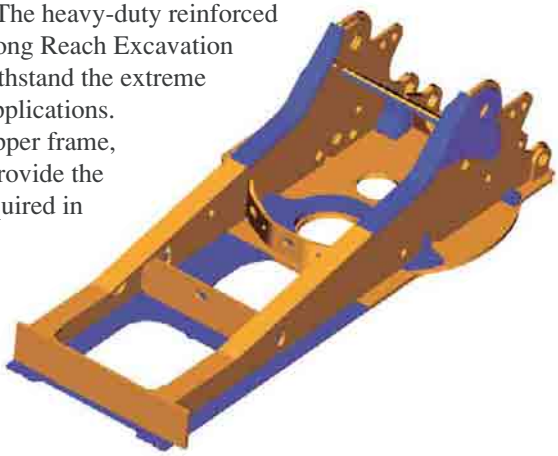
SmartBoom™
Scraping rock and finishing work is easy and fast. SmartBoom simplifies the task and allows the operator to fully concentrate on stick and bucket, while boom freely goes up and down without using pump flow. Therefore, less strain is generated on the structures.

Upper Frame and Counterweight

Purposely designed and built for extreme conditions.

Reinforced Upper Frame. The heavy-duty reinforced upper frames of the Cat Long Reach Excavation models are designed to withstand the extreme load conditions of these applications. Compared to a standard upper frame, several additional plates provide the durability and strength required in these environments.

Counterweight.
A heavier counterweight balances the swing bearing and provides enhanced stability.

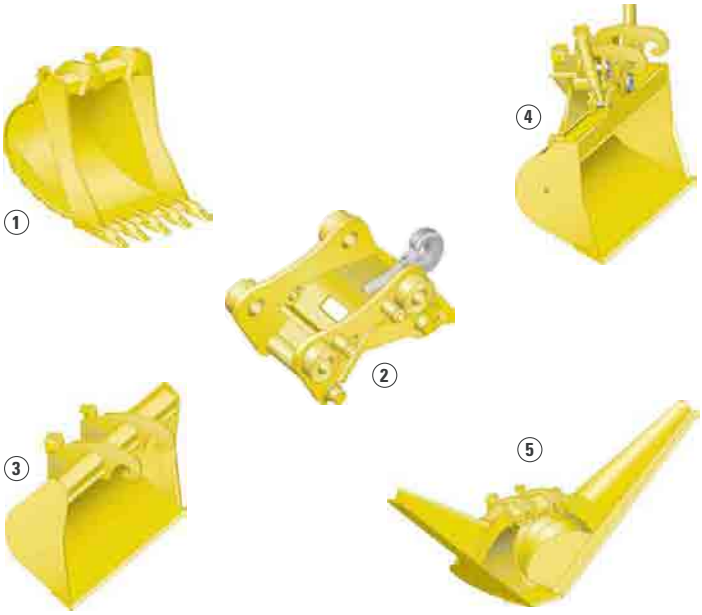


Standard **Heavy-duty**

Swing Bearing to Upper Frame Bolts.
The swing bearing bolts are 20 mm longer on the back half of upper frame for increased joint retention. Bolt grade is increased from 10.9 to 11.9 for increased bolt torque of swing bearing to upper frame and carbody.

Buckets and Quick Couplers

A wide variety of buckets help optimize machine performance. Purpose designed and built to Caterpillar's high durability standards.



Rationalized Bucket Line. Optimized design matches machine configuration perfectly. Improved balance between performance and durability. Buckets feature the Caterpillar K Series Tooth System.

1 Excavation (X). Digs and loads soft to medium materials such as clay and earth. Features weld on tip adapters, wear resistant steel alloy cutting edge and wear plates, and high grade steel side bars.

2 Quick Coupler. Caterpillar quick couplers enable the operator to simply release one work tool and pick up another. Your hydraulic excavator becomes highly versatile. The dedicated CW-Series quick coupler enables a quick tool exchange while maintaining top machine performance. A lifting hook is added for maximum lift capacity.

Buckets for Special Applications. Choose from a variety of buckets such as ditch cleaning buckets (tiltable) and trapezoidal buckets. Each of these buckets enhances the performance in special applications. Ask your dealer representative to recommend the optimum solution for your material and operation.

