



988

Wheel Loader

Technical Specifications

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

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988 Wheel Loader Specifications

Engine

Engine Model	Cat® C18	
Rated Speed	1,700 rpm	
Peak Power Speed	1,500 rpm	
Engine (ISO 14396:2002)	432 kW	580 hp
Gross (SAE J1995:2014)	439 kW	588 hp
Net Power (SAE J1349:2011)	401 kW	538 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,105 in ³
Peak Torque (1,200 rpm) (SAE J1995:2014)	2852 N·m	2,104 lbf·ft
Torque Rise	58%	

Three engine emission options are available:

1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.
 2. Meets Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
 3. Meets China Nonroad Stage IV emission standards.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan at minimum speed, air intake system, exhaust system, and alternator.

Transmission

Transmission Type	Cat planetary power shift	
Forward 1	6.5 km/h	4.0 mph
Forward 2	11.6 km/h	7.2 mph
Forward 3	20.4 km/h	12.7 mph
Forward 4	34.7 km/h	21.6 mph
Reverse 1	7.5 km/h	4.7 mph
Reverse 2	13.3 km/h	8.3 mph
Reverse 3	23.2 km/h	14.4 mph
Direct Drive Forward 1	Lock-up disabled	
Direct Drive Forward 2	12.5 km/h	7.8 mph
Direct Drive Forward 3	22.3 km/h	13.9 mph
Direct Drive Forward 4	39.3 km/h	24.4 mph
Direct Drive Reverse 1	8.0 km/h	5.0 mph
Direct Drive Reverse 2	14.3 km/h	8.9 mph
Direct Drive Reverse 3	25.5 km/h	15.8 mph

Operating Specifications

Operating Weight	51 062 kg	112,574 lb
Rated Payload – Quarry Face	11.3 tonnes	12.5 tons
Rated Payload – Loose Material	14.5 tonnes	16.0 tons
Bucket Capacity Range	4.7-13.0 m ³	6.2-17.0 yd ³
Cat Truck Match – Standard	770-772	
Cat Truck Match – High Lift	773-775	

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	EH – positive flow control, flow sharing	
Lift/Tilt System Pumps	Variable displacement piston	
Maximum Flow at 1,400-1,860 rpm	580 L/min	153 gal/min
Relief Valve Setting – Lift/Tilt	32 800 kPa	4,757 psi
Cylinders, Double Acting: Lift, Bore and Stroke	210 mm x 1050 mm	8.7 in x 41.3 in
Cylinders, Double Acting: Lift, Bore and Stroke	266 mm x 685 mm	8.7 in x 27 in
Pilot System	Variable displacement piston	
Relief Valve Setting	3800 kPa	551 psi

Hydraulic Cycle Time (1,400-1,860 rpm)

Rackback	4.5 seconds
Raise	8.0 seconds
Dump	2.2 seconds
Lower Float Down	3.5 seconds
Total Hydraulic Cycle Time (empty bucket)	18.2 seconds

Hydraulic System – Steering

Steering System – Circuit	Pilot, load sensing
Steering System – Pump	Piston, variable displacement
Maximum Flow @ × 1,400-1,600 rpm	270 L/min 71.3 gal/min
Relief Valve Setting – Steering	30,000 kPa 4,351 psi
Total Steering Angle	86°
Steering Cycle Time (high idle)	3.4 seconds
Steering Cycle Time (low idle)	5.6 seconds

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.8 kg of refrigerant which has a CO₂ equivalent of 2.574 metric tonnes.

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	13°

Brakes

Brakes	ISO 3450:2011
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Operator Cab

Rollover Protective Structure/ Falling Objects Protective Structure (ROPS/FOPS)	ROPS/FOPS meet ISO 3471:2008 and ISO 3449:2005 Level II standards
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Sound Performance – Tier 4 Final/Stage V

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	111 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	109 dB(A)**

Sound Performance – Tier 3/Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	110 dB(A)**

*For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”

**European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.

- The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

Service Refill Capacities

Fuel Tank	712 L	188.0 gal
Cooling System	120 L	31.7 gal
Coolant (validated by test cell fill quantities)	125 L	33.0 gal
Crankcase	60 L	15.9 gal
Diesel Exhaust Fluid Tank (for Tier 4 Final/Stage V only)	33 L	8.7 gal
Transmission	92 L	24.3 gal
Transmission (validated by test cell fill quantities)	110 L	29.0 gal
Differentials and Final Drives – Front	186 L	49.1 gal
Differentials and Final Drives – Rear	186 L	49.1 gal
Hydraulic System Factory Fill	475 L	125.5 gal
Hydraulic System (tank only)	240 L	63.4 gal

- All non-road Tier 4 Final/Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels** up to:
 - 20% biodiesel FAME (fatty acid methyl ester)*
 - 100% renewable diesel, HVO (hydrotreated 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.
- Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).**
- For pre-Tier 4 engines: 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 (hydrotreated 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.

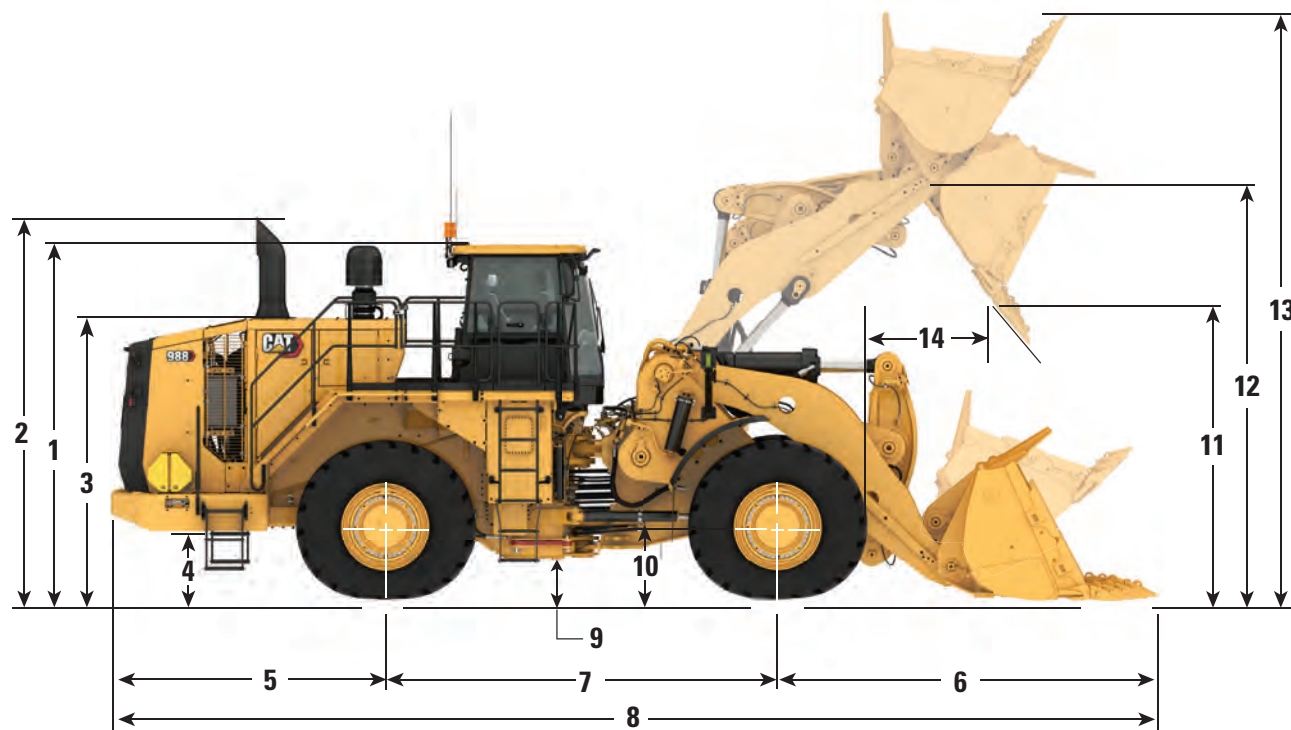
*For use of blends higher than 20% biodiesel, consult your Cat dealer.

**Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

988 Wheel Loader Specifications

Dimensions

All dimensions are approximate.



	Standard Lift		High Lift	
1 Ground to Top of ROPS	4202 mm	13.8 ft	4202 mm	13.8 ft
2 Ground to Top of Exhaust Stacks (Tier 4)	4521 mm	14.8 ft	4521 mm	14.8 ft
Ground to Top of Exhaust Stacks (LRC)	4199 mm	13.8 ft	4199 mm	13.8 ft
3 Ground to Top of Hood	3334 mm	10.9 ft	3334 mm	10.9 ft
4 Ground to Bumper Clearance	933 mm	3.1 ft	933 mm	3.1 ft
5 Rear Axle Centerline to Bumper	3187 mm	10.5 ft	3187 mm	10.5 ft
6 Front Axle Centerline to Bucket Tip	4254 mm	14.0 ft	4661 mm	15.3 ft
7 Wheel Base	4550 mm	14.9 ft	4550 mm	14.9 ft
8 Maximum Overall Length	11 991 mm	39.3 ft	12 398 mm	40.7 ft
9 Ground to Lower Hitch Clearance	568 mm	1.9 ft	568 mm	1.9 ft
10 Ground to Center of Axles	978 mm	3.2 ft	978 mm	3.2 ft
11 Clearance at Maximum Lift (45° Dump)	3641 mm	11.9 ft	4043 mm	13.3 ft
12 B-Pin Height at Maximum Lift	5485 mm	18.0 ft	5887 mm	19.3 ft
13 Maximum Overall Height – Bucket Raised	7455 mm	24.5 ft	7849 mm	25.8 ft
14 Reach at Maximum Lift (45° Dump)	1981 mm	6.5 ft	2062 mm	6.8 ft

Note: Specifications are calculated with 6.9 m³ (9.0 yd³) rock bucket equipped with Michelin XLDD1 35/65 R33 tires.

Bucket Capacity/Material Density Selection Guide

Standard Lift/High Lift

Rated Payload (Quarry Face) – 11.3 tonnes/12.5 tons

Material Density				Bucket Volume	
kg/m ³	lb/yd ³	tonnes/m ³	tons/yd ³	m ³	yd ³
1468-1614	2,500-2,750	1.47-1.61	1.25-1.38	7.6	10.00
1638-1801	2,778-3,056	1.64-1.80	1.39-1.53	6.9	9.00
1766-1942	3,001-3,300	1.77-1.94	1.50-1.65	6.4	8.33

Standard Lift/High Lift

Rated Payload (Loose Material) – 14.5 tonnes/16 tons

Material Density				Bucket Volume	
kg/m ³	lb/yd ³	tonnes/m ³	tons/yd ³	m ³	yd ³
1510-1667	2,560-2,816	1.51-1.67	1.28-1.41	9.6	12.5
1726-1905	2,909-3,200	1.73-1.90	1.45-1.60	8.4	11.0
1908-2105	3,200-3,520	1.91-2.11	1.60-1.76	7.6	10.0

Note: Rated Payload is the material weight in the bucket that the loader is designed to carry, excluding the weight of the bucket, GET, and wear material. Rated Payloads are published at 100%, even though Caterpillar does allow 110%. These values are given in terms of mass. There is no consideration to loose density weights of various materials since they are so diverse. Refer to the Large Wheel Loader Payload Policy.

988 Wheel Loader Specifications

Aggregate Package Operating Specifications – Standard Lift

For machines equipped with 35/65 R33 XLDD1 tires - see additional tables for other tire sizes.

