



6040

Hydraulic Mining Shovel

Technical Specifications

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

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6040 Hydraulic Mining Shovel Specifications

Diesel Engines – Lesser Regulated

Make and Model	2 × Cat® C32B	
Rated Speed	1,800 min ⁻¹	1,800 rpm
Power – ISO 14396:2002	1541 kW	2,066 hp
Gross Power – J1995:2014	1554 kW	2,084 hp
Net Power – SAE J1349:2011*	1432 kW	1,921 hp
Net Power – ISO 9249:2007**	1538 kW	2,062 hp
No. of Cylinders (each engine)	12	
Bore	145 mm	5.71 in
Stroke	162 mm	6.38 in
Displacement	32.1 L	1,959 in ³
Aspiration	Turbocharged and air-to-air aftercooled	

*Net power tested per SAE J1349 is the power available at the flywheel when the engine is equipped with alternator, cooling, air intake, and exhaust systems, with maximum fan losses.

**Net power tested per ISO 9249 is the power available at the flywheel when the engine is equipped with alternator, cooling, air intake, and exhaust systems, with minimum fan losses.

Diesel Engines – Highly Regulated

Make and Model	2 × Cat® C32B	
Rated Speed	1,800 min ⁻¹	1,800 rpm
Power – ISO 14396	1533 kW	2,056 hp
Gross Power – J1995:2014	1550 kW	2,079 hp
Net Power – SAE J1349:2011*	1428 kW	1,915 hp
Net Power – ISO 9249:2007**	1530 kW	2,052 hp
No. of Cylinders (each engine)	12	
Bore	145 mm	5.71 in
Stroke	162 mm	6.38 in
Displacement	32.1 L	1,959 in ³
Aspiration	Turbocharged and air-to-air aftercooled	

• Meets U.S. EPA Tier 4 Final and EU Stage V emission standards.

*Net power tested per SAE J1349 is the power available at the flywheel when the engine is equipped with alternator, cooling, air intake, and exhaust systems, with maximum fan losses.

**Net power tested per ISO 9249 is the power available at the flywheel when the engine is equipped with alternator, cooling, air intake, and exhaust systems, with minimum fan losses.

Electrical System

System Voltage	24 V
Batteries in Series/Parallel Installation	6 × 210 Ah – 12 V each 630 Ah – 24 V in total

Operating Weights

Face Shovel with TriPower™ Attachment (FS)		
Standard Track Pads	1200 mm	3 ft 11 in
Operating Weight*	410 850 kg	905,769 lb
Ground Pressure	24.5 N/cm ²	35.5 psi
Bucket Payload	40 000 kg	88,185 lb
Backhoe Attachment (BH)		
Standard Track Pads	1200 mm	3 ft 11 in
Operating Weight*	410 780 kg	905,614 lb
Ground Pressure	24.5 N/cm ²	35.5 psi
Bucket Payload	40 000 kg	88,185 lb

*Operating weights include: base machine, front attachment, standard track pads, standard rock bucket, 100% fuel and lubricants.

Service Refill Capacities

Fuel Tank Capacity	2 × 3900 L	2 × 1,030 gal
Hydraulic Oil Tank Capacity	3626 L	958 gal
Total Volume of Hydraulic System	5800 L	1,532 gal
Engine Oil Crankcase	2 × 120 L	2 × 31.7 gal
Engine Oil Expansion Tank (option)	2 × 430 L	2 × 113.6 gal
Engine Coolant	2 × 155 L	2 × 41 gal
Pump Transmission Gearbox including Cooling Circuit	2 × 69 L	2 × 18.2 gal
Pump Pre-Chambers at Pump Transmission Gearbox	2 × 55 L	2 × 14.5 gal
Travel Gearbox Planetary	2 × 90 L	2 × 23.7 gal
Travel Gearbox Spur Gear	2 × 8.5 L	2 × 2.2 gal
Travel Gearbox Brake Chambers	2 × 0.5 L	2 × .13 gal
Grease Tank Capacity	720 L	190 gal