3 Ditch Cleaning Bucket. Wide, light duty bucket tailored for long reach configurations to clean waterbeds and banks.

4 Tiltable Ditch Cleaning Bucket. Wide, light duty hydraulically tiltable bucket for ditch cleaning and slope finishing applications.

5 Trapezoidal Bucket. Features tapered design to shape ditch banks in one operation and to prepare and maintain small irrigation ditches. Available with fixed or mechanically adjustable wings.

Engines

	336D	385C
Cat® Engines with ACERT™ Technology	C9	C18
Net Power at 1800 rpm		
ISO 9249	200 kW (270 hp)	90 kW (530 hp)
80/1269/EEC	200 kW (270 hp)	390 kW (530 hp)
Bore	112 mm	145 mm
Stroke	149 mm	171 mm
Displacement	8.8 L	18.1 L

- All engine horsepower (hp) are metric including front page.
- All engines meet Stage IIIA emission requirements.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator.
- Full engine net power up to 2300 m altitude (engine derating required above 2300 m).

Bucket Specifications

Excavation Buckets (90% fill factor)

B-family linkage

Width	Capacity (ISO)	Weight*	**336D HDHW** 18 m	
mm	m^3	kg	Pin-on	QC
600	0.44	564		
750	0.59	593		
1000	0.86	698		
1200	1.08	783		N
1250	1.13	800		N
1300	1.19	818	N	N
1400	1.30	853	N	N
1500	1.41	888	N	N

HB-family linkage

Width	Capacity (ISO)	Weight*	**385C LVG** 18 m	
mm	m^3	kg	Pin-on	QC
1150	2.00	2833		
1350	2.60	3073		
1750	3.50	3624		N

Maximum material density 1800 kg/m^3

Maximum material density 1200 kg/m^3

Maximum material density 1500 kg/m^3

N Not recommended

Ditch Cleaning Buckets (90% fill factor)

B-family linkage

Width	Capacity (ISO)	Weight*	**336D HDHW** 18 m	
mm	m^3	kg	Pin-on	QC
1800	1.05	690		
2000	1.18	750		N

DB-family linkage

Width	Capacity (ISO)	Weight*	**385C LVG** 21.5 m	
mm	m^3	kg	Pin-on	QC
2000	1.63	1095		

Tiltable Ditch Cleaning Buckets (90% fill factor)

B-family linkage

Width	Capacity (ISO)	Weight*	**336D HDHW** 18 m	
mm	m^3	kg	Pin-on	QC
1800	0.88	1010		N
2000	0.98	1060	N	N

DB-family linkage

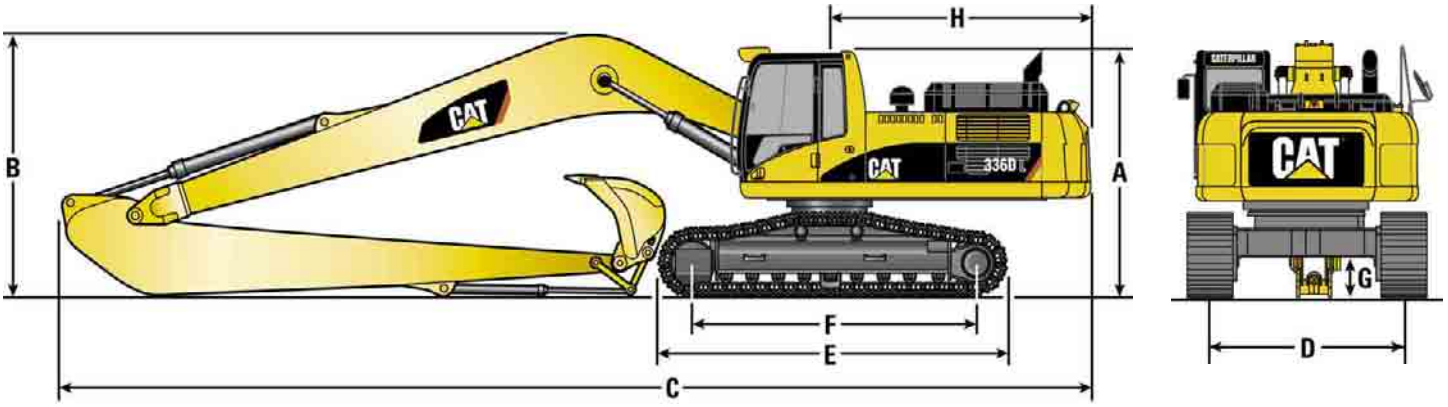
Width	Capacity (ISO)	Weight*	**385C LVG** 21.5 m	
mm	m^3	kg	Pin-on	QC
2200	1.52	1625		