988 Std Lift Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm					
Bucket Type		General Purpose			
Ground Engaging Tool		Adapters or BOCE			
Cutting Edge Type		Straight			
Bucket Part Number (Group Level)		638-8780	638-8770	634-0623	621-1500
Bucket Load At Rated Capacity	kg	11 340	11 340	11 340	11 340
	lb	25,000	25,000	25,000	25,000
Rated Capacity	m ³	9.6	8.4	7.6	6.9
	yd ³	12.5	11.0	10.0	9.0
Struck Capacity ISO	m ³	8.0	7.0	6.5	5.5
	yd ³	10.5	9.2	8.5	7.2
Heaped Capacity ISO	m ³	9.5	8.5	7.5	7.0
	yd ³	12.4	11.1	9.8	9.2
Bucket Width – Overall	mm	3987	3987	3987	3987
	ft	13.1	13.1	13.1	13.1
Clearance At 45° Dump (Tooth Tip) (A)	mm	—	—	—	—
	ft	—	—	—	—
Clearance At 45° Dump (Edge) (A)	mm	3647	3754	3819	3882
	ft	12.0	12.3	12.5	12.7
Reach At 45° Dump (Tooth Tip) (F)	mm	—	—	—	—
	ft	—	—	—	—
Reach At 45° Dump (Edge) (F)	mm	1900	1794	1722	1652
	ft	6.2	5.9	5.6	5.4
Horizontal Arm and Level Bucket Reach (Edge)	mm	3914	3764	3667	3573
	ft	12.8	12.3	12.0	11.7
Digging Depth (Segment)	mm	195	195	200	205
	in	7.7	7.7	7.9	8.1
Overall Length – Bucket Level Ground (E)	mm	11 958	11 808	11 715	11 624
	ft	39.2	38.7	38.4	38.1
Overall Height (C)	mm	7829	7688	7589	7486
	ft	25.7	25.2	24.9	24.6
Turning Circle – Corner SAE Carry	mm	17 401	17 313	17 261	17 212
	ft	57.1	56.8	56.6	56.5
Rackback Angle At SAE Carry	deg	50.0	50.0	50.0	50.1
Full Dump At Max Lift	deg	-49.8	-49.8	-49.8	-49.8
Tipping Load, Rigid Tires – Straight	kg	39 320	39 938	40 251	40 621
	lb	86,686	88,049	88,739	89,555
At Operating Weight (Articulated 35°)	kg	35 066	35 669	35 975	36 336
	lb	62,814	66,116	68,209	70,382
Tipping Load, Tire Squash – Straight	kg	36 841	37 489	37 828	38 221
	lb	81,219	82,649	83,397	84,262
At Operating Weight (Articulated 35°)	kg	31 258	31 903	32 247	32 639
	lb	68,911	70,334	71,092	71,956
Breakout Force SAE Rated	kg	39 750	43 204	45 673	48 330
	lb	87,633	95,248	100,691	106,550
Operating Weight (Notes A&B)	kg	54 641	54 223	53 996	53 743
	lb	120,462	119,540	119,040	118,482
Weight Distribution At SAE Carry Front	kg	28 665	27 942	27 552	27 122
	lb	63,196	61,601	60,742	59,794
Weight Distribution At SAE Carry Rear	kg	25 975	26 281	26 444	26 621
	lb	57,266	57,940	58,298	58,688
Loaded Machine Weight	kg	69 156	68 738	68 511	68 258
	lb	152,462	151,540	151,040	150,482
Weight Distribution At SAE Carry Front	kg	52 185	51 357	50 911	50 420
	lb	115,047	113,222	112,240	111,158
Weight Distribution At SAE Carry Rear	kg	16 971	17 381	17 599	17 837
	lb	37,415	38,318	38,800	39,324

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with ISO 14397-2:2007.

Full compliance to ISO 14397-1:2007.

988 Wheel Loader Specifications

Aggregate Package Operating Specifications – High Lift

For machines equipped with 35/65 R33 XLDD1 tires - see additional tables for other tire sizes.

988 Std Lift Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm					
Bucket Type		General Purpose			
Ground Engaging Tool		Adapters or BOCE			
Cutting Edge Type		Straight			
Bucket Part Number (Group Level)		638-8780	638-8770	634-0623	621-1500
Rated Capacity	m ³	9.6	8.4	7.6	6.9
	yd ³	12.5	11.0	10.0	9.0
Struck Capacity ISO	m ³	8.0	7.0	6.5	5.5
	yd ³	10.5	9.2	8.5	7.2
Heaped Capacity ISO	m ³	9.5	8.5	7.5	7.0
	yd ³	12.4	11.1	9.8	9.2
Bucket Width – Overall	mm	3987	3987	3987	3987
	ft	13.1	13.1	13.1	13.1
Clearance At 45° Dump (Tooth Tip) (A)	mm	—	—	—	—
	ft	—	—	—	—
Clearance At 45° Dump (Edge) (A)	mm	4041	4147	4212	4275
	ft	13.3	13.6	13.8	14.0
Reach At 45° Dump (Tooth Tip) (F)	mm	—	—	—	—
	ft	—	—	—	—
Reach At 45° Dump (Edge) (F)	mm	1988	1882	1810	1740
	ft	6.5	6.2	5.9	5.7
Horizontal Arm and Level Bucket Reach (Edge)	mm	4253	4103	4006	3912
	ft	14.0	13.5	13.1	12.8
Digging Depth (Segment)	mm	214	214	219	224
	in	8.4	8.4	8.6	8.8
Overall Length – Bucket Level Ground (E)	mm	12 365	12 215	12 121	12 030
	ft	40.6	40.1	39.8	39.5
Overall Height (C)	mm	8222	8081	7982	7880
	ft	27.0	26.5	26.2	25.9
Turning Circle – Corner SAE Carry	mm	17 736	17 647	17 595	17 545
	ft	10.3	10.1	9.9	9.7
Rackback Angle At SAE Carry	deg	52.8	52.8	52.8	52.9
Full Dump At Max Lift	deg	-50.1	-50.1	-50.1	-50.1
Tipping Load, Rigid Tires – Straight	kg	39 797	40 367	40 652	40 992
	lb	87,737	88,995	89,622	90,371
At Operating Weight (Articulated 35°)	kg	35 316	35 874	36 155	36 489
	lb	63,634	66,743	68,706	70,741
Tipping Load, Tire Squash – Straight	kg	37 448	38 053	38 366	38 729
	lb	82,559	83,892	84,581	85,384
At Operating Weight (Articulated 35°)	kg	31 483	32 090	32 411	32 778
	lb	65,817	68,606	70,374	72,202
Breakout Force SAE Rated	kg	36 548	39 758	42 053	44 524
	lb	80,574	87,651	92,710	98,158
Operating Weight (Notes A&B)	kg	57 550	57 132	56 905	56 652
	lb	126,876	125,954	125,454	124,896
Weight Distribution At SAE Carry Front	kg	28 638	27 884	27 477	27 027
	lb	63,137	61,473	60,576	59,584
Weight Distribution At SAE Carry Rear	kg	28 912	29 248	29 428	29 625
	lb	63,739	64,481	64,878	65,312
Loaded Machine Weight	kg	72 065	71 647	71 420	71 167
	lb	158,876	157,954	157,454	156,896
Weight Distribution At SAE Carry Front	kg	53 339	52 493	52 037	51 534
	lb	117,591	115,726	114,723	113,613
Weight Distribution At SAE Carry Rear	kg	18 726	19 154	19 383	19 633
	lb	41,285	42,228	42,731	43,283

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with ISO 14397-2:2007.

Full compliance to ISO 14397-1:2007.

988 Wheel Loader Specifications

Operating Specifications – Standard Lift

For machines equipped with 35/65 R33 XLDD1 tires - see additional tables for other tire sizes.

		988 Std Lift Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm					
Bucket Type		General Purpose		Rock		HD Rock	
Ground Engaging Tool		Adapters or BOCE		K130	K130	K130	K130
Cutting Edge Type		Straight	Straight	Spade	Spade	Spade	Spade
Bucket Part Number (Group Level)		634-0623	621-1500	615-5051	620-8133	620-8132	628-3419
Rated Capacity	m ³ yd ³	7.6 10.0	6.9 9.0	7.6 10.0	6.9 9.0	6.4 8.33	6.3 8.33
Struck Capacity ISO	m ³ yd ³	6.5 8.5	5.5 7.2	6.5 8.5	5.5 7.2	5 6.5	5 6.5
Heaped Capacity ISO	m ³ yd ³	7.5 9.8	7 9.2	7.5 9.8	7 9.2	6.5 8.5	6.5 8.5
Bucket Width – Overall	mm ft	3987 13.1	3987 13.1	4020 13.2	4020 13.2	4020 13.2	4080 13.4
Clearance At 45° Dump (Tooth Tip) (A)	mm ft	— —	— —	3394 11.1	3471 11.4	3527 11.6	3505 11.5
Clearance At 45° Dump (Edge) (A)	mm ft	3819 12.5	3882 12.7	3603 11.8	3681 12.1	3736 12.3	3723 12.2
Reach At 45° Dump (Tooth Tip) (F)	mm ft	— —	— —	2128 7.0	2050 6.7	1995 6.5	1997 6.6
Reach At 45° Dump (Edge) (F)	mm ft	1722 5.6	1652 5.4	1936 6.4	1858 6.1	1803 5.9	1816 6.0
Horizontal Arm and Level Bucket Reach (Edge)	mm ft	3667 12.0	3573 11.7	3971 13.0	3861 12.7	3783 12.4	3801 12.5
Digging Depth (Segment)	mm in	200 7.9	205 8.1	201 7.9	201 7.9	201 7.9	201 7.9
Overall Length – Bucket Level Ground (E)	mm ft	11 715 38.4	11 624 38.1	12 303 40.4	12 193 40.0	12 115 39.7	12 131 39.8
Overall Height (C)	mm ft	7589 24.9	7486 24.6	7559 24.8	7457 24.5	7383 24.2	7383 24.2
Turning Circle – Corner SAE Carry	mm ft	17 261 56.6	17 212 56.5	17 326 56.8	17 262 56.6	17 217 56.5	17 236 56.5
Rackback Angle At SAE Carry	degrees	50.0	50.1	50.0	50.0	50.0	50.0
Full Dump At Max Lift	degrees	-49.8	-49.8	-49.8	-49.8	-49.8	-49.8
Tipping Load, Rigid Tires – Straight	kg lb	36 213 79,835	36 574 80,632	35 289 77,799	35 756 78,828	35 977 79,315	34 861 76,855
At Operating Weight (Articulated 35°)	kg lb	32 452 71,543	32 805 72,323	31 541 69,536	32 000 70,548	32 213 71,018	31 100 68,564
Tipping Load, Tire Squash – Straight	kg lb	34 036 75,037	34 416 75,875	33 134 73,049	33 625 74,129	33 857 74,643	32 752 72,205
At Operating Weight (Articulated 35°)	kg lb	29 170 64,309	29 549 65,144	28 286 62,360	28 776 63,441	29 007 63,949	27 907 61,525
Breakout Force SAE Rated	kg lb	45 673 100,691	48 330 106,550	38 726 85,377	41 108 90,627	42 871 94,515	42 038 92,679
Operating Weight (Notes A&B)	kg lb	52 196 115,073	51 943 114,516	52 778 116,356	52 441 115,613	52 310 115,325	53 294 117,494
Weight Distribution At SAE Carry Front	kg lb	28 375 62,555	27 944 61,607	29 464 64,958	28 877 63,663	28 646 63,154	30 279 66,753
Weight Distribution At SAE Carry Rear	kg lb	23 822 52,518	23 999 52,909	23 314 51,398	23 564 51,950	23 664 52,171	23 016 50,741
Loaded Machine Weight	kg lb	63 536 140,074	63 283 139,516	64 118 141,357	63 781 140,614	63 650 140,325	64 634 142,494
Weight Distribution At SAE Carry Front	kg lb	46 630 102,800	46 152 101,747	47 751 105,273	47 106 103,850	46 836 103,256	48 481 106,881
Weight Distribution At SAE Carry Rear	kg lb	16 907 37,273	17 132 37,769	16 368 36,084	16 676 36,764	16 814 37,069	16 154 35,613

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with ISO 14397-2:2007.

Full compliance to ISO 14397-1:2007.

988 Wheel Loader Specifications

Operating Specifications – High Lift

For machines equipped with 35/65 R33 XLDD1 tires - see additional tables for other tire sizes.