Hydraulic System

Main Pumps	4 × Variable Displacement Piston Pumps
Maximum Oil Flow	4 × 745 L/min 4 × 197 gal/min
Maximum Pressure, Attachment	300 bar 4,351 psi
Maximum Pressure, Travel	350 bar 5,076 psi
Swing Pumps	2 × Reversible Variable Displacement Piston Double Pumps
Maximum Oil Flow	2 × 661 L/min 2 × 175 gal/min
Maximum Pressure	350 bar 5,076 psi

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Hydraulic Oil Cooling

Oil Flow of Cooling Pumps	2 × 798 L/min 2 × 210 gal/min
Number of Fans	2
Diameter of Fans	1524 mm 60 in
Fan Speed	Thermostatically controlled
Cooling System	Fully independent

Swing System

Swing Drives	3 compact planetary transmissions with axial piston motors
Parking Brakes	Wet multiple-disc brake, springloaded/hydraulically released
Maximum Swing Speed	4.8 rpm
Slew Ring	Triple-race roller bearing with sealed internal gearing
Swing Circuit	Closed-loop with speed control

Undercarriage

Travel Speed (2 stages)		
1st Stage – Maximum	1.4 km/h	0.87 mph
2nd Stage – Maximum	2.3 km/h	1.43 mph
Maximum Tractive Force	1767 kN	397,237 lbf
Gradeability of Travel Drives	19.8/35.9%	
Track Pads (each side)	42	
Bottom Rollers (each side)	7	
Support Rollers (each side)	2 plus a skid plate in between	
Travel Drives (each side)	1 planetary transmission with 2 two-stage axial piston motors	
Parking Brake	Wet multiple-disc brake, spring loaded/hydraulically released	

Operator Environment

Operator's Eye Level – Approximately	7.1 m	23 ft 2 in
Internal Dimensions of Cab		
Length	2210 mm	7 ft 3 in
Width	1670 mm	5 ft 5 in
Height	2070 mm	6 ft 9 in
Spectator Sound Power Level (L _{WA}) ISO 6395:2008*	122 dB(A)	
Operator Sound Pressure Level (L _{PA}) ISO 6396:2008*	69 dB(A)	
Operator Protective Guard (Top Guard)	ISO 10262:1998 Level II	

* Measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds. The cab was properly installed and maintained. The measurement was taken with the cab doors and windows closed.

NOTE: The dynamic sound power level and sound pressure level uncertainty is +/- 2 dB(A).

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 4.1 kg (9.03 lb) of refrigerant, which has a CO₂ equivalent of 5.863 t (6,463 U.S. tons) per engine.