Hydraulic System

	336D	385C
Main Implement System		
Maximum flow	2 x 280 L/min	980 L/min
Maximum pressure		
Implements	350 bar	320 bar
Travel	350 bar	350 bar
Swing	280 bar	260 bar
Pilot System		
Maximum flow	43 L/min	90 L/min
Maximum pressure	39 bar	41 bar
Bucket Cylinder Family (Short/Long)	CB2/B1	HB/DB

Dimensions and Weights

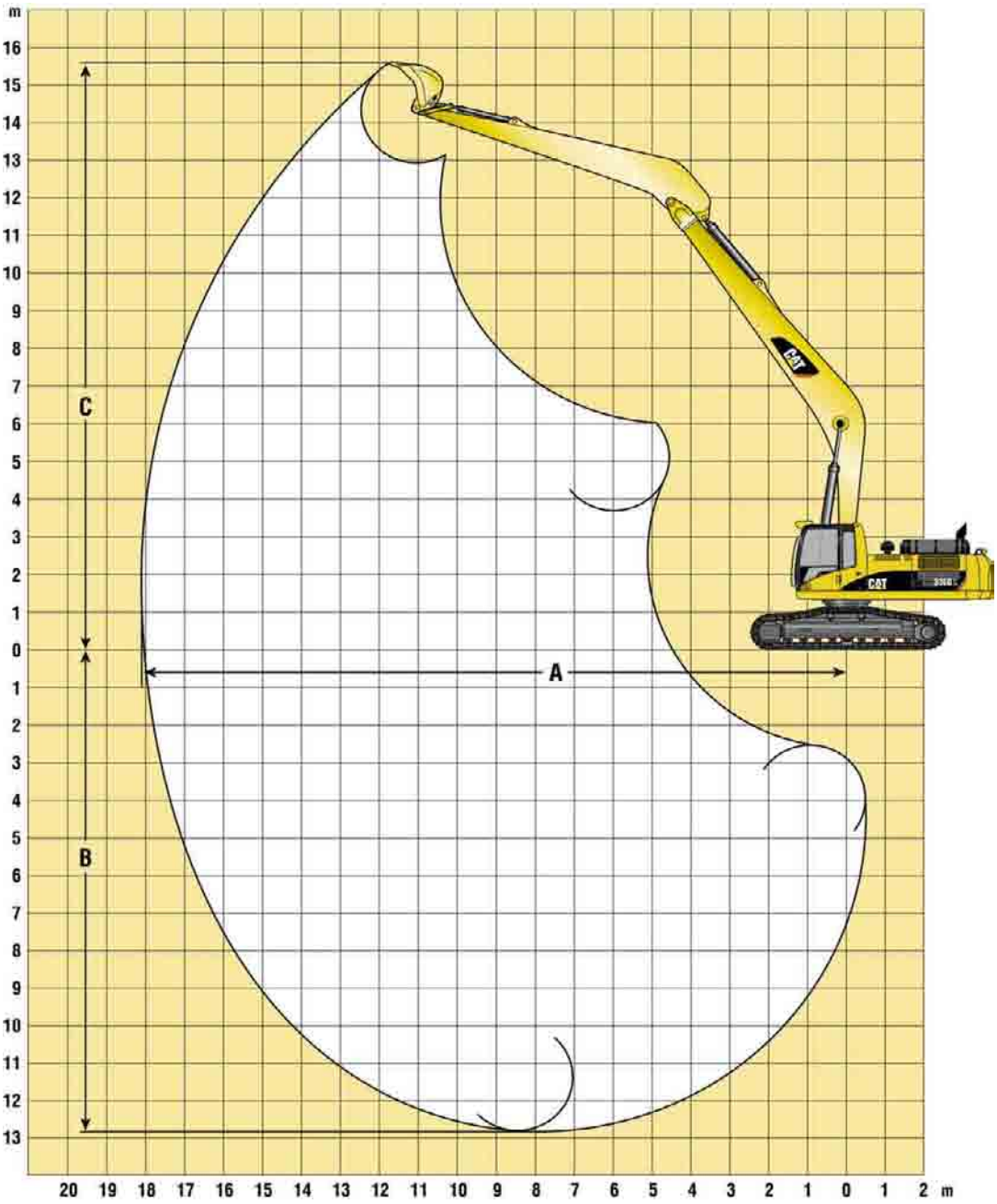
All dimensions and weights are approximate