		988 Std Lift Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm					
Bucket Type		General Purpose		Rock		HD Rock	
Ground Engaging Tool		Adapters or BOCE		K130		K130	
Cutting Edge Type		Straight		Spade		Spade	
Bucket Part Number (Group Level)		634-0623	621-1500	615-5051	620-8133	620-8132	628-3419
Rated Capacity	m ³	7.6	6.9	7.6	6.9	6.4	6.3
	yd ³	10.0	9.0	10.0	9.0	8.33	8.33
Struck Capacity ISO	m ³	6.5	5.5	6.5	5.5	5.0	5.0
	yd ³	8.5	7.2	8.5	7.2	6.5	6.5
Heaped Capacity ISO	m ³	7.5	7.0	7.5	7.0	6.5	6.5
	yd ³	9.8	9.2	9.8	9.2	8.5	8.5
Bucket Width – Overall	mm	3987	3987	4020	4020	4020	4080
	ft	13.1	13.1	13.2	13.2	13.2	13.4
Clearance At 45° Dump (Tooth Tip) (A)	mm	—	—	3787	3865	3920	3899
	ft	—	—	12.4	12.7	12.9	12.8
Clearance At 45° Dump (Edge) (A)	mm	4212	4275	3997	4074	4130	4117
	ft	13.8	14.0	13.1	13.4	13.5	13.5
Reach At 45° Dump (Tooth Tip) (F)	mm	—	—	2217	2139	2084	2085
	ft	—	—	7.3	7.0	6.8	6.8
Reach At 45° Dump (Edge) (F)	mm	1810	1740	2024	1947	1892	1904
	ft	5.9	5.7	6.6	6.4	6.2	6.2
Horizontal Arm and Level Bucket Reach (Edge)	mm	4006	3912	4310	4200	4122	4140
	ft	13.1	12.8	14.1	13.8	13.5	13.6
Digging Depth (Segment)	mm	219	224	220	220	220	220
	in	8.6	8.8	8.7	8.7	8.7	8.7
Overall Length – Bucket Level Ground (E)	mm	12 121	12 030	12 710	12 600	12 522	12 538
	ft	39.8	39.5	41.7	41.3	41.1	41.1
Overall Height (C)	mm	7982	7880	7952	7850	7776	7776
	ft	26.2	25.9	26.1	25.8	25.5	25.5
Turning Circle – Corner SAE Carry	mm	17 595	17 545	17 663	17 598	17 553	17 573
	ft	57.7	57.6	57.9	57.7	57.6	57.7
Rackback Angle At SAE Carry	degrees	52.8	52.9	52.9	52.9	52.9	52.9
Full Dump At Max Lift	degrees	-50.1	-50.1	-50.1	-50.1	-50.1	-50.1
Tipping Load, Rigid Tires – Straight	kg	34 130	34 460	33 248	33 679	33 875	32 772
	lb	75,243	75,971	73,300	74,248	74,681	72,251
At Operating Weight (Articulated 35°)	kg	30 435	30 760	29 566	29 991	30 182	29 082
	lb	67,099	67,815	65,181	66,118	66,540	64,114
Tipping Load, Tire Squash – Straight	kg	32 230	32 579	31 365	31 818	32 027	30 933
	lb	71,055	71,824	69,148	70,147	70,607	68,195
At Operating Weight (Articulated 35°)	kg	27 426	27 777	26 577	27 035	27 244	26 155
	lb	60,464	61,238	58,592	59,602	60,063	57,662
Lift Capacity – Bucket Level Ground	kg	31 921	32 750	29 588	30 520	31 104	30 216
	lb	60,464	61,239	58,592	59,601	60,062	57,661
Breakout Force SAE Rated	kg	42 053	44 524	35 613	37 829	39 463	38 661
	lb	92,710	98,158	78,513	83,398	87,002	85,233
Operating Weight (Notes A&B)	kg	53 668	53 415	54 250	53 913	53 782	54 766
	lb	118,318	117,761	119,602	118,859	118,570	120,739
Weight Distribution At SAE Carry Front	kg	28 921	28 471	30 057	29 444	29 204	30 922
	lb	63,761	62,768	66,264	64,913	64,383	68,172
Weight Distribution At SAE Carry Rear	kg	24 747	24 944	24 193	24 469	24 579	23 844
	lb	54,558	54,993	53,337	53,945	54,187	52,567
Loaded Machine Weight	kg	65 008	64 755	65 590	65 253	65 122	66 106
	lb	143,319	142,761	144,602	143,859	143,570	145,740
Weight Distribution at SAE Carry Front	kg	48 120	47 628	49 288	48 625	48 350	50 082
	lb	106,087	105,002	108,662	107,199	106,594	110,411
Weight Distribution at SAE Carry Rear	kg	16 888	17 127	16 302	16 629	16 772	16 025
	lb	37,232	37,759	35,940	36,660	36,976	35,329

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Measured 100 mm (4") behind tip of cutting edge with bucket hinge pin as pivot point in accordance with ISO 14397-2:2007.

Full compliance to ISO 14397-1:2007.

988 Wheel Loader Standard and Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ELECTRICAL			OPERATOR ENVIRONMENT (CONTINUED)		
Alarm, backup	✓		Rimpull control system (RCS)	✓	
Alternator, single 150 amp	✓		Seat, deluxe	✓	
Batteries, dry	✓		Seat, premium plus containing forced air heating and cooling, 2-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness, dynamic end dampening and leather finish		✓
Converter, 10/15 amp, 24V to 12V	✓		Seat belt minder	✓	
Hazardous voltage lamp	✓		Seat belt, retractable, 76 mm (3 in) wide	✓	
Lighting system (LED work lights, access and service platform lighting)	✓		Steering and Transmission Integrated Control (STIC™) system	✓	
Lighting system underhood service lighting		✓	UV glass	✓	
Starting and charging system, 24V	✓		Vital Information Management System (VIMS™) with graphical information display: external data port, customizable operator profiles, cycle timer, integrated payload control system	✓	
Starter emergency start receptacle	✓		Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	✓	
Starter lockout in bumper	✓		Window pull-down visor		✓
Transmission lockout in bumper	✓		Operator presence	✓	
OPERATOR ENVIRONMENT			Slope indication	✓	
Air conditioner	✓		POWERTRAIN		
Cat Vision, rear-vision camera system	✓		Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	✓	
Cat Production Measurement ready	✓		Antifreeze -50°C (-58°F)		✓
Cat Production Measurement		✓	Automatic retarding controls	✓	
Cat Detect, object detection system		✓	Brakes, oil-cooled, multi-disc, service/secondary	✓	
Cab, sound suppressed and pressurized, integrated rollover protective structure/falling objects protective structure (ROPS/FOPS), radio ready for entertainment, includes antenna, speakers and converter (12-volt 5-amp) and power port	✓		Case drain screens	✓	
Cab precleaner		✓	Crankcase guard		✓
Configurable external seat belt beacon indicator		✓	Electro hydraulic parking brake	✓	
Controls, lift and tilt function	✓		Engine brake		✓
Economy mode	✓		Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled	✓	
3rd function valve controls		✓	Engine oil change system, high speed, Wiggins		✓
Graphical information display, displays real time operating information, performs calibrations, and customizes operator settings	✓		Ground-level engine shutoff	✓	
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, powertrain oil temperature	✓		High ambient cooling – software		✓
Heater, defroster	✓		Turbine precleaner, engine air intake	✓	
Horn, electric	✓		Turbine precleaner, engine air intake dual stage	✓	
LED warning strobe		✓	Radiator, aluminum modular radiator (AMR)	✓	
Light, cab, dome	✓		Starting aid, ether, automatic	✓	
Lights, directional	✓		Throttle lock, electronic	✓	
Lunchbox, beverage holders	✓		Torque converter, impeller clutch (ICTC) with lock up clutch (LUC), rimpull control system	✓	
Machine overload protection	✓		Transmission, planetary power shift, 4F/3R electronic control	✓	
Mirrors, rearview (externally mounted)	✓		Manual switch and automatic fuel priming	✓	
Mirrors, handrail mounted		✓			
Mirrors, heated		✓			
Radio, AM/FM/CD/MP3 Bluetooth®	✓				
Radio, AM/FM/CD/MP3 Bluetooth with Satellite Sirius XM		✓			
Radio, CB ready	✓				

988 Wheel Loader Standard and Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ADDITIONAL EQUIPMENT			ADDITIONAL EQUIPMENT (CONTINUED)		
Operator assist ready	✓		Hydraulic, steering and brake filtration/ screening system	✓	
Operator assist, tire slip prevention, auto set tires, and lift stall prevention		✓	Additional counterweight		✓
Operator coaching		✓	Hydraulically driven demand fan	✓	
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines		✓	Oil sampling valves	✓	
Base machine price includes a rim allowance	✓		Rear access to cab and service platform	✓	
Cat Clean Emission Module (CEM)	✓		Steering, load sensing	✓	
Couplings, Cat O-ring face seals	✓		Tire pressure monitoring system		✓
Doors, service access (locking)	✓		Toe kicks	✓	
Ecology drains for engine, radiator, hydraulic tank	✓		Vandalism protection caplocks	✓	
Fuel tank, 712L (188 gal)	✓		Wheel chocks		✓
Fast fill fuel system (Shaw-Aero)		✓	OTHER OPTIONAL CONFIGURATIONS		
Front and rear roading fenders		✓	Aggregate handler		✓
Hitch, drawbar with pin	✓		Load and carry		✓
Hoses, Cat XT™	✓		Millyard		✓
			Steel mill		✓
			Block handler		✓

988 Environmental Declaration

The following information applies to the machine at the time of final manufacture as configured for sale in the regions covered in this document. The content of this declaration is valid as of the date issued; however, content related to machine features and specifications are subject to change without notice. For additional information, please see the machine's Operation and Maintenance Manual.

For more information on sustainability in action and our progress, please visit <https://www.caterpillar.com/en/company/sustainability>.

Engine

- The Cat® C18 engine meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.
- Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:
 - ✓ 20% 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.

**Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.*

Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.8 kg (3.9 lb) of refrigerant which has a CO₂ equivalent of 2.574 metric tonnes (2.837 tons).

Paint

- Based on best available knowledge, the maximum allowable concentration, measured in parts per million (PPM), of the following heavy metals in paint are:
 - Barium < 0.01%
 - Cadmium < 0.01%
 - Chromium < 0.01%
 - Lead < 0.01%

Sound Performance

Operator Sound Level (ISO 6396:2008) 72 dB(A)

Machine Sound Level (ISO 6395:2008) 109 dB(A)*

- The measurements listed above were conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.
- The measurements listed above only refer to EU Stage V. Refer to p. 3 for the EPA Tier 3 equivalent.

* For machines in European Union countries and in countries that adopt the European Union Directive 2000/14/EC as amended by 2005/88/EC.

Oils and Fluids

- Caterpillar factory fills with ethylene glycol coolants. Cat Diesel Engine Antifreeze/Coolant (DEAC) and Cat Extended Life Coolant (ELC) can be recycled. Consult your Cat dealer for more information.
- Cat Bio HYDO Advanced is an EU Ecolabel approved biodegradable hydraulic oil.
- Additional fluids are likely to be present, please consult the Operations and Maintenance Manual or the Application and Installation guide for complete fluid recommendations and maintenance intervals.

Features and Technology

- The following features and technology may contribute to fuel savings and/or carbon reduction. Features may vary. Consult your Cat dealer for details.
 - Economy mode helps reduce fuel consumption
 - Increased hydraulic speed and faster cycle times for decreased idle, decreased fuel burn, and increased efficiency
 - Reduce fuel burn while idling with engine idle shutdown
 - Boost productivity with optional technologies like operator coaching and new operator assist features, including tire slip prevention and auto set tires

Recycling

- The materials included in machines are categorized as below with approximate weight percentage. Because of variations of product configurations, the following values in the table may vary.

Material Type	Weight Percentage
Steel	73.32%
Iron	3.21%
Nonferrous Metal	1.39%
Mixed Metal	0.00%
Mixed-Metal and Nonmetal	4.59%
Plastic	0.13%
Rubber	0.12%
Mixed Nonmetallic	0.00%
Fluid	0.25%
Other	2.35%
Uncategorized	14.64%
Total	100%

- A machine with higher recyclability rate will ensure more efficient usage of valuable natural resources and enhance end-of-life value of the product. According to ISO 16714 (Earthmoving machinery – Recyclability and recoverability – Terminology and calculation method), recyclability rate is defined as percentage by mass (mass fraction in percent) of the new machine potentially able to be recycled, reused, or both.

All parts in the bill of material are first evaluated by component type based on a list of components defined by the ISO 16714 and Japan CEMA (Construction Equipment Manufacturers Association) standards. Remaining parts are further evaluated for recyclability based on material type.

Because of variations of product configurations, the following value in the table may vary.

Recyclability – 96%



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Block Handler

Block handler applications demand the additional performance, productivity, and safety that Cat® wheel loaders deliver.

Proven Reliability

- Cat C18 engine is built and tested to meet your most demanding applications.
- Cat torque converter with lock-up clutch helps reduce torque converter losses and lowers system heat.
- Maximum responsiveness with Steering and Transmission Integrated Control (STIC™).
- Moves more material efficiently with improved power and control.
- Durable construction withstands the toughest loading conditions and multiple lifecycles.

Durability

- Word-class transmission for long life and consistent, smooth shifting; specifically designed for mining applications.
- Advanced productivity electronic control strategy (APECS) transmission controls for optimal momentum on grades.
- Positive flow control (PFC) hydraulic system helps increase efficiency and responsiveness with consistent performance.
- Advanced filtration system for extended performance and reliability of the hydraulic system.
- Impeller clutch torque converter (ICTC) helps minimize tire spin by allowing torque to adjust to underfoot conditions.

