



6040

Hydraulic Mining Shovel

Technical Specifications

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

Table of Contents

Specifications	2
Diesel Engines – Lesser Regulated	2
Diesel Engines – Highly Regulated	2
Electrical System	2
Operating Weights	2
Service Refill Capacities	2
Hydraulic System	2
Hydraulic Oil Cooling	3
Swing System	3
Undercarriage	3
Operator Environment	3
Air Conditioning System	3
Loading and Hauling System – Pass Match	3
Dimensions	4
Working Ranges	
Tri-Power Face Shovel Attachment (FS)	5
Backhoe Attachment (BH)	6
Standard and Optional Equipment	7

6040 Hydraulic Mining Shovel Specifications

Diesel Engines – Lesser Regulated

Make and Model	2 × Cat® C32	
Rated Speed	1,800 min ⁻¹	1,800 rpm
Engine 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	

- Meets China Nonroad Stage III emission standards, equivalent to U.S. EPA Tier 2. Meets China Smoke Category III limits.
- 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® C32	
Rated Speed	1,800 min ⁻¹	1,800 rpm
Engine 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

6040 with TriPower™ Face Shovel Attachment (FS)

Standard Track Pads	1200 mm	3 ft 11 in
Operating Weight*	404 600 kg	891,980 lb
Ground Pressure	24.1 N/cm ²	35.0 psi

6040 with Backhoe Attachment (BH)

Standard Track Pads	1200 mm	3 ft 11 in
Operating Weight*	407 300 kg	897,930 lb
Ground Pressure	24.3 N/cm ²	35.3 psi

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

Service Refill Capacities

Fuel Tank Capacity	7940 L	2,098 gal
Hydraulic Oil Tank Capacity	3626 L	958 gal
Total Volume of Hydraulic Oil	5800 L	1,532 gal
Engine Oil	2 × 120 L	2 × 31.7 gal
Engine Oil Expansion Tank (option)	2 × 618 L	2 × 163.3 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 × 3.6 L	2 × 1 gal
Swing Gearbox	3 × 38 L	3 × 10 gal
Travel Gearbox	2 × 90 L	2 × 23.7 gal
Grease Tank Capacity	710 L	188 gal

Hydraulic System

Main Pumps	4 × variable swash plate pumps	
Maximum Oil Flow	4 × 742 L/min	4 × 196 gal/min
Maximum Pressure, Attachment	300 bar	4,351 psi
Maximum Pressure, Travel	350 bar	5,076 psi
Swing Pumps	4 × variable swash plate pumps	
Maximum Oil Flow	4 × 321 L/min	4 × 85 gal/min
Maximum Pressure	350 bar	5,076 psi

6040 Hydraulic Mining Shovel Specifications

Hydraulic Oil Cooling

Oil Flow of Cooling Pumps	2 × 766 L/min 2 × 202 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 Brake	Wet multiple-disc brake, springloaded/hydraulically released
Maximum Swing Speed	4.7 rpm
Swing Ring	Triple-race roller bearing with sealed internal gearing
Swing Circuit	Closed-loop with torque control

Undercarriage

Travel Speed (two stages)		
1st Stage – Maximum	1.5 km/h	0.93 mph
2nd Stage – Maximum	2.5 km/h	1.55 mph
Maximum Tractive Force	1967 kN	442,199 lbf
Gradeability of Travel Drives	22.3/41% approximate	
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	6.8 m	22 ft 4 in
Internal Dimensions of Cab		
Length	2200 mm	7 ft 3 in
Width	1600 mm	5 ft 3 in
Height	2150 mm	7 ft 1 in
Spectator Sound Power Level (L _{WA}) ISO 6395:2008*	120 dB(A)	
Operator Sound Pressure Level (L _{PA}) ISO 6396:2008*	75 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 3.2 kg (7.05 lb) of refrigerant, which has a CO₂ equivalent of 4.576 t (5.044 U.S. tons) per engine.