		336D	385C	
Undercarriage		HDHW	LVG	LVG
Front Linkage		18 m	18 m	21.5 m
A Cab height				
without FOG	mm	3511	3760	3760
with FOG	mm	3681	3950	3950
B Boom height	mm	3595	5715	4280
C Overall length	mm	15310	16605	18780
D Shipping gauge	mm	2920	2750	2750
Working gauge	mm	2920	3510	3510
E Track length	mm	5020	6360	6360
F Length to centers of rollers	mm	4040	5120	5120
G Ground clearance	mm	720	890	890
H Tail swing radius	mm	3500	4590	4590
Boom length	mm	10660	10500	12500
Stick length	mm	7100	5500	9500
Linkage family		B1	HB	DB
Counterweight	kg	8450	14700	14700
Operating weight	kg	39680	88310	88490

Working Ranges – 336D

Long reach excavation front parts with heavy duty upper frame,
8450 kg counterweight, 700 mm triple grouser shoes.

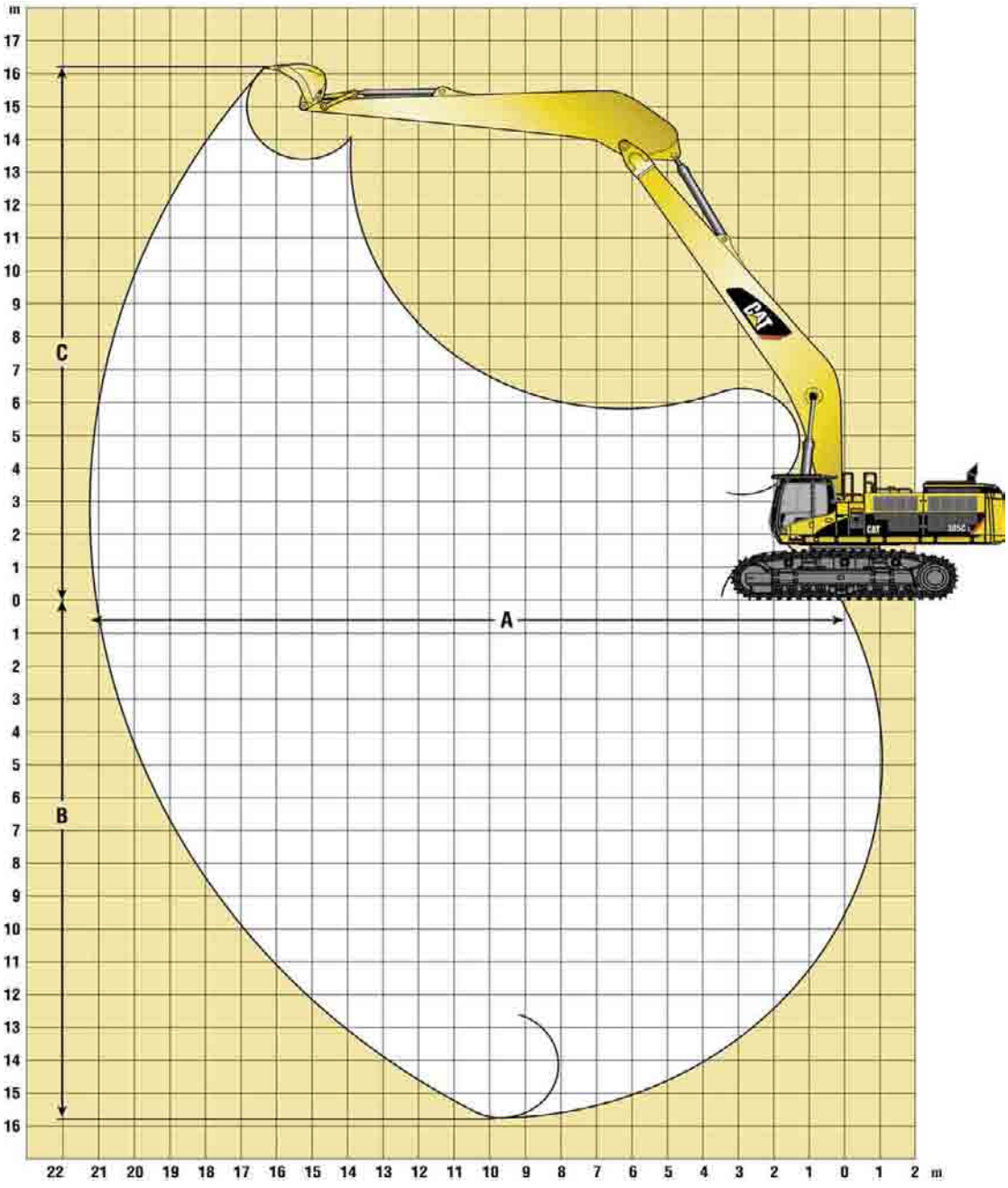


Undercarriage		**HDHW**
Front linkage		**18 m**
A Maximum reach	mm	18 045
B Maximum digging depth	mm	12 890
C Maximum cutting height	mm	15 580
Bucket tip radius	mm	1402
Bucket digging force (ISO 6015)	kN	124
Stick digging force (ISO 6015)	kN	99

Depending on the bucket used, the working range may change.

Working Ranges – 385C

Long reach excavation front parts with heavy duty upper frame,
14 700 kg counterweight, 750 mm triple grouser shoes.



Undercarriage		L VG	L VG
Front linkage		**18 m**	**21.5 m**
A Maximum reach	mm	17 950	21 310
B Maximum digging depth	mm	12 285	15 825
C Maximum cutting height	mm	15 400	16 015
Bucket tip radius	mm	1959	1658
Bucket digging force (ISO 6015)	kN	317	178
Stick digging force (ISO 6015)	kN	255	156

Depending on the bucket used, the working range may change.

Lift Capacities – 336D

Long reach excavation front parts with heavy duty upper frame, 8450 kg counterweight, 700 mm triple grouser shoes.
Heavy lift off. All weights are in kg.

Undercarriage – HDHW **Front Linkage – 18.6 m** **Bucket Weight/Capacity – 759 kg/1.05 m³**