Achieve Greater Productivity

- Improved visibility over the top of the linkage.
- Operators can now check tire pressure during operation with any change sending a fault code to VisionLink®, preventing premature tire failure.
- Convenient, responsive, electro-hydraulic controls help increase operator confidence.

Superior Fuel Efficiency

- Economy mode helps optimize engine speed control for reduced fuel consumption no matter if operating in manual throttle or throttle lock.
- Flow sharing hydraulics provide full flow at reduced engine rpm.
- Fully integrated electronic engine controls help make your fuel go farther.
- Engine idle shutdown for less fuel used while idling.
- Increased hydraulic speed and fast cycle times help decrease idle and fuel burn with optimal efficiency.

Increase Productivity and Efficiency with Integrated Technologies

- Cat Technologies developed to monitor, manage, and enhance your job site operations.
- Cat Detect enhances awareness of the environment around working equipment and provides alerts to help keep people and assets safe on the job site.
- Product Link™ wirelessly connects you to your equipment, giving you access to essential information you need to know to run your business.
- Gain valuable insight into how your machine or fleet is performing.
- Optional advanced productivity plan provides comprehensive actionable information to help you manage and improve the productivity and profitability of your operations.

Designed for Block Handling

- Delivers stability and durability with an optimized counterweight for block handling applications.
- A high rimpull powertrain features a torque converter and transmission specially designed for this application to maximize rimpull.
- An additional hydraulic valve with the quick coupler allows the operator to switch work tools and immediately lock the work tool during load and carry applications.
- Purpose-built tilt and lift cylinders on the linkage help improve load control and ensure safe and long lasting operation.
- Ride control acts as a shock absorber, providing the operator with a smoother ride over rough terrain.

988 Block Handler Specifications

Engine

Engine Model	Cat® C18	
Rated Speed	1,700 rpm	
Peak Power Speed	1,500 rpm	
Engine (ISO 14396:2002)	432 kW	580 hp
Gross (SAE J1995:2014)	439 kW	588 hp
Net Power (SAE J1349:2011)	403 kW	541 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,105 in³
Peak Torque @ 1,200 rpm	2852 N·m	2,104 lbf-ft
Torque Rise	58%	

Three engine emission options are available:

1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.
 2. Meets Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
 3. Meets China Nonroad Stage IV emission standards.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan at minimum speed, air intake system, exhaust system, and alternator.

Operating Specifications

Operating Weight	61 508 kg	135,602 lb
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Transmission

Transmission Type	Cat planetary power shift	
Forward 1	5.8 km/h	3.6 mph
Forward 2	10.3 km/h	4.5 mph
Forward 3	18.3 km/h	11.4 mph
Forward 4	30.5 km/h	19 mph
Reverse 1	6.6 km/h	4.1 mph
Reverse 2	11.8 km/h	7.3 mph
Reverse 3	20.8 km/h	13 mph
Direct Drive Forward 1	Lock-up disabled	
Direct Drive Forward 2	10.8 km/h	6.7 mph
Direct Drive Forward 3	19.2 km/h	11.9 mph
Direct Drive Forward 4	34 km/h	21 mph
Direct Drive Reverse 1	6.9 km/h	4.3 mph
Direct Drive Reverse 2	12.4 km/h	7.7 mph
Direct Drive Reverse 3	22 km/h	13.7 mph

- Travel speeds based on 35/65-R33 tire.

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	Pilot operated – EH control, flow sharing	
Lift/Tilt System	Variable displacement piston	
Maximum Flow at 1,400-1,860 rpm	580 L/min	153 gal/min
Relief Valve Setting – Lift/Tilt	32 800 kPa	4,757 psi
Cylinders, Double Acting: Lift, Bore and Stroke	235 mm × 976 mm	9.3 in × 38.4 in
Cylinders, Double Acting: Tilt, Bore and Stroke	291 mm × 671 mm	11.5 in × 26.4 in
Pilot System	Variable displacement piston	
Maximum Flow @ 1,700 rpm	52 L/min	13.7 gal/min
Relief Valve Setting	3800 kPa	551 psi

Hydraulic Cycle Time

Rack back	4.5 Seconds
Raise	8.0 Seconds
Dump	2.2 Seconds
Lower Float Down	3.5 Seconds
Total Hydraulic Cycle Time (empty bucket)	18.2 Seconds

Hydraulic System – Steering

Steering System – Circuit	Pilot, load sensing	
Steering System – Pump	Piston, variable displacement	
Maximum Flow	280 L/min	74 gal/min
Relief Valve Setting – Steering	32 000 kPa	4,641 psi
Total Steering Angle	86°	
Steering Cycle Time (high idle)	3.4 sec	
Steering Cycle Time (low idle)	5.6 sec	

Service Refill Capacities

Fuel Tank	712 L	188.1 gal
Cooling System	120 L	31.7 gal
Crankcase	60 L	15.9 gal
Diesel Exhaust Fluid Tank	33 L	8.7 gal
Transmission	92 L	24.3 gal
Differentials and Final Drives – Front	186 L	49.1 gal
Differentials and Final Drives – Rear	186 L	49.1 gal
Hydraulic System Factory Fill	475 L	125.5 gal
Hydraulic System (tank only)	240 L	63.4 gal

- All non-road Tier 4 Final/Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels** up to:
 - 20% biodiesel FAME (fatty acid methyl ester)*
 - 100% renewable diesel, HVO (hydrotreated 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.

- Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).**
- For pre-Tier 4 engines: 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 (hydrotreated 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.

**Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	13°

Brakes

Brakes	ISO 3450:2011
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Sound Performance – Tier 4 Final/Stage V

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	111 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	109 dB(A)**

Sound Performance – Tier 3/Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	110 dB(A)**

*For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”

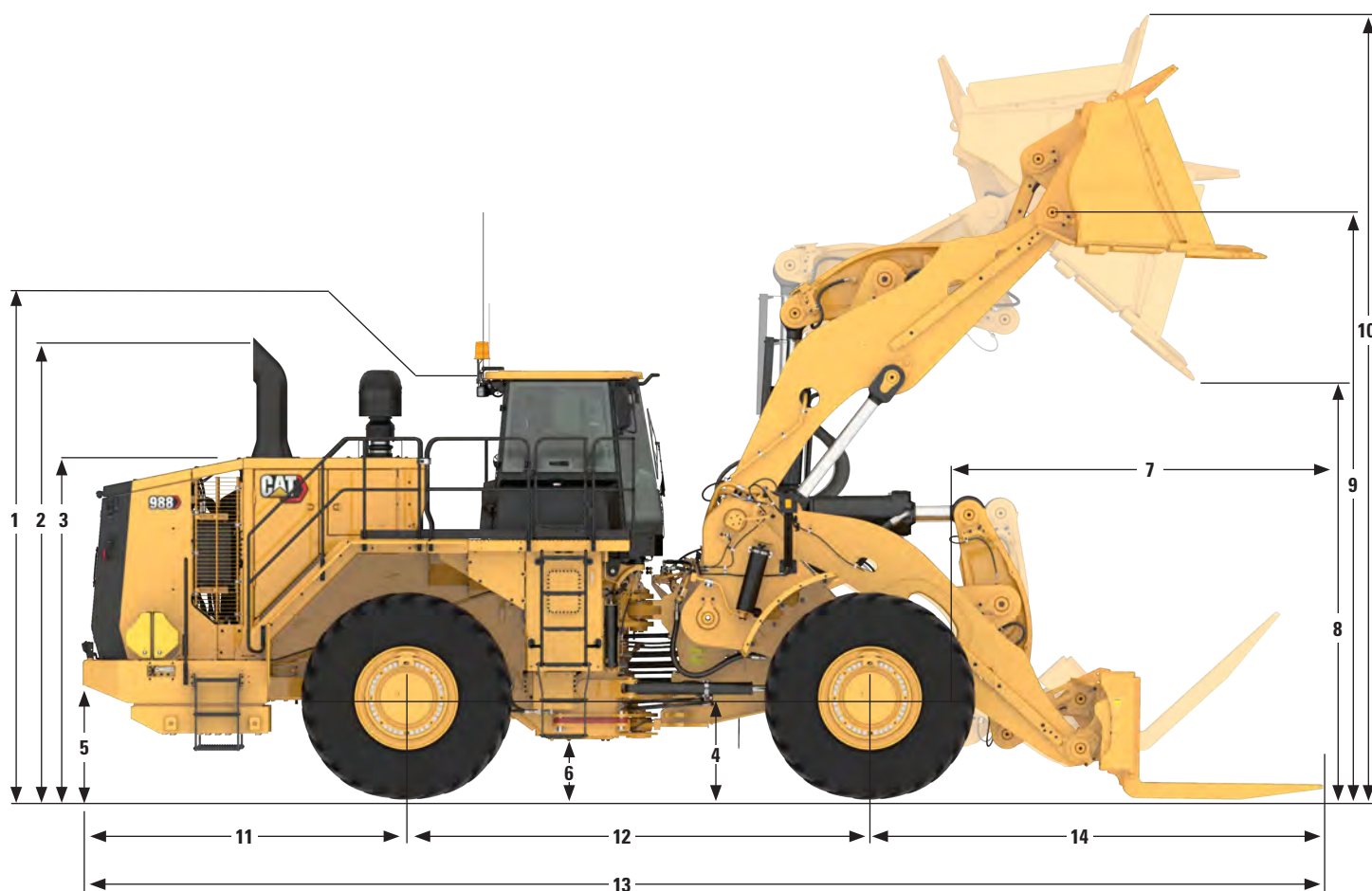
**European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.

- The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

988 Block Handler Specifications

Dimensions

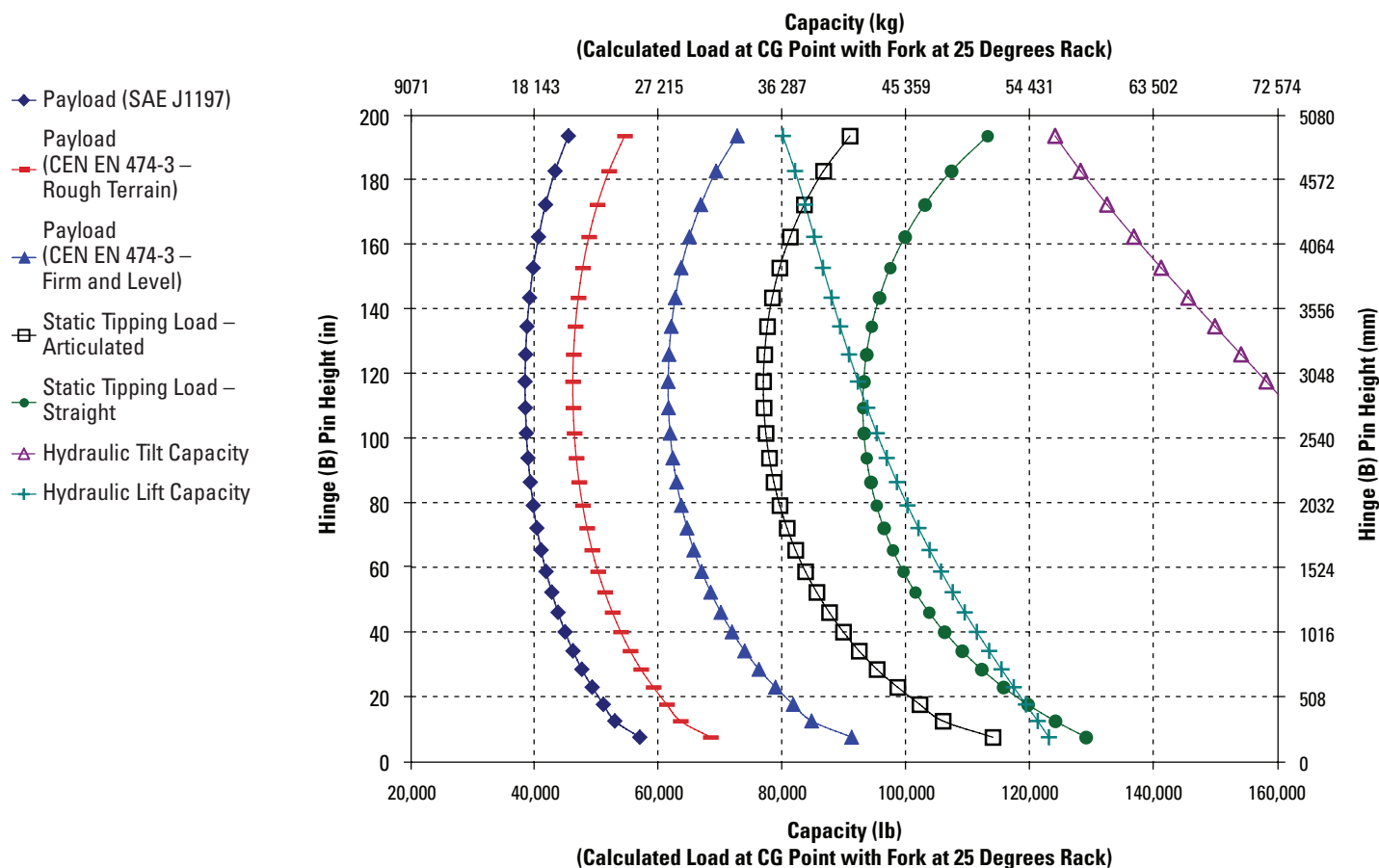
All dimensions are approximate.