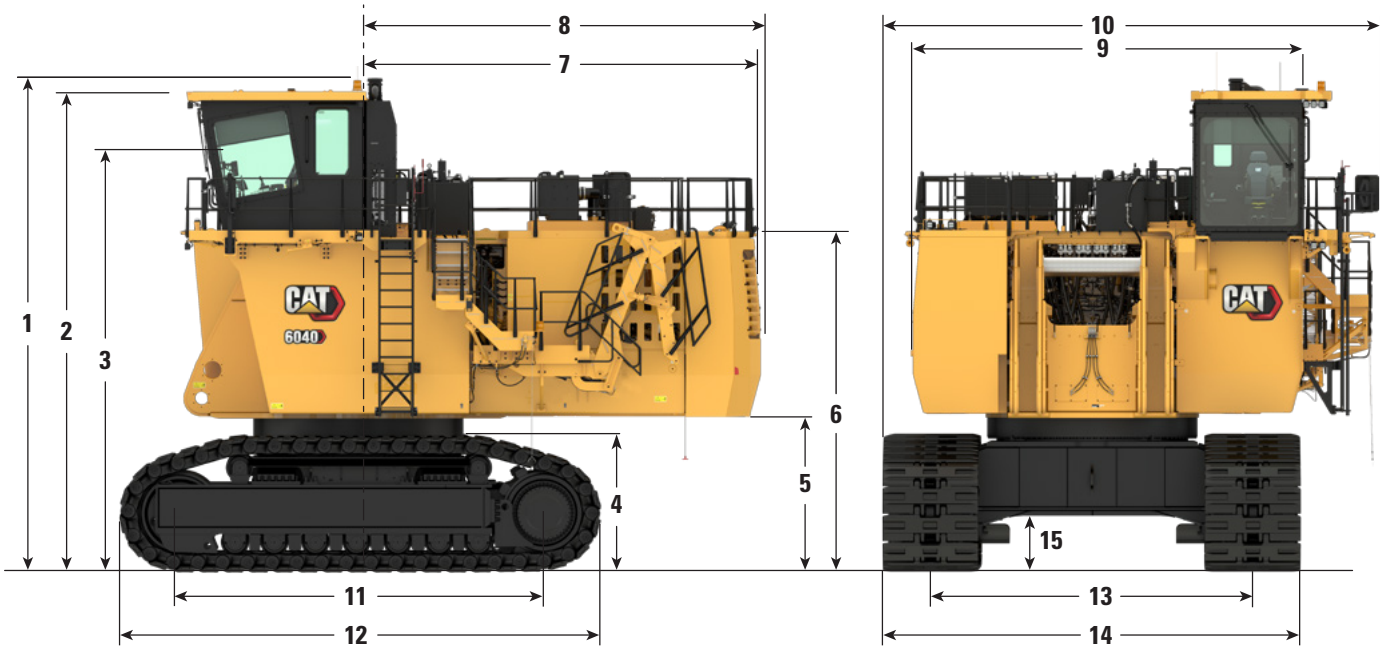
Loading and Hauling System – Pass Match

	785	789	793	794 AC	796 AC
6040	4	5	6	7	8

6040 Hydraulic Mining Shovel Specifications

Dimensions

All dimensions are approximate.