	1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m		16.5 m				
																									m
13.5 m															*2390	*2390							*1500	*1500	13.96
12.0 m																	*2090	*2090					*1440	*1440	15.11
10.5 m																	*2700	*2700					*1410	*1410	16.00
9.0 m															*2940	*2940	*2760	*2760	*2350	*2350			*1410	*1410	16.70
7.5 m															*3100	*3100	*2860	*2860	*2670	2540			*1440	*1440	17.22
6.0 m													*3690	*3690	*3290	*3290	*2990	*2990	*2750	2450	*1790	*1790	*1480	*1480	17.58
4.5 m							*7180	*7180	*5650	*5650	*4680	*4680	*4010	*4010	*3520	*3520	*3140	2970	*2850	2340	*2340	1820	*1550	1540	17.80
3.0 m					*9190	*9190	*8410	*8410	*6390	*6390	*5160	*5160	*4340	*4340	*3740	3530	*3300	2800	*2950	2220	*2670	1750	*1650	1460	17.88
1.5 m					*5110	*5110	*9380	*9380	*7030	6910	*5600	5290	*4640	4150	*3960	3290	*3450	2630	*3050	2110	*2720	1670	*1780	1410	17.82
0 m			*2250	*2250	*4850	*4850	*9940	8610	*7490	6340	*5940	4880	*4890	3860	*4140	3080	*3570	2480	*3120	2000	2680	1610	*1940	1410	17.62
–1.5 m			*3550	*3350	*5530	*5530	*9610	8180	*7730	5960	*6150	4580	*5050	3630	*4260	2910	*3650	2360	3120	1910	*2590	1560	*2160	1440	17.27
–3.0 m	*4180	*4180	*4810	*4810	*6580	*6580	*10000	7990	*7760	5740	*6220	4390	*5120	3470	*4300	2790	3650	2270	3060	1860			*2440	1510	16.78
–4.5 m	*5330	*5330	*6110	*6110	*7860	*7860	*9640	7960	*7600	5650	*6150	4290	*5070	3380	*4250	2720	*3590	2220	*3020	1830			*2600	1650	16.11
–6.0 m	*6540	*6540	*7490	*7490	*9340	*9340	*9060	8040	*7240	5660	*5910	4270	*4890	3350	*4080	2700	*3400	2220					*2600	1860	15.26
–7.5 m			*8990	*8990	*10420	*10420	*8230	8220	*6670	5760	*5480	4320	*4540	3390	*3750	2740	*3030	2270					*2560	1860	14.17
–9.0 m			*10660	*10660	*8830	*8830	*7120	*7120	*5840	*5840	*4820	4460	*3950	3500	*3170	2850							*2420	*2420	12.79
–10.5 m					*6780	*6780	*5630	*5630	*4670	*4670	*3820	*3820	*3010	*3010											

Load Point Height Load Radius Over Front Load Radius Over Side Load at Maximum Reach

* Limited by hydraulic rather than tipping load.
The above loads are in compliance with hydraulic excavator lift capacity ratings standard ISO 10567, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all lifting accessories must be deducted from the above lifting capacities.

Lift Capacities – 385C

Long reach excavation front parts with heavy duty upper frame, 14 700 kg counterweight, 750 mm triple grouser shoes.

Heavy lift off. All weights are in kg.

Undercarriage – LVG **Front Linkage – 18 m** **Bucket Weight/Capacity – 2850 kg/2.0 m³**

	1.5 m		3.0 m		4.5 m		6.0 m		7.5m		9.0 m		10.5 m		12 m		13.5 m		15.0 m				m
12.0 m															*7590	*7590					*3490	*3490	14.91
10.5 m															*7650	*7650	*7030	*7030			*3350	*3350	15.81
9.0 m															*7940	*7940	*7400	*7400			*3280	*3280	16.49
7.5 m													*9370	*9370	*8390	*8390	*7660	*7660	*6620	6470	*3280	*3280	16.98
6.0 m											*11960	*11960	*11200	*11200	*8950	*8950	*8010	*8010	*7310	6350	*3330	*3330	17.30
4.5 m									*16620	*16620	*13280	*13280	*11090	*11090	*9550	*9550	*8410	7890	*7540	6170	*3450	*3450	17.46
3.0 m									*18450	*18450	*14500	*14500	*11920	*11920	*10130	9520	*8800	7550	*7770	5960	*3630	*3630	17.48
1.5 m									*19740	19070	*15470	14550	*12630	11390	*10620	9050	*9130	7220	*7950	5760	*3880	*3880	17.34
0 m									*20400	18160	*16090	13830	*13120	10850	*10980	8650	*9350	6950	*8020	5590	*4220	*4220	17.05
–1.5 m							*11890	*11890	*20480	17670	*16330	13360	*13350	10470	*11040	8160	*9410	6750	*7910	5470	*4680	4560	16.59
–3.0 m					*9510	*9510	*15980	*15980	*20040	17480	*16170	13120	*13270	10250	*11040	8190	*9210	6640	*7450	5460	*5290	4980	15.95
–4.5 m			*10720	*10720	*14200	*14200	*21200	*21200	*19120	17530	*15570	13070	*12810	10190	*10590	8150	*8640	6850			*6120	5630	15.12
–6.0 m			*15420	*15420	*19650	*19650	*21670	*21670	*17650	*17650	*14470	13210	*11890	10280	*9660	8260	*7320	6850					
–7.5 m			*20910	*20910	*22990	*22990	*18830	*18830	*15500	*15500	*12710	*12710	*10270	*10270	*7810	*7810							
–9.0 m					*17780	*17780	*14930	*14390	*12350	*12350	*9930	*9930	*7340	*7340									