	Quick Coupler and 6.9 m ³ (9.0 yd ³) Bucket		Quick Coupler and Fork	
1 Ground to Top of ROPS	4187 mm	13.7 ft	4214 mm	13.8 ft
2 Ground to Top of Exhaust Stacks	4498 mm	14.8 ft	4221 mm	13.8 ft
3 Ground to Top of Hood	3334 mm	10.9 ft	3334 mm	10.9 ft
4 Ground to Center of Front Axle	978 mm	3.2 ft	978 mm	3.2 ft
5 Ground to Bumper Clearance	933 mm	3.1 ft	933 mm	3.1 ft
6 Ground to Lower Hitch Clearance	568 mm	1.9 ft	568 mm	1.9 ft
7 Reach at Maximum Lift	2765 mm	9.1 ft	—	—
8 Clearance at Maximum Lift	3449 mm	11.3 ft	—	—
9 B-Pin Height at Maximum Lift	4918 mm	16.1 ft	4918 mm	16.1 ft
10 Maximum Overall Height, Bucket Raised	6815 mm	22.4 ft	—	—
11 Rear Axle Centerline to Bumper	3187 mm	10.5 ft	3187 mm	10.5 ft
12 Wheelbase	4550 mm	14.9 ft	4550 mm	14.9 ft
13 Maximum Overall Length with Forks on the Ground	11 938 mm	39.2 ft	12 149 mm	39.9 ft
14 Front Axle Centerline to Bucket Tip	4201 mm	13.8 ft	4467 mm	14.7 ft

Load Capacity Curves

L5 Tires, Fork at 25 degree Rack Angle, 1810 mm (71") Tine, Block Handler Quick Coupler and Block Handler Fork.



NOTE:

Static tipping loads and operating weight are based on the following loader configuration: L5 Bridgestone bias tires, air conditioning, ride control, power train guard, full fluids, fuel tank, coolant, lubricants, and operator.

Specifications and ratings conform to the following standards: SAE* J1197, SAE J732, CEN** EN 474-3.

The rated operating load for a loader equipped with a pallet fork is determined by:

SAE J1197: 50% of full turn static tipping load or hydraulic limit.

CEN EN 474-3: 60% of full turn static tipping load on rough terrain or hydraulic limit.

CEN EN 474-3: 80% of full turn static tipping load on firm and level ground or hydraulic limit.

*SAE – Society of Automotive Engineers

**CEN – European Committee for Standardization

988 Block Handler Specifications

Operating Specifications

For machines equipped with Bridgestone 42 PR bias tires with 6.55 bar (95 psi) pressure.

		988 Block Handler Tires: 35/65-R33 SLR: 978 mm		
		Block Handler		
Bucket Type		Rock	Rock	Fork
Ground Engaging Tool		K130	K131	–
Cutting Edge Type		Spade	Spade	–
Bucket Part Number		418-0080	418-0090	418-0070
Struck Capacity	m ³	5.5	5.2	–
	yd ³	7.2	6.8	–
Heaped Capacity (Rated)	m ³	7	6.6	–
	yd ³	9.2	8.6	–
Bucket Width	mm	3940	4020	–
	ft	12.9	13.2	–
Dump Clearance at Full Lift and Full Dump Angle (Segment)	mm	3449	3316	–
	ft	11.3	10.9	–
Dump Clearance at Full Lift and Full Dump Angle (with Teeth)	mm	–	3144	–
	ft	–	3316	–
Reach at Lift and Full Dump Angle (Segment)	mm	2765	2910	–
	ft	9.1	9.5	–
Reach at Lift and Full Dump Angle (with Teeth)	mm	–	3132	–
	ft	–	3316	–
Reach with Lift Arms Horizontal and Bucket Level (Segment or Teeth)	mm	3926	4399	–
	ft	12.9	14.4	–
Digging Depth (Segment)	mm	150	185	–
	in	5.9	7.3	–
Overall Length (Bucket Level Ground)	mm	11 938	12 436	12 149
	ft	39.2	40.8	39.9
Overall Height with Bucket at Full Raise	mm	6815	6815	–
	ft	22.4	22.4	–
Loader Clearance Turning Radius (SAE Carry)	mm	8714	8834	7789
	ft	28.6	29.0	25.6
Full Dump Angle	degrees	–32	–32	–
Static Tipping Load – Straight (Rigid Tire)	kg	52 887	51 384	43 217
	lb	116,597	113,281	95,277
Static Tipping Load – Straight (Tire Squash)	kg	50 417	48 893	42 176
	lb	111,150	107,790	92,982
Static Tipping Load – Full Turn (Articulated 35°) (Rigid Tire)	kg	46 933	45 488	38 471
	lb	103,470	100,283	84,815
Static Tipping Load – Full Turn (Articulated 35°) (Tire Squash)	kg	42 719	42 166	35 513
	lb	94,179	92,960	78,293
Static Tipping Load – Full Turn (Articulated 43°) (Rigid Tire)	kg	44 043	42 625	36 168
	lb	97,098	93,972	79,736
Static Tipping Load – Full Turn (Articulated 43°) (Tire Squash)	kg	39 384	37 963	32 945
	lb	86,827	83,694	72,631
Breakout Force	kN	432	388	–
	lbf	97,093	87,201	–
Operating Weight	kg	63 381	64 106	61 508
	lb	139,730	141,329	135,602
Weight Distribution at SAE Carry (Unloaded)				
Front	kg	27 312	28 732	24 338
	lb	60,212	63,342	53,656
Rear	kg	36 069	35 374	37 170
	lb	79,518	77,987	81,946

25 degree fork angle for tipping loads with 418-0070 forks.

988 Block Handler Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ELECTRICAL			OPERATOR ENVIRONMENT (CONTINUED)		
Alarm, backup	✓		Rimpull control system (RCS)	✓	
Alternator, single 150 amp	✓		Seat, deluxe	✓	
Batteries, dry	✓		Seat, premium plus containing forced air heating and cooling, 2-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness, dynamic end dampening and leather finish		✓
Converter, 10/15 amp, 24V to 12V	✓		Seat belt minder	✓	
Hazardous voltage lamp	✓		Seat belt, retractable, 76 mm (3 in) wide	✓	
Lighting system (LED work lights, access and service platform lighting)	✓		Steering and Transmission Integrated Control (STIC™) system	✓	
Lighting system underhood service lighting		✓	UV glass	✓	
Starting and charging system, 24V	✓		Vital Information Management System (VIMS™) with graphical information display: external data port, customizable operator profiles, cycle timer, integrated payload control system	✓	
Starter emergency start receptacle	✓		Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	✓	
Starter lockout in bumper	✓		Window pull-down visor		✓
Transmission lockout in bumper	✓		Operator presence	✓	
OPERATOR ENVIRONMENT			Slope indication	✓	
Air conditioner	✓		POWERTRAIN		
Cat Vision, rear-vision camera system	✓		Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	✓	
Cat Production Measurement ready	✓		Antifreeze -50°C (-58°F)		✓
Cat Production Measurement		✓	Automatic retarding controls	✓	
Cat Detect, object detection system		✓	Brakes, oil-cooled, multi-disc, service/secondary	✓	
Cab, sound suppressed and pressurized, integrated rollover protective structure/falling objects protective structure (ROPS/FOPS), radio ready for entertainment, includes antenna, speakers and converter (12-volt 5-amp) and power port	✓		Case drain screens	✓	
Cab precleaner		✓	Crankcase guard		✓
Configurable external seat belt beacon indicator		✓	Electro hydraulic parking brake	✓	
Controls, lift and tilt function	✓		Engine brake		✓
Economy mode	✓		Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled	✓	
3rd function valve controls		✓	Engine oil change system, high speed, Wiggins		✓
Graphical information display, displays real time operating information, performs calibrations, and customizes operator settings	✓		Ground-level engine shutoff	✓	
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, powertrain oil temperature	✓		High ambient cooling – software		✓
Heater, defroster	✓		Turbine precleaner, engine air intake	✓	
Horn, electric	✓		Turbine precleaner, engine air intake dual stage	✓	
LED warning strobe		✓	Radiator, aluminum modular radiator (AMR)	✓	
Light, cab, dome	✓		Starting aid, ether, automatic	✓	
Lights, directional	✓		Throttle lock, electronic	✓	
Lunchbox, beverage holders	✓		Torque converter, impeller clutch (ICTC) with lock up clutch (LUC), rimpull control system	✓	
Machine overload protection	✓		Transmission, planetary power shift, 4F/3R electronic control	✓	
Mirrors, rearview (externally mounted)	✓		Manual switch and automatic fuel priming	✓	
Mirrors, handrail mounted		✓			
Mirrors, heated		✓			
Radio, AM/FM/CD/MP3 Bluetooth®	✓				
Radio, AM/FM/CD/MP3 Bluetooth with Satellite Sirius XM		✓			
Radio, CB ready	✓				

988 Block Handler Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ADDITIONAL EQUIPMENT			ADDITIONAL EQUIPMENT (CONTINUED)		
Autolube with auto shutoff		✓	Hitch, drawbar with pin	✓	
Automatic bucket lift kickout/positioner	✓		Hoses, Cat XT™	✓	
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines		✓	Hydraulic, steering and brake filtration/screening system	✓	
Base machine price includes a rim allowance	✓		Load and carry counterweight		✓
Cat Clean Emission Module (CEM)	✓		Hydraulically driven demand fan	✓	
Couplings, Cat O-ring face seals	✓		Oil sampling valves	✓	
Doors, service access (locking)	✓		Rear access to cab and service platform	✓	
Ecology drains for engine, radiator, hydraulic tank	✓		Steering, load sensing	✓	
Fuel tank, 712L (188 gal)	✓		Tire pressure monitoring system		✓
Fast fill fuel system (Shaw-Aero)		✓	Toe kicks	✓	
Front and rear roading fenders		✓	Vandalism protection caplocks	✓	
			Wheel chocks		✓



988

Millyard Arrangement

Millyard applications demand the additional performance, productivity, and safety that Cat® forestry wheel loaders deliver.

Proven Reliability

- Cat C18 engine is built and tested to meet your most demanding applications.
- Cat torque converter with lock-up clutch helps eliminate torque converter losses and lowers system heat.
- Maximum responsiveness with Steering and Transmission Integrated Control (STIC™).
- Moves more material more efficiently with improved power and control.
- Durable construction withstands the toughest loading conditions and multiple lifecycles.

Durability

- Achieves long engine life and improved fuel efficiency with reduced high idle speed.
- Automatic retarder controls help maintain optimal speed on grade.
- One-piece castings help provide enhanced strength in key pin areas.
- Full box section rear frame helps resist torsional shock and twisting forces.
- Durable construction withstands the toughest operating conditions and multiple lifecycles.

Achieve Greater Productivity

- Unload a typical full-length log truck in a single pass with the larger lift and tilt cylinders and a unique tilt lever to maximize linkage force.
- Designed with 20% more lift capacity and 26% more tilt capacity over the standard 988.
- Superior acceleration, smoother directional shifts, and reduced travel times.
- Maximum responsiveness with Steering and Integrated Control (STIC™).
- Convenient, responsive electro-hydraulic controls increase operator productivity.
- Purpose-built lift arm with lowered cross member to help increase visibility to the tips of the forks, helping to increase the speed when lining up the load and reduce operator movements to see the forks.

Superior Fuel Efficiency

- Continuously variable speed control up to maximum ground speed.
- Positive flow control (PFC) hydraulic system helps increase efficiency and attachment responsiveness with consistent performance.
- Economy mode for reduced rated engine speed and to help fuel consumption.

- Fully integrated electronic engine controls help make your fuel go farther.
- Engine idle shutdown for less fuel used while idling.
- Flow sharing hydraulics provide full flow at reduced engine rpm.
- Increased hydraulic speed and fast cycle times help decrease idle and fuel burn with optimal efficiency.