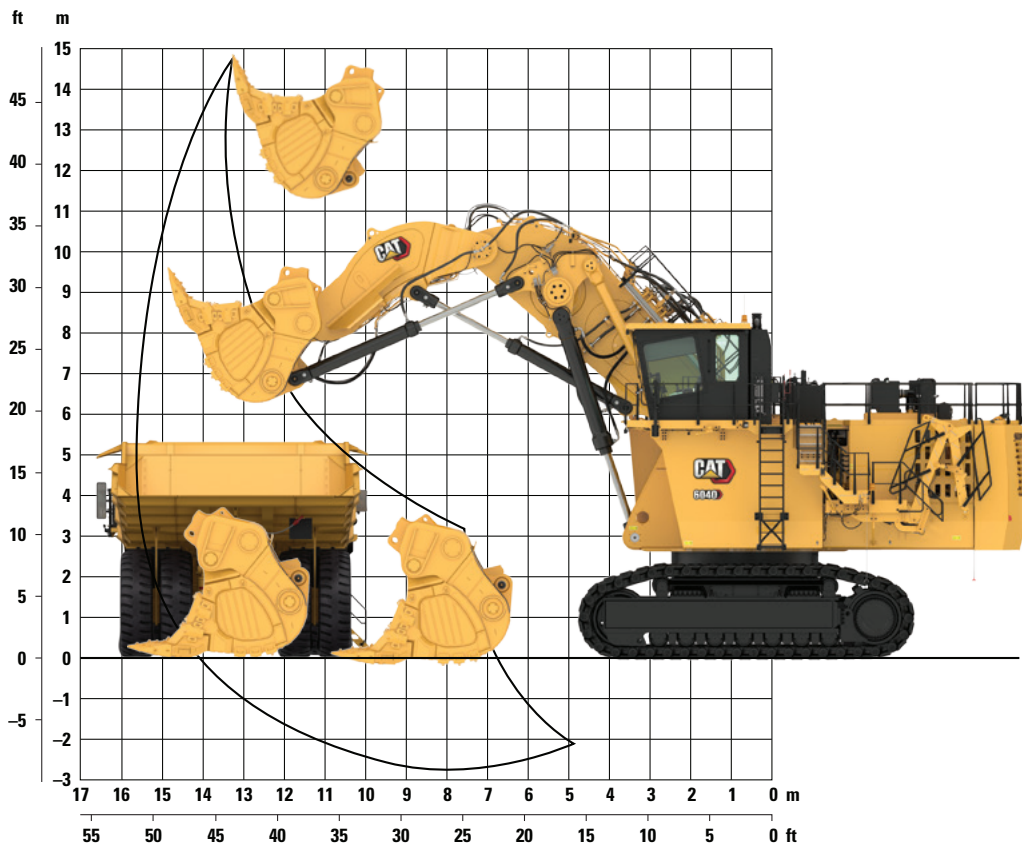


1	Height Overall	8344 mm	27'5"
2	Height to Top Guard	8062 mm	26'5"
3	Operator Eye Level	7052 mm	23'2"
4	Height of Tracks	2250 mm	7'5"
5	Clearance Under Counterweight	2615 mm	8'7"
6	Height to Top of Counterweight	5605 mm	18'5"
7	Tail Overhang	6790 mm	22'3"
8	Tail Swing Radius	7000 mm	23'0"
9	Width of Counterweight	6100 mm	20'0"
10	Width Overall @ 1200 mm [3 ft 11 in] Heavy Duty (HD) track pads	8126 mm	26'8"
11	Length from Sprocket Center to Idler Center	6170 mm	20'3"
12	Crawler Length	8090 mm	26'7"
13	Track Gauge	5395 mm	17'8"
14	Width of Undercarriage @ 1200 mm [3 ft 11 in] HD track pads	6600 mm	21'8"
15	Ground Clearance Under Carbody Frame	935 mm	3'5"

6040 Hydraulic Mining Shovel Specifications

Working Range – TriPower Face Shovel Attachment (FS)

All dimensions are approximate.



Boom	7.3 m	23 ft 11 in
Stick	4.6 m	15 ft 1 in
Digging Forces (ISO)		
Maximum Crowd Force	1791 kN	402,633 lbf
Maximum Crowd Force at Ground Level	1295 kN	291,128 lbf
Maximum Breakout Force	1201 kN	269,996 lbf

Working Range		
Maximum Digging Height	14.9 m	48 ft 11 in
Maximum Digging Reach	15.7 m	51 ft 6 in
Maximum Digging Depth	2.8 m	9 ft 2 in
Maximum Dumping Height	10.0 m	32 ft 8 in
Crowd Distance on Level	5.1 m	16 ft 7 in