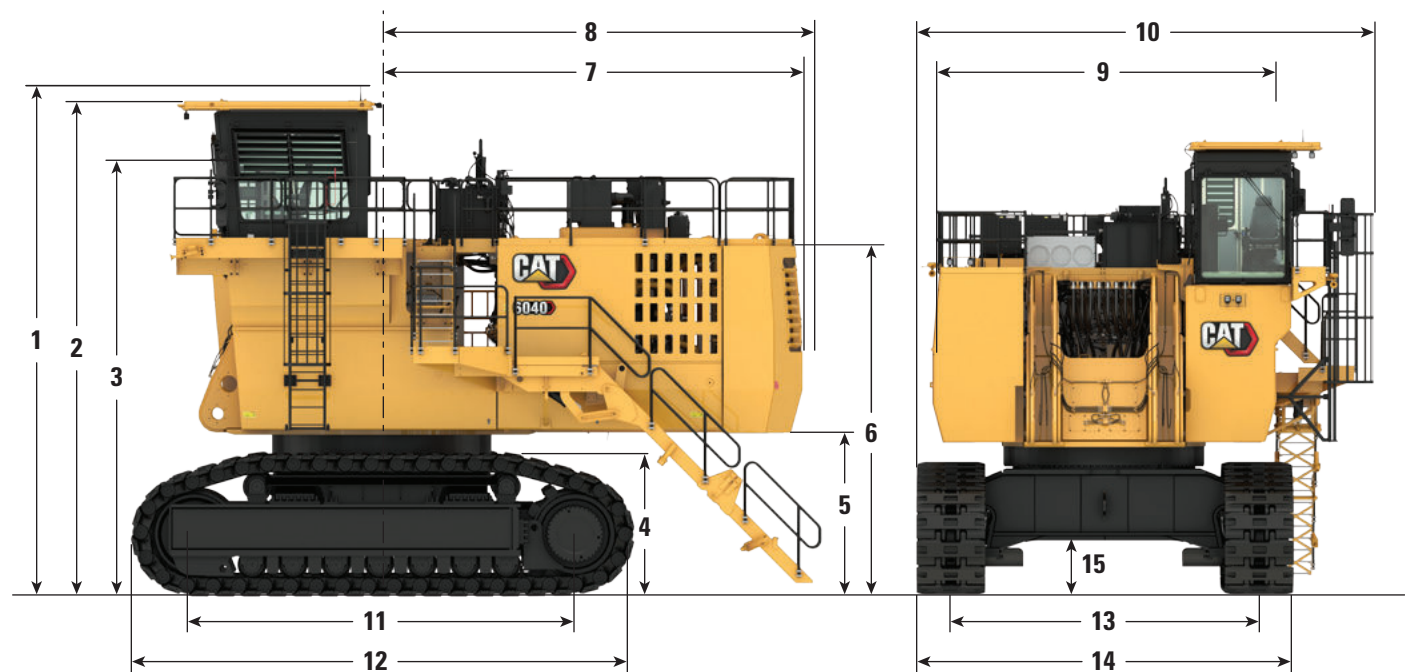
Loading and Hauling System – Pass Match

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

6040 Hydraulic Mining Shovel Specifications

Dimensions

All dimensions are approximate.