Safety Features

- Achieve precise positioning in tight areas with 43 degrees of steering articulation.
- Precise machine control by load-sensing hydraulic steering system.
- Reduced stairway angles and standard stairway lighting help provide lower risk of slips, trips, and falls due to better visibility of the steps and stairway.
- Computerized monitoring system with warning indicators.
- Standard Cat Vision enhances visibility behind the machine, helping you work safely and confidently.
- Pressurized cabin with filtered air and reduced sound levels.

Reduced Maintenance Time and Costs

- Long life, rebuildability, and high resale value with low maintenance costs.
- Grouped service points and swing-out engine compartment service doors provide easy access to critical daily service checks.
- Ecology drains to prevent spills.
- Reduced waste with maintenance-free batteries.
- Operators can now monitor tire pressure during operation with any change sending a fault code to VisionLink®, helping to prevent premature tire failure.
- Swing-out fan radiator design for easier service in high-debris millyard applications, helping reduce maintenance and service downtime. Auto reversing fan system to help dislodge debris and keep air flowing across the radiator cores.

Easy, Comfortable Operator Environment

- World-class operator comfort and ergonomics.
- Cat Premium Plus seat with standard features, including leather finish, forced air heating and cooling, two-way thigh adjustment, power lumbar and back bolster adjustment, and dynamic end dampening to provide total comfort throughout the workday.
- Easy-to-reach levers and seat-mounted implement pod to reduce fatigue.
- Reduced vibrations from isolated cab mounts and seat air suspension.

988 Millyard Arrangement Specifications

Engine

Engine Model	Cat C18	
Rated Speed	1,700 rpm	
Peak Power Speed	1,500 rpm	
Engine (ISO 14396:2002)	432 kW	580 hp
Gross (SAE J1995:2014)	439 kW	588 hp
Net Power (SAE J1349:2011)	403 kW	541 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,105 in ³
Peak Torque @ 1,200 rpm	2852 N·m	2,104 lb-ft
Torque Rise	58%	

Three engine emission options are available:

1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.
 2. Meets Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
 3. Meets China Nonroad Stage IV emission standards.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan at minimum speed, air intake system, exhaust system, and alternator.

Operating Specifications

Operating Weight	63 619 kg	139,962 lb
Tipping Load:		
Straight	35 500 kg	78,100 lb
Articulated 37°	29 375 kg	64,625 lb

Transmission

Transmission Type	Cat planetary power shift	
Forward 1	6.5 km/h	4.0 mph
Forward 2	11.6 km/h	7.2 mph
Forward 3	20.4 km/h	12.7 mph
Forward 4	34.7 km/h	21.6 mph
Reverse 1	7.5 km/h	4.7 mph
Reverse 2	13.3 km/h	8.3 mph
Reverse 3	23.2 km/h	14.4 mph
Direct Drive Forward 1	Lock-up disabled	
Direct Drive Forward 2	12.5 km/h	7.8 mph
Direct Drive Forward 3	22.3 km/h	13.9 mph
Direct Drive Forward 4	39.3 km/h	24.4 mph
Direct Drive Reverse 1	8.0 km/h	5.0 mph
Direct Drive Reverse 2	14.3 km/h	8.9 mph
Direct Drive Reverse 3	25.5 km/h	15.8 mph

- Travel speeds based on 35/65-R33 tire.

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	EH – positive flow control, flow sharing	
Lift/Tilt System	Variable displacement piston	
Maximum Flow at 1,400-1,860 rpm	580 L/min	153 gal/min
Relief Valve Setting – Lift/Tilt	32 000 kPa	4,641 psi
Cylinders, Double Acting: Lift, Bore and Stroke	235 mm × 976 mm	9.25 in × 38.4 in
Cylinders, Double Acting: Tilt, Bore and Stroke	292 mm × 671 mm	11.5 in × 26.4 in
Pilot System	Variable displacement piston	
Maximum Flow	52 L/min	13.7 gal/min
Relief Valve Setting	4000 kPa	580 psi

Hydraulic System – Steering

Steering System – Circuit	Pilot, load sensing	
Steering System – Pump	Piston, variable displacement	
Maximum Flow	270 L/min	71.3 gal/min
Relief Valve Setting – Steering	30 000 kPa	4,351 psi
Total Steering Angle	74°	
Steering Cycle Time (high idle)	3.4 sec	
Steering Cycle Time (low idle)	5.6 sec	

Service Refill Capacities

Fuel Tank	712 L	188 gal
Cooling System	120 L	31.7 gal
Crankcase	60 L	15.9 gal
Diesel Exhaust Fluid Tank	33 L	8.7 gal
Transmission	92 L	24.3 gal
Differentials and Final Drives – Front	186 L	49.1 gal
Differentials and Final Drives – Rear	186 L	49.1 gal
Hydraulic System Factory Fill	475 L	125.5 gal
Hydraulic System (tank only)	240 L	63.4 gal

- All non-road Tier 4 Final/Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels** up to:
 - 20% biodiesel FAME (fatty acid methyl ester)*
 - 100% renewable diesel, HVO (hydrotreated 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.
- Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).**
- For pre-Tier 4 engines: 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 (hydrotreated 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.

**Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	13°

Brakes

Brakes	ISO 3450:2011
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Sound Performance – Tier 4 Final/Stage V

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	111 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	109 dB(A)**

Sound Performance – Tier 3/Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	110 dB(A)**

*For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”

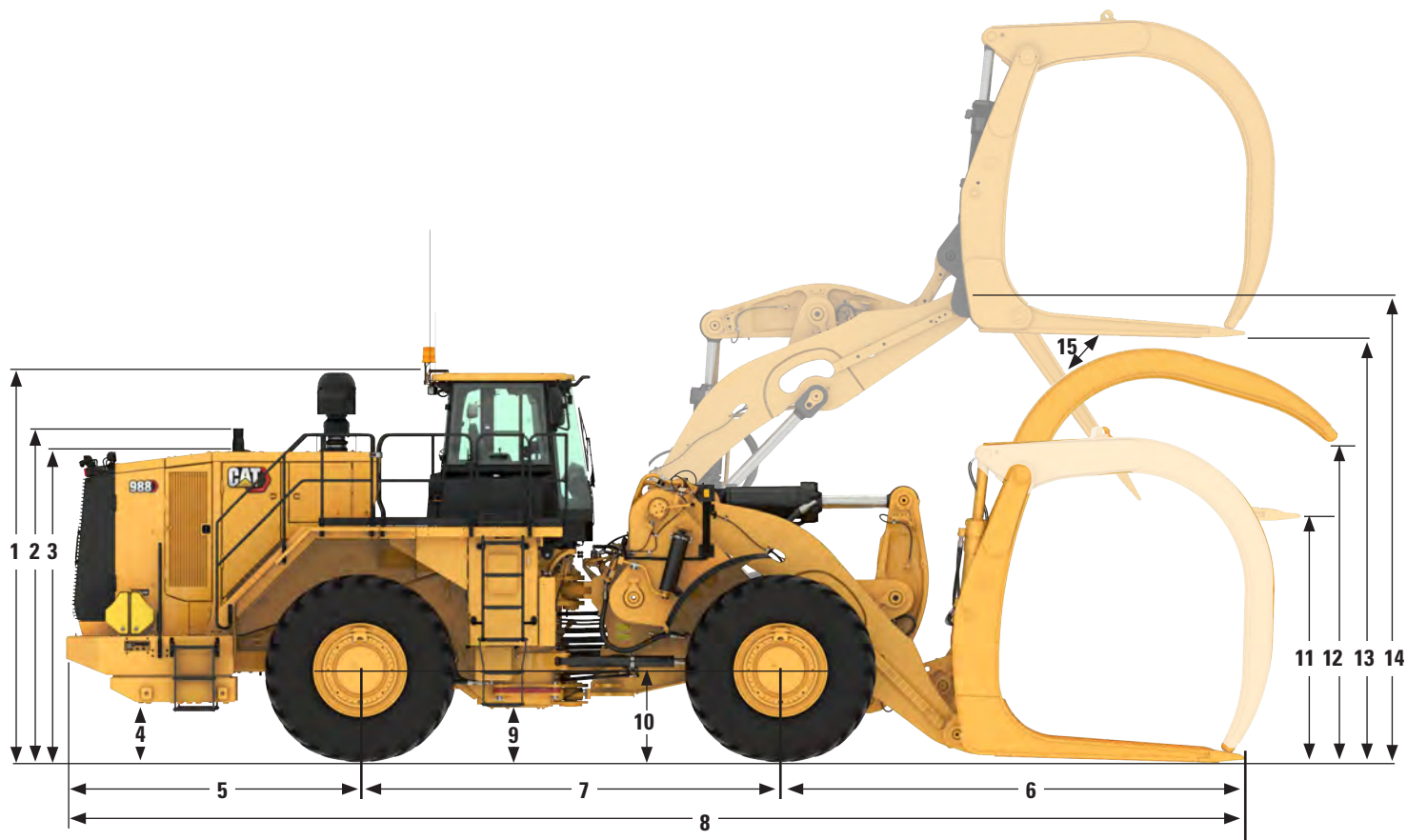
**European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.

- The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

988 Millyard Arrangement Specifications

Dimensions

All dimensions are approximate.



Millyard Linkage		
1	Ground to Top of ROPS	4221 mm13.8 ft
2	Ground to Top of Exhaust Stack	4214 mm13.8 ft
3	Ground to Top of Hood	3334 mm10.9 ft
4	Ground to Bumper Clearance	933 mm3.1 ft
5	Rear Axle Centerline to Bumper	3187 mm10.5 ft
6	Front Axle Centerline to Fork Tip	4765 mm15.6 ft
7	Wheelbase	4550 mm14.9 ft
8	Maximum Overall Length	12 502 mm41.0 ft
9	Ground to Lower Hitch Clearance	568 mm1.9 ft
10	Ground to Center of Front Axle	978 mm3.2 ft
11	Fork Height with Level Arms	2468 mm8.1 ft
12	Fork Top Clamp Opening	3741 mm12.3 ft
13	Fork Height at Maximum Lift	4660 mm15.3 ft
14	Hinge Pin Height at Maximum Lift	4918 mm16.1 ft
15	Dump Angle at Maximum Lift	39.4 degrees

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ELECTRICAL			OPERATOR ENVIRONMENT (CONTINUED)		
Alarm, backup	✓		Rimpull control system (RCS)	✓	
Alternator, single 150 amp	✓		Seat, deluxe	✓	
Batteries, dry	✓		Seat, premium plus containing forced air heating and cooling, 2-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness, dynamic end dampening and leather finish		✓
Converter, 10/15 amp, 24V to 12V	✓		Seat belt minder	✓	
Hazardous voltage lamp	✓		Seat belt, retractable, 76 mm (3 in) wide	✓	
Lighting system (LED work lights, access and service platform lighting)	✓		Steering and Transmission Integrated Control (STIC™) system	✓	
Lighting system underhood service lighting		✓	UV glass	✓	
Starting and charging system, 24V	✓		Vital Information Management System (VIMS™) with graphical information display: external data port, customizable operator profiles, cycle timer, integrated payload control system	✓	
Starter emergency start receptacle	✓		Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	✓	
Starter lockout in bumper	✓		Window pull-down visor		✓
Transmission lockout in bumper	✓		Operator presence	✓	
OPERATOR ENVIRONMENT			Slope indication	✓	
Air conditioner	✓		POWERTRAIN		
Cat Vision, rear-vision camera system	✓		Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	✓	
Cat Detect, object detection system		✓	Antifreeze -50°C (-58°F)		✓
Cab, sound suppressed and pressurized, integrated rollover protective structure/falling objects protective structure (ROPS/FOPS), radio ready for entertainment, includes antenna, speakers and converter (12-volt 5-amp) and power port	✓		Automatic retarding controls	✓	
Cab precleaner		✓	Brakes, oil-cooled, multi-disc, service/secondary	✓	
Configurable external seat belt beacon indicator		✓	Case drain screens	✓	
Controls, lift and tilt function	✓		Crankcase guard		✓
Economy mode	✓		Electro hydraulic parking brake	✓	
3rd function valve controls		✓	Engine brake		✓
Graphical information display, displays real time operating information, performs calibrations, and customizes operator settings	✓		Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled	✓	
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, powertrain oil temperature	✓		Engine oil change system, high speed, Wiggins		✓
Heater, defroster	✓		Ground-level engine shutoff	✓	
Horn, electric	✓		High ambient cooling – software		✓
LED warning strobe		✓	Turbine precleaner, engine air intake	✓	
Light, cab, dome	✓		Turbine precleaner, engine air intake dual stage	✓	
Lights, directional	✓		Radiator, aluminum modular radiator (AMR)	✓	
Lunchbox, beverage holders	✓		Starting aid, ether, automatic	✓	
Machine overload protection	✓		Throttle lock, electronic	✓	
Mirrors, rearview (externally mounted)	✓		Torque converter, impeller clutch (ICTC) with lock up clutch (LUC), rimpull control system	✓	
Mirrors, handrail mounted		✓	Transmission, planetary power shift, 4F/3R electronic control	✓	
Mirrors, heated		✓	Manual switch and automatic fuel priming	✓	
Radio, AM/FM/CD/MP3 Bluetooth®	✓				
Radio, AM/FM/CD/MP3 Bluetooth with Satellite Sirius XM		✓			
Radio, CB ready	✓				

988 Millyard Arrangement Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ADDITIONAL EQUIPMENT			ADDITIONAL EQUIPMENT (CONTINUED)		
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines		✓	Hitch, drawbar with pin	✓	
Base machine price includes a rim allowance	✓		Hoses, Cat XT™	✓	
Cat Clean Emission Module (CEM)	✓		Hydraulic, steering and brake filtration/ screening system	✓	
Couplings, Cat O-ring face seals	✓		Hydraulically driven demand fan	✓	
Doors, service access (locking)	✓		Oil sampling valves	✓	
Ecology drains for engine, radiator, hydraulic tank	✓		Rear access to cab and service platform	✓	
EZ Clean cooling system		✓	Steering, load sensing	✓	
Fuel tank, 712L (188 gal)	✓		Tire pressure monitoring system		✓
Fast fill fuel system (Shaw-Aero)		✓	Toe kicks	✓	
Front and rear roading fenders		✓	Vandalism protection caplocks	✓	
			Wheel chocks		✓



988

Steel Mill Arrangement

The Cat® 988 Steel Mill package provides the additional performance, productivity, and safety that is demanded in the steel mill.