Undercarriage – LVG **Front Linkage – 21.5 m** **Bucket Weight/Capacity – 1150 kg/1.45 m³**

	1.5 m		3.0 m		4.5 m		6.0 m		7.5m		9.0 m		10.5 m		12 m		13.5 m		15.0 m		16.5 m		18.0 m		19.5 m				m
13.5 m																√					*2580	*2580					*1970	*1970	18.25
12.0 m																					*3540	*3540					*1980	*1980	19.08
10.5 m																					*4300	*4300	*2800	*2800			*2010	*2010	19.74
9.0 m																			*5870	*5870	*5010	*5010	*3630	*3630			*2080	*2080	20.26
7.5 m																	*7180	*7180	*6500	*6500	*5740	*5740	*4360	*4360			*2180	*2180	20.65
6.0 m															*8440	*8440	*7490	*7490	*5720	*5720	*6080	*6080	*5070	*5070	*2940	*2940	*2300	*2300	20.91
4.5 m											*12190	*12190	*10300	*10300	*8890	*8890	*7810	*7810	*6950	*6950	*6240	6010	*5640	4870	*3500	*3500	*2470	*2470	21.05
3.0 m					*18170	*18170	*21390	*21390	*16290	*16290	*13100	*13100	*10910	*10910	*9330	*9330	*8120	*8120	*7170	6890	*6390	5630	*5730	4590	*3950	3710	*2670	*2670	21.07
1.5 m					*10420	*10420	*21090	*21090	*17370	*17370	*13850	*13850	*11450	*11450	*9710	9580	*8390	7800	*7360	6400	*6510	5260	*5810	4310	*4250	3510	*2930	*2930	20.98
0 m			*5480	*5480	*9290	*9290	*16720	*16720	*18040	17340	*14370	13490	*11840	10800	*10000	8780	*8800	7210	*7500	5950	*6800	4910	*5840	4050	*4340	3320	*3250	2900	20.77
–1.5 m	*5980	*5980	*6870	*6870	*9740	*9740	*15180	*15180	*18270	15960	*14630	12400	*12070	9950	*10170	8120	*8720	6700	*7570	5550	*6630	4610	*5820	3820	*4120	3150	*3650	2890	20.43
–3.0 m	*7300	*7300	*8320	*8320	*10780	*10780	*15260	*15260	*18100	15080	*14610	11630	*12090	9310	*10200	7600	*8730	6280	*7550	5230	*6580	4360	*5730	3630			*4150	2950	19.97
–4.5 m	*8690	*8690	*9810	*9810	*12110	*12110	*16120	*16120	*17570	14600	*14330	11150	*11910	6870	*10070	7230	*8610	5980	*7420	4980	*6240	41720	*5530	3500			*4440	3080	19.37
–6.0 m	*10110	*10110	*11350	*11350	*13620	*13620	*16710	14400	*13760	10890	*13760	10890	*11510	8610	*9750	6990	*8330	5760	*7150	4820	*6130	4060							
–7.5 m	*11560	*11560	*12940	*12940	*15290	*15290	*17440	*17440	*15510	14430	*12910	10830	*10860	8510	*9920	6890	*7860	5890	*6700	4760	*5650	4030							
–9.0 m	*13050		*14610	*14610	*16790	*16790	*16810	*16810	*13960	*13960	*11740	10930	*9930	8560	*8440	6910	*7160	5710	*6010	4800									
–10.5 m			*16330	*16330	*16990	*16990	*14190	*14190	*12000	*12000	*10200	*10200	*8670	*8670	*7340	7070	*6140	5860											
–12 m					*12570	*12570	*10990	*10990	*9550	*9550	*8820	*8820	*8990	*8990	*5820	*5820													
– 13.5 m							*7090	*7090	*6460	*6460	*5640	*5640	*4720	*4720															

336D and 385C LRE Long Reach Excavation

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 in photos may include additional equipment. See your Caterpillar dealer for available options.

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