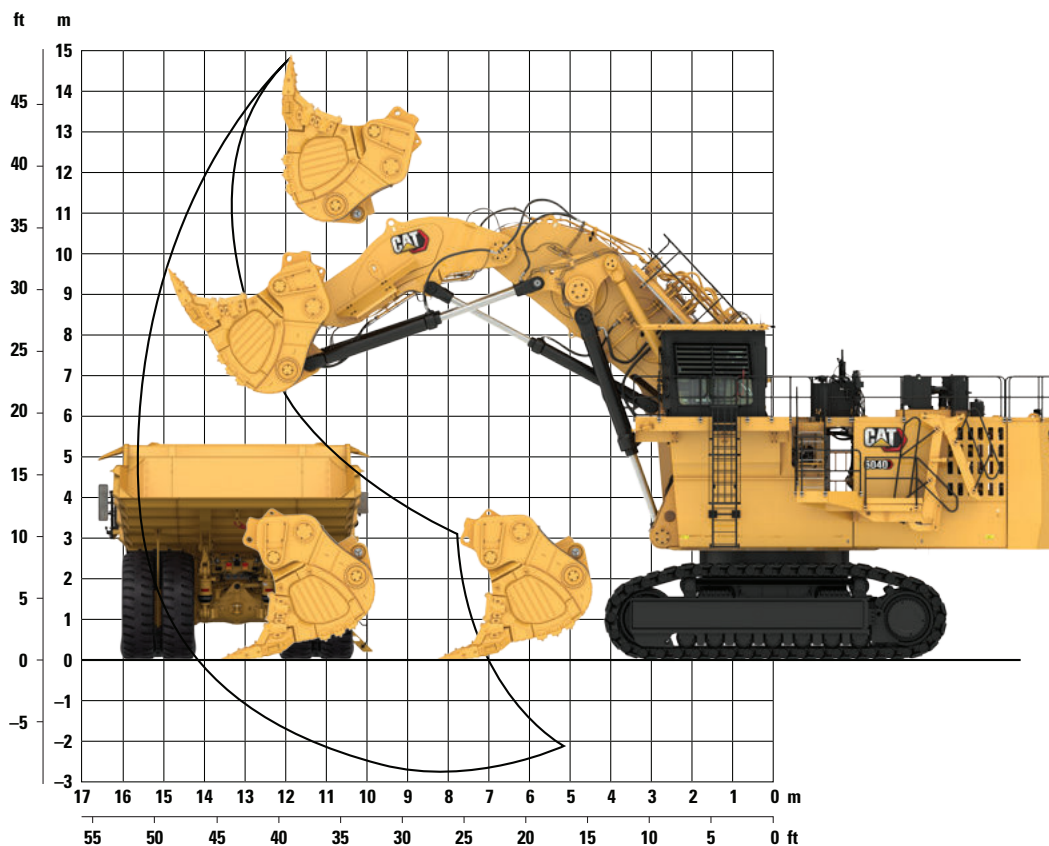


1	Height Overall	8160 mm	27'2"
2	Height to top of Top Guard	7930 mm	26'0"
3	Operator Eye Level	6800 mm	22'4"
4	Height of Tracks	2250 mm	7'5"
5	Clearance Under Counterweight	2615 mm	8'7"
6	Height to Top of Counterweight	5605 mm	18'5"
7	Tail Overhang	6790 mm	22'3"
8	Tail Swing Radius	7000 mm	23'0"
9	Width of Counterweight	6100 mm	20'0"
10	Width Overall @ 1200 mm [3 ft 11 in] standard pads	8050 mm	26'5"
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	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 Option	7.3 m	23 ft 11 in	Working Range	
Stick Option	4.6 m	15 ft 1 in	Maximum Digging Height	14.9 m 48 ft 11 in
Digging Forces (ISO)			Maximum Digging Reach	15.7 m 51 ft 6 in
Maximum Crowd Force	1791 kN	402,633 lbf	Maximum Digging Depth	2.8 m 9 ft 2 in
Maximum Crowd Force at Ground Level	1295 kN	291,128 lbf	Maximum Dumping Height	10.6 m 34 ft 9 in
Maximum Breakout Force	1201 kN	269,996 lbf	Crowd Distance on Level	5.31 m 17 ft 5 in

Face Shovel Options

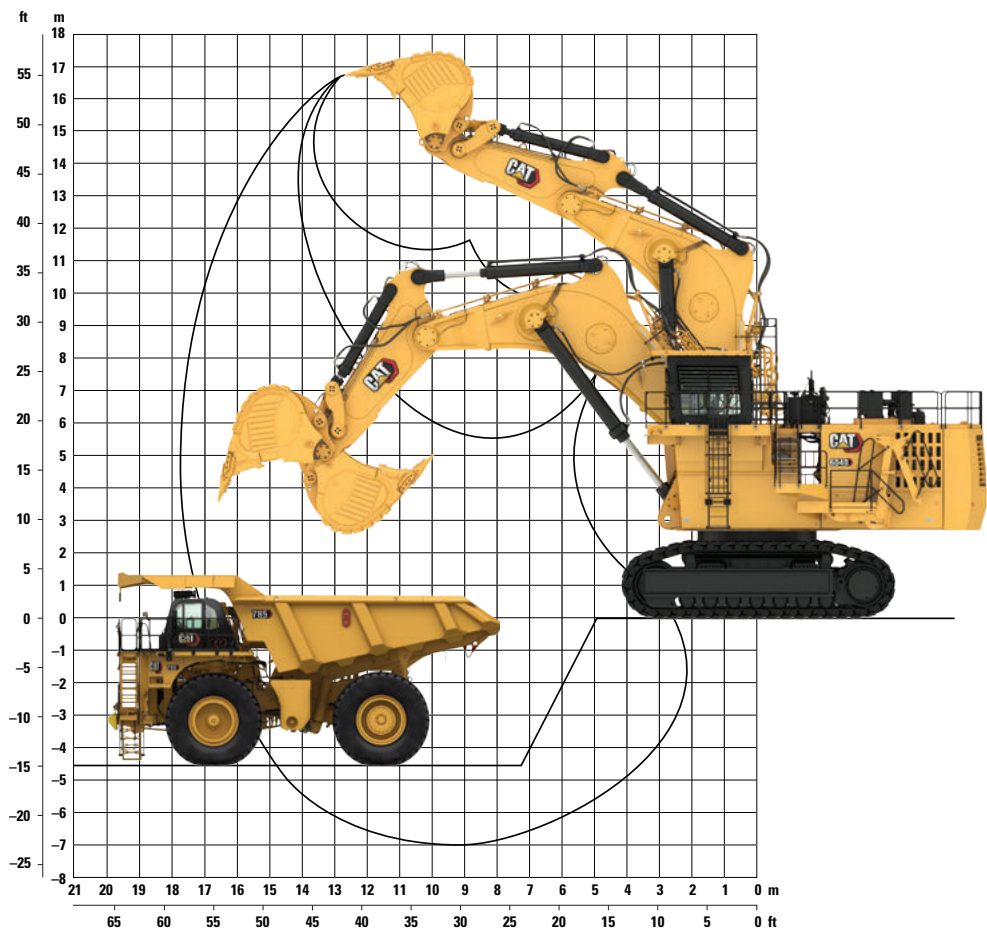
Bucket Type	Heavy Rock and Ore	Heavy Rock	Heavy Rock	Standard Rock	Standard Rock
Capacity Heaped 2:1 (ISO 7546)	15.0 m ³ (19.6 yd ³)	18.0 m ³ (23.5 yd ³)	20.0 m ³ (26.2 yd ³)	22.0 m ³ (28.8 yd ³)	22.0 m ³ (28.8 yd ³)
Total Outside Width	4230 mm (166.5 in)	4230 mm (166.5 in)	4819 mm (190 in)	4768 mm (187.7 in)	4691 mm (184.7 in)
Inner Width	3840 mm (151.2 in)	3840 mm (151.2 in)	4300 mm (67.2 in)	4300 mm (67.2 in)	4300 mm (67.2 in)
G.E.T. System	C110	C110	CL-1 with W850	CL-1 with W850	C110
Number of Teeth	5	6	6	6	6
Wear Package	Extreme Duty – Impact	Extreme Duty – Impact	Extreme Duty – Impact	Standard Duty	Standard Duty
Weight (including penetration tips)	35 551 kg (78,377 lb)	36 290 kg (80,006 lb)	40 391 kg (89,047 lb)	38 117 kg (84,034 lb)	38 513 kg (84,907 lb)
Nominal Material Density (loose)	2.8 t/m ³ (4,720 lb/yd ³)	2.2 t/m ³ (3,700 lb/yd ³)	1.9 t/m ³ (3,203 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)