Proven Reliability

- Cat C18 engine is built and tested to meet your most demanding applications.
- Cat torque converter with lock-up clutch helps eliminate torque converter losses and lowers system heat.
- Maximum responsiveness with Steering and Transmission Integrated Control (STIC™).
- Moves more material more efficiently with improved power and control.
- Durable construction withstands the toughest loading conditions and multiple lifecycles.

Durability

- World-class transmission for long life and consistent, smooth shifting.
- Advanced productivity electronic control strategy (APECS) transmission controls for optimal momentum on grades.
- Positive flow control (PFC) hydraulic system helps increase efficiency, bucket feel, and responsiveness with consistent performance.
- Advanced filtration system for extended performance and reliability of the hydraulic system.
- Impeller clutch torque converter (ICTC) helps minimize tire spin by allowing torque to adjust to underfoot conditions.

Achieve Greater Productivity

- Superior digging, higher bucket fill factors, reduced dig times.
- Improved visibility over the top of the linkage.
- Operators can now monitor tire pressure during operation. Any change sends a fault code to VisionLink®, helping prevent premature tire failure.

Superior Fuel Efficiency

- Economy mode helps optimize engine speed control for reduced fuel consumption no matter if operating in manual throttle or throttle lock.
- Flow sharing hydraulics provide full flow at reduced engine rpm.
- Fully integrated electronic engine controls help make your fuel go farther.

- Engine idle shutdown for less fuel used while idling.
- Increased hydraulic speed and fast cycle times help decrease idle and fuel burn with optimal efficiency.

Increase Productivity and Efficiency with Integrated Technologies

- Cat Technologies developed to monitor, manage, and enhance your job site operations.
- Cat Payload provides accurate weighing* of the materials you are loading and hauling. Payload data is displayed in real-time to improve productivity and reduce overloading.
- Cat Detect enhances awareness of the environment around working equipment and provides alerts to help keep people and assets safe on the job site.
- Product Link™ wirelessly connects you to your equipment, giving you access to essential information you need to know to run your business.
- Gain valuable insight into how your machine or fleet is performing.
- Optional advanced productivity plan provides comprehensive actionable information to help you manage and improve the productivity and profitability of your operations.
- Optimized dig segment cycle with optional operator assist – tire slip prevention, auto set tires, and lift stall prevention.

Steel Mill Arrangement

- Durable and reinforced attachments for operator comfort, safety, and easy machine access.
- Radiator is designed for easy cleaning and to keep material from building up.
- Auto reversing fan and easy access to cooling cores help keep cab at comfortable temperature.
- Equipped with extra guarding and heat protection for critical machine functions.
- Flame resistant ecosafe hydraulic fluid available as an option.
- Performance series, serrated edge slag, straight edge slag, and slag buckets help maximize material retention and minimize dig time.
- Transmission and parking brake override controls in the cab and rear bumper provide safe machine retrieval in case of emergency.

**Not legal for trade.*

988 Steel Mill Arrangement Specifications

Engine

Engine Model	Cat® C18	
Rated Speed	1,700 rpm	
Peak Power Speed	1,500 rpm	
Engine (ISO 14396:2002)	432 kW	580 hp
Gross (SAE J1995:2014)	439 kW	588 hp
Net Power (SAE J1349:2011)	403 kW	541 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,105 in ³
Peak Torque @ 1,200 rpm	2852 N·m	2,104 lb-ft
Torque Rise	58%	

Three engine emission options are available:

1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.
 2. Meets Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
 3. Meets China Nonroad Stage IV emission standards.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan at minimum speed, air intake system, exhaust system, and alternator.

Operating Specifications

Operating Weight	51 062 kg	112,574 lb
Rated Payload – Standard	11.3 tonnes	12.5 tons
Rated Payload – High Lift	11.3 tonnes	12.5 tons
Bucket Capacity Range	6.4-7.6 m ³	8.3-10 yd ³
Cat Truck Match – Standard	770-772	
Cat Truck Match – High Lift	773-775	

Transmission

Transmission Type	Cat planetary power shift	
Forward 1	6.5 km/h	4.0 mph
Forward 2	11.6 km/h	7.2 mph
Forward 3	20.4 km/h	12.7 mph
Forward 4	34.7 km/h	21.6 mph
Reverse 1	7.5 km/h	4.7 mph
Reverse 2	13.3 km/h	8.3 mph
Reverse 3	23.2 km/h	14.4 mph
Direct Drive Forward 1	Lock-up disabled	
Direct Drive Forward 2	12.5 km/h	7.8 mph
Direct Drive Forward 3	22.3 km/h	13.9 mph
Direct Drive Forward 4	39.3 km/h	24.4 mph
Direct Drive Reverse 1	8.0 km/h	5.0 mph
Direct Drive Reverse 2	14.3 km/h	8.9 mph
Direct Drive Reverse 3	25.5 km/h	15.8 mph

- Travel speeds based on 35/65-R33 tire.

988 Steel Mill Arrangement Specifications

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	EH – positive flow control, flow sharing	
Lift/Tilt System	Variable displacement piston	
Maximum Flow at 1,400-1,860 rpm	580 L/min	153 gal/min
Relief Valve Setting – Lift/Tilt	32 800 kPa	4,757 psi
Cylinders, Double Acting: Lift, Bore and Stroke	210 mm × 1050 mm	8.3 in × 41.3 in
Cylinders, Double Acting: Tilt, Bore and Stroke	267 mm × 685 mm	10.5 in × 27.0 in
Pilot System	Variable displacement piston	
Maximum Flow	52 L/min	13.7 gal/min
Relief Valve Setting	3800 kPa	551 psi

Hydraulic Cycle Time (1,400-1,860 rpm)

Rackback	4.5 Seconds
Raise	8.0 Seconds
Dump	2.2 Seconds
Lower Float Down	3.5 Seconds
Total Hydraulic Cycle Time (empty bucket)	18.2 Seconds

Hydraulic System – Steering

Steering System – Circuit	Pilot, load sensing	
Steering System – Pump	Piston, variable displacement	
Maximum Flow	270 L/min	71.3 gal/min
Relief Valve Setting – Steering	30 000 kPa	4,351 psi
Total Steering Angle	80°	
Steering Cycle Time (high idle)	3.4 sec	
Steering Cycle Time (low idle)	5.6 sec	

Service Refill Capacities

Fuel Tank	686 L	181 gal
Cooling System	92 L	24.3 gal
Crankcase	60 L	15.9 gal
Diesel Exhaust Fluid Tank (Tier 4)	33 L	8.7 gal
Transmission	92 L	24.3 gal
Differentials and Final Drives – Front	186 L	49.1 gal
Differentials and Final Drives – Rear	186 L	49.1 gal
Hydraulic System Factory Fill	475 L	125.5 gal
Hydraulic System (tank only)	240 L	63.4 gal

- All non-road Tier 4 Final/Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels** up to:
 - 20% biodiesel FAME (fatty acid methyl ester)*
 - 100% renewable diesel, HVO (hydrotreated 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.

- Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).**
- For pre-Tier 4 engines: 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 (hydrotreated 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.

**Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	±6°

Brakes

Brakes	ISO 3450:2011
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Sound Performance – Tier 4 Final/Stage V

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	111 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	109 dB(A)**

Sound Performance – Tier 3/Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)	72 dB(A)*
Machine Sound Power Level (ISO 6395:2008)	110 dB(A)**

*For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”

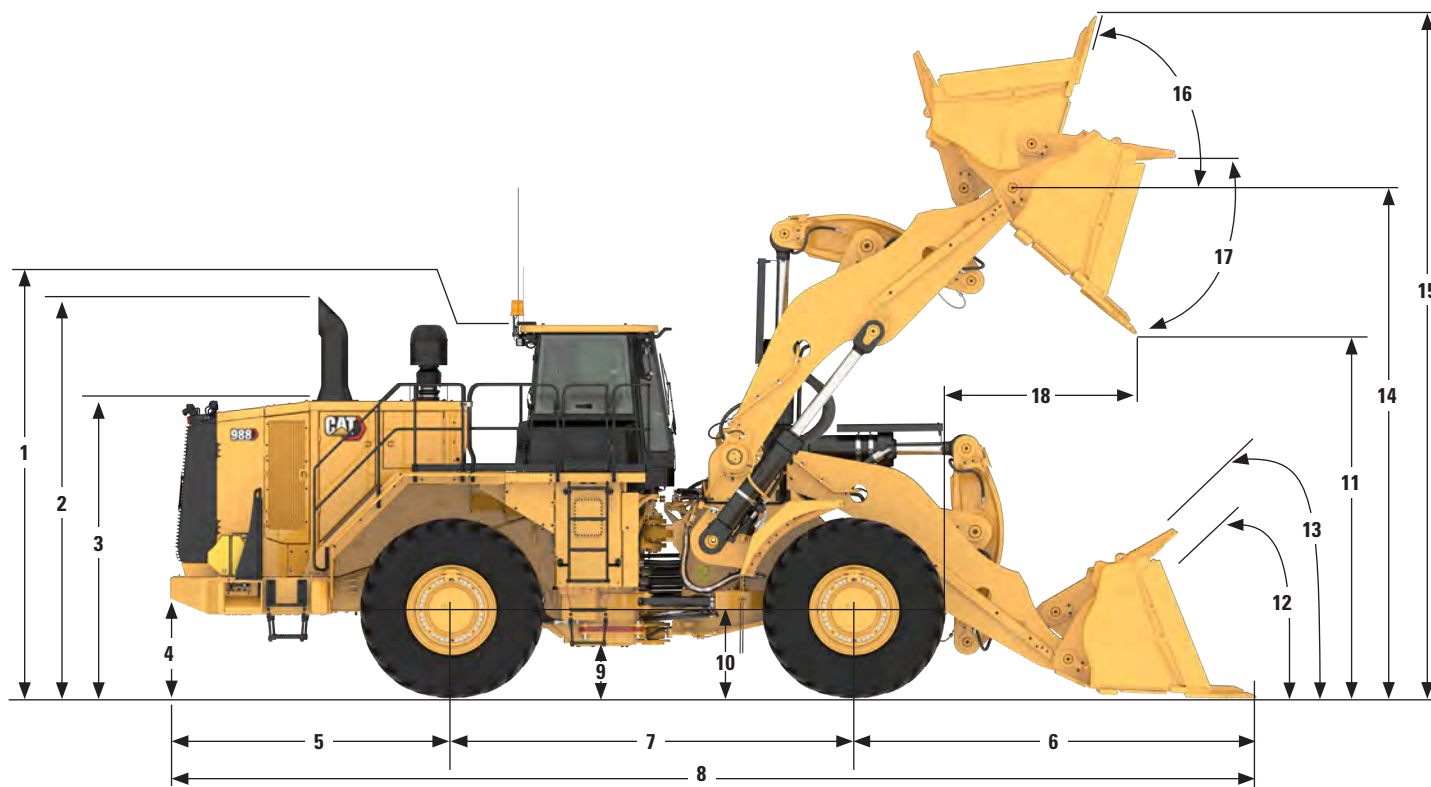
**European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.