Face Shovel Options

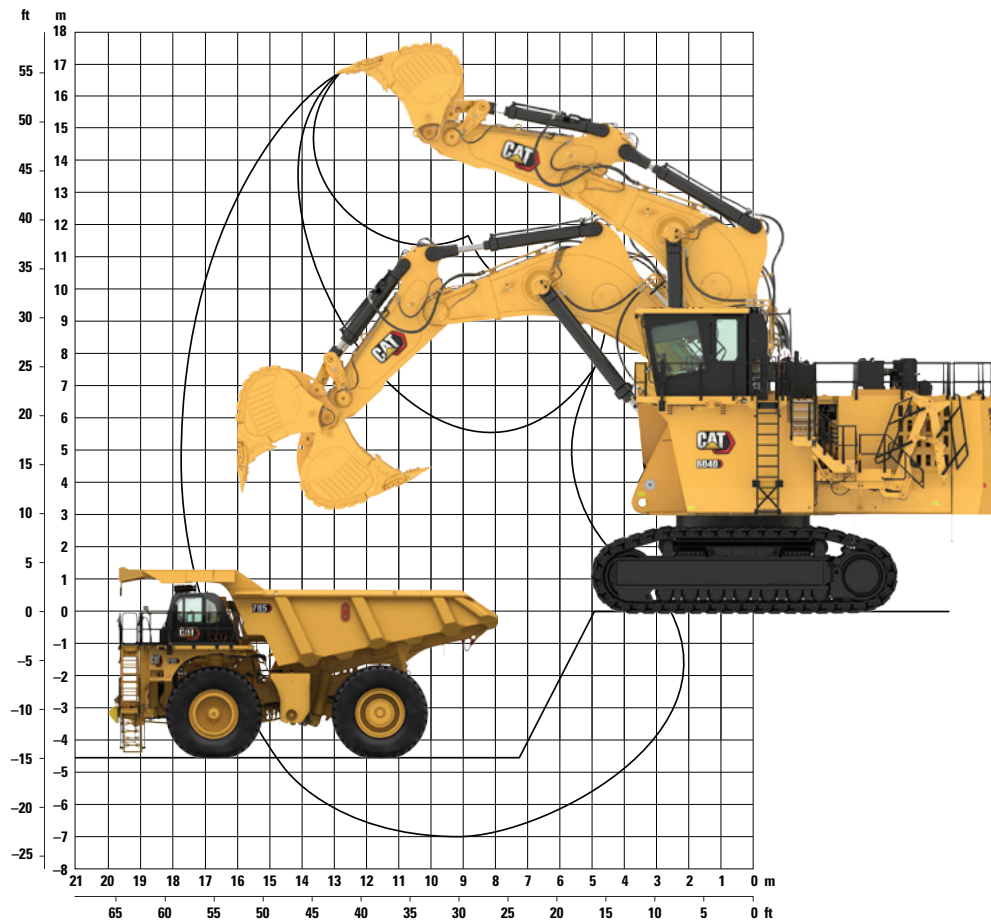
Bucket Classification	Capacity Heaped 2:1 (ISO 7546)		Total Outside Width		Inner Width		Ground Engaging Tools (G.E.T.)	Teeth	Wear Package	Weight (including penetration tips)		Nominal Material Density (loose)	
	m ³	yd ³	mm	in	mm	ft/in	System	Number	Type	kg	lb	t/m ³	lb/yd ³
Heavy Rock	20.0	26.2	4819	190	4300	67.2	CL-1 with W850	6	Extreme Duty – Impact	40 391	89,047	1.9	3,203
Standard Rock	22.0	28.8	4768	187.7	4300	67.2	CL-1 with W850	6	Standard Duty	38 117	84,034	1.8	3,030
	22.0	28.8	4839	190.5	4300	67.2	CL-1 with W850	6	Extreme Duty – Impact	41 147	90,713	1.6	2,781

Additional bucket capacities and wear package options are available on request.

6040 Hydraulic Mining Shovel Specifications

Working Range – Backhoe Attachment (BH)

All dimensions are approximate.



Boom	9.5 m	31 ft 2 in	Working Range	
Stick	4.6 m	15 ft 1 in	Maximum Digging Height	16.8 m 55 ft 1 in
Digging Forces (ISO)			Maximum Digging Reach	17.7 m 58 ft 1 in
Maximum Tearout Force	1018 kN	228,856 lbf	Maximum Digging Depth	7.0 m 23 ft 0 in
Maximum Breakout Force	1123 kN	252,460 lbf		

Backhoe Bucket Options

Bucket Classification	Capacity Heaped 1:1 (ISO 7546)		Total Outside Width		Inner Width		Ground Engaging Tools (G.E.T.)	Teeth	Wear Package	Weight (including penetration tips)		Nominal Material Density @ 100% Fill Factor	
	m ³	yd ³	mm	in	mm	ft/in	System	Number	Type	kg	lb	t/m ³	lb/yd ³
Iron Ore	17.0	22	4220	166.1	3760	148.0	W900R	5	Extreme Duty – Impact	24 082	53,092	2.4	4,045
Heavy Rock	18.0	23.5	4220	166.1	3760	148.0	W900R	5	Extreme Duty – Impact	24 098	53,127	2.2	3,708
	20.0	26.2	4220	166.1	3760	148.0	C95	6	Heavy Duty – Abrasion	24 417	53,830	2.0	3,370
Standard Rock	20.0	26.2	4240	166.9	3800	149.6	C95	6	Extreme Duty – Impact	25 808	56,897	1.9	3,203
	22.0	28.8	4440	174.8	3900	153.5	C95	6	Heavy Duty – Impact	23 093	50,911	1.8	3,033
Light Rock	24.0	31.4	4440	174.8	3900	153.5	C95	6	Standard Duty	23 768	52,399	1.65	2,781

Additional bucket capacities and wear package options are available on request.

6040 Hydraulic Mining Shovel Standard and Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
CAT POWER TRAIN			ELECTRICAL SYSTEM		
2 × Cat C32B engines	✓		6 maintenance-free batteries	✓	
Aftertreatment system (used in Tier 4 Final/Stage V only)	✓		Lockable battery isolator switch	✓	
– Diesel Oxidation Catalyst (DOC)			Lockable starter isolator switch	✓	
– NO _x Reduction System (NRS)			18 LED high-brightness working flood lights	✓	
– Non-Diesel Exhaust Fluid (DEF) solution			11 LED service lights	✓	
Air-to-Air After Cooling (ATAAC)	✓		2 acoustic travel alarms – forward and reverse (power module, oil cooler module)	✓	
Turbocharger	✓		1 air horn (cab riser walkway)	✓	
Hydraulically driven radiator fan	✓		UNDERCARRIAGE		
Electronically controlled fan speed	✓		HD tracks with cast double-grouser track pads	✓	
Micro processed engine management	✓		1200 mm (3 ft 11 in) wide track pads	✓	
Cat Type 4 air filters	✓		1600 mm (5 ft 3 in) wide track pads		✓
Two-stage fuel filter with series filtration	✓		HD fixed axle carrier and load rollers	✓	
High-capacity water separator	✓		HD fixed axle idlers	✓	
Starting aid – automatic ether	✓		Undercarriage guard (belly plate)		✓
Exhaust manifold and turbo heat shields	✓		Automatic hydraulic retarder valve	✓	
Dual 24 V electric starters per engine	✓		Hinged travel motor covers	✓	
Automatic engine idle shut down	✓		Hardened running surfaces of sprockets, idlers, rollers, pad links, teeth contact areas	✓	
Automatic fuel priming	✓		Fully hydraulic self-adjusting track tensioning system with piston accumulator	✓	
HYDRAULICS			AUTOMATIC LUBRICATION SYSTEM		
Hydraulic Optimization	✓		Rectangular grease container, 720 L (190 gal) capacity (fill via service station)	✓	
Operator Assist: Enhanced Motion Control	✓		Lubricated pinion in swing ring	✓	
Cat Hydraulic Hose Assemblies	✓		Grease filters (200 μm)	✓	
Cat Pump managing system with:	✓				
– Electronic load limit control					
– Flow on demand					
– Automatic zero flow regulation					
– Automatic engine RPM reduction					
– Reduced oil flow at high hydraulic oil or engine temperature					
Pressure cut-off for main pumps	✓				
Continuous hydraulic oil filtration	✓				
Cooling of pump transmission gear oil	✓				
Closed loop swing circuit	✓				
Cat quick disconnect pressure testing points	✓				
Full-flow high-pressure filters (100 μm), main pumps	✓				
Full-flow filters (10 μm), return circuit	✓				
Full-flow filters (10 μm), cooling return circuit	✓				
Pressure filters (6 μm), servo circuit	✓				
Pressure filters (40 μm), closed swing circuit	✓				
Transmission oil filters (40 μm)	✓				
Boom float valves (FS and BH)	✓				
Stick float valves (FS)	✓				

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6040 Hydraulic Mining Shovel Standard and Optional Equipment