- The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

988 Steel Mill Arrangement Specifications

Dimensions

All dimensions are approximate.



	Standard Lift*		High Lift*	
1 Ground to Top of ROPS	4187 mm	13.7 ft	4187 mm	13.7 ft
2 Ground to Top of Exhaust Stack	4214 mm	13.8 ft	4214 mm	13.8 ft
3 Ground to Top of Hood	3334 mm	10.9 ft	3334 mm	10.9 ft
4 Ground to Bumper Clearance	933 mm	3.1 ft	933 mm	3.1 ft
5 Rear Axle Centerline to Bumper	3187 mm	10.5 ft	3187 mm	10.5 ft
6 Front Axle Centerline to Bucket Tip	4150 mm	13.6 ft	4556 mm	14.9 ft
7 Wheelbase	4550 mm	14.9 ft	4550 mm	14.9 ft
8 Maximum Overall Length	11 887 mm	39.0 ft	12 293 mm	40.3 ft
9 Ground to Lower Hitch Clearance	568 mm	1.9 ft	568 mm	1.9 ft
10 Ground to Center of Front Axle	978 mm	3.2 ft	978 mm	3.2 ft
11 Clearance at Maximum Lift	3695 mm	12.1 ft	4088 mm	13.4 ft
12 Rack Back Angle at Ground Level	43.6 degrees		44.7 degrees	
13 Rack Back Angle at Carry	51.0 degrees		52.9 degrees	
14 B-Pin Height at Maximum Lift	5479 mm	18.0 ft	5881 mm	19.3 ft
15 Maximum Overall Height, Bucket Raised	7384 mm	24.2 ft	7778 mm	25.5 ft
16 Rack Angle at Maximum Lift	64.5 degrees		64.3 degrees	
17 Dump Angle at Maximum Lift	-49.8 degrees		-50.1 degrees	
18 Reach at Maximum Lift	1833 mm	6.0 ft	1921 mm	6.3 ft

*Dimensions shown with 6.5 m³ (8.5 yd³) serrated spade edge bucket.

988 Steel Mill Arrangement Specifications

Operating Specifications – Standard Lift

		988 Standard, Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm	
Bucket Type		Slag	
Ground Engaging Tool		Serrated	J600
Cutting Edge Type		Spade	Straight
Bucket Part Number		421-6100	435-1810
Struck Capacity	m ³	5.0	4.2
	yd ³	6.5	5.5
Heaped Capacity (Rated)	m ³	6.5	5.5
	yd ³	8.5	7.2
Bucket Width	mm	4032	3900
	ft	13.2	12.8
Dump Clearance at Full Lift and 45° Discharge (Bare)	mm	3758	4026
	ft	12.3	13.2
Dump Clearance at Full Lift and 45° Discharge (with Teeth)	mm	3695	3752
	ft	12.1	12.3
Reach at Full Lift and 45° Discharge (Bare)	mm	1770	1510
	ft	5.8	5.0
Reach at Full Lift and 45° Discharge (with Teeth)	mm	1833	1677
	ft	6.0	5.5
Reach with Lift Arms Horizontal and Bucket Level (with Teeth)	mm	3833	3682
	ft	12.6	12.1
Digging Depth (Segment)	mm	209	203
	in	8	8
Overall Length (Bucket Level on Ground)	mm	11 887	11 732
	ft	39.0	38.5
Overall Height with Bucket at Full Raise	mm	7384	7367
	ft	24.2	24.2
Loader Clearance Turning Radius (SAE Carry with Teeth)	mm	17 254	17 311
	ft	56.6	56.8
Full Dump Angle	deg	–50	–50
Static Tipping Load – Straight (Rigid Tire)	kg	33 275	34 018
	lb	73,205	74,840
Static Tipping Load – Straight (Tire Squash)	kg	31 263	31 998
	lb	68,778	70,395
Static Tipping Load – Full Turn (Articulated 35°) (Rigid Tire)	kg	29 474	30 183
	lb	64,843	66,402
Static Tipping Load – Full Turn (Articulated 35°) (Tire Squash)	kg	26 366	27 067
	lb	58,006	59,547
Static Tipping Load – Full Turn (Articulated 40°) (Rigid Tire)	kg	28 538	29 056
	lb	62,784	63,923
Static Tipping Load – Full Turn (Articulated 40°) (Tire Squash)	kg	25 044	25 734
	lb	55,097	56,615
Breakout Force	kN	408	508
	lbf	91,610	114,076
Operating Weight	kg	55 491	55 100
	lb	122,081	121,221
Weight Distribution at SAE Carry (Unloaded)			
Front	kg	33 281	32 622
	lb	73,219	71,768
Rear	kg	22 210	22 478
	lb	48,862	49,452
Weight Distribution at SAE Carry (Loaded)			
Front	kg	51 459	50 688
	lb	113,211	111,513
Rear	kg	15 372	15 752
	lb	33,818	34,655

Michelin XLDD1 2 Star with 6.3 bar (92 psi) pressure.

988 Steel Mill Arrangement Specifications

Operating Specifications – High Lift

		988 High Lift, Tires: 35/65 R33 XLDD1, PN: 339-8790 SLR: 978 mm	
Bucket Type		Slag	
Ground Engaging Tool		Serrated	J600
Cutting Edge Type		Spade	Straight
Bucket Part Number		421-6100	435-1810
Struck Capacity	m ³	5.0	4.2
	yd ³	6.5	5.5
Heaped Capacity (Rated)	m ³	6.5	5.5
	yd ³	8.5	7.2
Bucket Width	mm	4032	3900
	ft	13.2	12.8
Dump Clearance at Full Lift and 45° Discharge (Bare)	mm	4151	4419
	ft	13.6	14.5
Dump Clearance at Full Lift and 45° Discharge (with Teeth)	mm	4088	4146
	ft	13.4	13.6
Reach at Full Lift and 45° Discharge (Bare)	mm	1858	1599
	ft	6.1	5.2
Reach at Full Lift and 45° Discharge (with Teeth)	mm	1921	1765
	ft	6.3	5.8
Reach with Lift Arms Horizontal and Bucket Level (with Teeth)	mm	4172	4021
	ft	13.7	13.2
Digging Depth (Segment)	mm	228	222
	in	9	9
Overall Length (Bucket Level on Ground)	mm	12 293	12 138
	ft	40.3	39.8
Overall Height with Bucket at Full Raise	mm	7778	7761
	ft	25.5	25.5
Loader Clearance Turning Radius (SAE Carry with Teeth)	mm	17 603	17 672
	ft	57.8	58.0
Full Dump Angle		–50	–50
Static Tipping Load – Straight (Rigid Tire)	kg	31 072	31 742
	lb	68,359	69,831
Static Tipping Load – Straight (Tire Squash)	kg	29 312	29 980
	lb	64,487	65,956
Static Tipping Load – Full Turn (Articulated 35°) (Rigid Tire)	kg	27 371	28 012
	lb	60,216	61,626
Static Tipping Load – Full Turn (Articulated 35°) (Tire Squash)	kg	24 527	25 169
	lb	53,959	55,371
Static Tipping Load – Full Turn (Articulated 40°) (Rigid Tire)	kg	26 284	26 916
	lb	57,825	59,215
Static Tipping Load – Full Turn (Articulated 40°) (Tire Squash)	kg	23 235	23 867
	lb	51,117	52,507
Breakout Force	kN	375	467
	lbf	84,168	104,855
Operating Weight	kg	56 834	56 443
	lb	125,035	124,175
Weight Distribution at SAE Carry (Unloaded)			
Front	kg	34 069	33 377
	lb	74,952	73,429
Rear	kg	22 765	23 066
	lb	50,083	50,746
Weight Distribution at SAE Carry (Loaded)			
Front	kg	53 244	52 446
	lb	117,137	115,382
Rear	kg	14 930	15 337
	lb	32,846	33,741

Michelin XLDD1 2 Star with 6.3 bar (92 psi) pressure.

988 Steel Mill Arrangement Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ELECTRICAL			OPERATOR ENVIRONMENT (CONTINUED)		
Alarm, backup	✓		Rimpull control system (RCS)	✓	
Alternator, single 150 amp	✓		Seat, deluxe	✓	
Batteries, dry	✓		Seat, premium plus containing forced air heating and cooling, 2-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness, dynamic end dampening and leather finish		✓
Converter, 10/15 amp, 24V to 12V	✓		Seat belt minder	✓	
Hazardous voltage lamp	✓		Seat belt, retractable, 76 mm (3 in) wide	✓	
Lighting system (LED work lights, access and service platform lighting)	✓		Steering and Transmission Integrated Control (STIC™) system	✓	
Lighting system underhood service lighting		✓	UV glass	✓	
Starting and charging system, 24V	✓		Vital Information Management System (VIMS™) with graphical information display: external data port, customizable operator profiles, cycle timer, integrated payload control system	✓	
Starter emergency start receptacle	✓		Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	✓	
Starter lockout in bumper	✓		Window pull-down visor		✓
Transmission lockout in bumper	✓		Operator presence	✓	
OPERATOR ENVIRONMENT			Slope indication	✓	
Air conditioner	✓		POWERTRAIN		
Cat Vision, rear-vision camera system	✓		Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	✓	
Cat Production Measurement ready	✓		Antifreeze -50°C (-58°F)		✓
Cat Production Measurement		✓	Automatic retarding controls	✓	
Cat Detect, object detection system		✓	Brakes, oil-cooled, multi-disc, service/secondary	✓	
Cab, sound suppressed and pressurized, integrated rollover protective structure/falling objects protective structure (ROPS/FOPS), radio ready for entertainment, includes antenna, speakers and converter (12-volt 5-amp) and power port	✓		Case drain screens	✓	
Cab precleaner		✓	Crankcase guard		✓
Configurable external seat belt beacon indicator		✓	Electro hydraulic parking brake	✓	
Controls, lift and tilt function	✓		Engine brake		✓
Economy mode	✓		Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled	✓	
3rd function valve controls		✓	Engine oil change system, high speed, Wiggins		✓
Graphical information display, displays real time operating information, performs calibrations, and customizes operator settings	✓		Ground-level engine shutoff	✓	
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, powertrain oil temperature	✓		High ambient cooling – software		✓
Heater, defroster	✓		Turbine precleaner, engine air intake	✓	
Horn, electric	✓		Turbine precleaner, engine air intake dual stage	✓	
LED warning strobe		✓	Radiator, aluminum modular radiator (AMR)	✓	
Light, cab, dome	✓		Starting aid, ether, automatic	✓	
Lights, directional	✓		Throttle lock, electronic	✓	
Lunchbox, beverage holders	✓		Torque converter, impeller clutch (ICTC) with lock up clutch (LUC), rimpull control system	✓	
Machine overload protection	✓		Transmission and parking brake overrides	✓	
Mirrors, rearview (externally mounted)	✓		Transmission, planetary power shift, 4F/3R electronic control	✓	
Mirrors, handrail mounted		✓	Manual switch and automatic fuel priming	✓	
Mirrors, heated		✓			
Radio, AM/FM/CD/MP3 Bluetooth®	✓				
Radio, AM/FM/CD/MP3 Bluetooth with Satellite Sirius XM		✓			
Radio, CB ready	✓				

988 Steel Mill Arrangement Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ADDITIONAL EQUIPMENT			ADDITIONAL EQUIPMENT (CONTINUED)		
Operator assist ready	✓		Fast fill fuel system (Shaw-Aero)		✓
Operator assist, tire slip prevention, auto set tires, and lift stall prevention		✓	Front and rear roading fenders		✓
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines		✓	Hitch, drawbar with pin	✓	
Autolube with auto shutoff		✓	Hoses, Cat XT™	✓	
Automatic bucket lift kickout/positioner	✓		Hydraulic, steering and brake filtration/screening system	✓	
Base machine price includes a rim allowance	✓		Hydraulically driven demand fan	✓	
Cat Clean Emission Module (CEM)	✓		Load and carry counterweight		✓
Couplings, Cat O-ring face seals	✓		Oil sampling valves	✓	
Doors, service access (locking)	✓		Rear access to cab and service platform	✓	
Ecology drains for engine, radiator, hydraulic tank	✓		Steering, load sensing	✓	
EZ Clean cooling system		✓	Tire pressure monitoring system		✓
Fuel tank, 712L (188 gal)	✓		Toe kicks	✓	
			Transmission brake	✓	
			Vandalism protection caplocks	✓	
			Wheel chocks		✓

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