Standard and Optional Equipment *(continued)*

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

	Standard	Optional		Standard	Optional
OPERATOR ENVIRONMENT			FRONT ATTACHMENT		
Dual hydraulically driven HVAC system	✓		TriPower Face Shovel kinematics:		✓
In-floor window with removable grate	✓		– Horizontal automatic constant-angle bucket guidance		
Pneumatically cushioned and multiadjustable comfort seat with:	✓		– Vertical automatic constant-angle bucket guidance		
– Heating and cooling			– Automatic roll-back limiter to prevent material spillage		
– Lumbar support			– Kinematic assistance to hydraulic forces		
– Two-point safety belt			– Constant boom momentum throughout whole lift arc		
– Head and arm rests			– Crowd force assistance		
– Safety switch for automatic motion shutdown			– Guards for shovel cylinders at FS stick		
Independently adjustable seat consoles with integrated joysticks	✓		Backhoe attachment		✓
Electronic-Hydraulic Servo Control	✓		Frontless base machine (no boom, no stick, no linkage or kinematics)		✓
Elevated full-size trainer seat with two-point safety belt and laptop desk	✓		Internal service access in BH and FS boom	✓	
Three cup holders	✓		Boom and stick thermally stress relieved after welding	✓	
FM/AM radio with USB and Auxiliary (AUX) input	✓		Catwalks with rails at boom (FS and BH)	✓	
Additional fold-away auxiliary seat with two-point safety belt	✓		Wear Package (as per bucket selection)	✓	
Parallel intermittent wiper/washer	✓		CAT TECHNOLOGY		
Roller blinds	✓		Cat [®] Payload		✓
Monitoring System with 254 mm (10 in) color touchscreen	✓		Cat [®] Product Link™ Elite (Cellular)		✓
45° stairway from engine bay to operator cab	✓		Cat [®] Product Link™ Elite Dual Mode (Cellular + Satellite)		✓
Powered 45 access stairway with EH controls and audible alarm plus visual beacon for enhanced safety	✓		Cat Minestar™ Solutions Ready	✓	
Heated mirror on Left Hand (LH) side	✓				
Cat [®] Vision 360 with 254 mm (10 in) HD color technology display	✓				
Level indicators for length and crosswise inclination	✓				
Document storage	✓				

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6040 Hydraulic Mining Shovel Standard and Optional Equipment

Standard and Optional Equipment *(continued)*

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

	Standard	Optional		Standard	Optional
COLD WEATHER OPTIONS			SAFETY AND SECURITY		
Cold Weather Package (400 V, 50 Hz):		✓	Emergency stop switches: 2 in cab,	✓	
– Auxiliary pre-heating system for cab			3 in engine module, 1 at ground level		
– Engine coolant heater			service station, and 1 pull rope accessible		
– Engine oil heater with thermostat			from ground level		
– Hydraulic oil heater with thermostat			Operator Protective Guard (Top Guard)	✓	
– External power source required,			All-around safety glass	✓	
ca 50 kW, 400 V three phase,			Emergency egress ladder	✓	
50 Hz via service arm connector			MISCELLANEOUS		
– Recommended for temperatures below			ISO or ANSI decals	✓	
–10° C (14° F)			Eurasian Conformity (EAC)		✓
Cold Weather Package (208 V, 60 Hz):		✓	Certification – T4 only		
– Auxiliary pre-heating system for cab					
– Engine coolant heater					
– Engine oil heater with thermostat					
– Hydraulic oil heater with thermostat					
– External power source required,					
ca 50 kW, 208 V three phase,					
60 Hz via service arm connector					
– Recommended for temperatures below					
–10° C (14° F)					
SERVICE AND MAINTENANCE					
Engine oil exchange interval – 500 hours	✓				
Engine oil exchange interval extension –		✓			
1,000 hours					
Hydraulic oil exchange interval –	✓				
10,000 hours					
Scheduled Oil Sampling (S·O·S SM) Ports	✓				
Cat Type 4 air filters with pre-cleaner	✓				
dust ejection system					
Retractable ground level service station	✓				
with quick couplings for:					
– Diesel fuel					
– Engine coolant – left/right engines					
– Pump transmission gear oil –					
left/right engines					
– Engine oil – left/right engines					
– Engine oil extension tanks					
– Hydraulic oil					
– Grease					
– Swing transmission gear oil					
Cat battery charging connector	✓				
Indicator lights	✓				
Dirt wiper at swivel	✓				
Cat Electronic Technician service port	✓				

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Replaces AEXQ3125-02
Build Number: 03B
(Global)