Additional bucket capacities and wear packages are available upon request.

6040 Hydraulic Mining Shovel Specifications

Working Range – Backhoe Attachment (BH)

All dimensions are approximate.



Boom Option	9.5 m	31 ft 2 in
Stick Option	4.6 m	15 ft 1 in
Digging Forces (ISO)		
Maximum Tearout Force	1018 kN	228,856 lbf
Maximum Breakout Force	1123 kN	252,460 lbf

Working Range		
Maximum Digging Height	16.8 m	55 ft 1 in
Maximum Digging Reach	17.7 m	58 ft 1 in
Maximum Digging Depth	7.0 m	23 ft 0 in

Backhoe Bucket Options

Bucket Type	Heavy Rock	Standard Rock	Heavy Rock	Standard Rock	Light Duty
Capacity Heaped 1:1 (ISO 7451)	18.0 m ³ (23.5 yd ³)	20.0 m ³ (26.2 yd ³)	20.0 m ³ (26.2 yd ³)	22.0 m ³ (28.8 yd ³)	24.0 m ³ (31.4 yd ³)
Total Outside Width	4205 mm (165.6 in)	4240 mm (166.9 in)	4240 mm (166.9 in)	4440 mm (174.8 in)	4440 mm (174.8 in)
Inner Width	3760 mm (148.0 in)	3800 mm (149.6 in)	3800 mm (149.6 in)	3900 mm (153.5 in)	3900 mm (153.5 in)
G.E.T. System	W900R	C95	C95	C95	C95
Number of Teeth	5	6	6	6	6
Wear Package	Extreme Duty – Impact	Extreme Duty – Impact	Heavy Duty – Abrasion	Heavy Duty – Impact	Standard Duty
Weight (including penetration tips)	24 059 kg (53,041 lb)	25 808 kg (56,897 lb)	22 670 kg (49,979 lb)	23 076 kg (50,874 lb)	23 777 kg (54,419 lb)
Nominal Material Density @ 100% Fill Factor	2.2 t/m ³ (3,700 lb/yd ³)	1.9 t/m ³ (3,203 lb/yd ³)	2.0 t/m ³ (3,370 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)	1.65 t/m ³ (2,720 lb/yd ³)

Additional bucket capacities and wear packages are available upon 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 C32 engines	✓		6 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)			14 LED high-brightness working flood lights	✓	
– Non-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	✓		2 electric horns (1 cab module, 1 oil cooler module)	✓	
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		
Pump managing system with:	✓		Rectangular grease container, 710 L (188 gal) capacity (fill via service station)	✓	
– Electronic load limit control			Round grease container, 200 L (53 gal) capacity (insert barrel or fill via service station with additional kit)		✓
– Flow on demand			Lubricated pinion in swing ring	✓	
– Automatic zero flow regulation			Grease filters (200 µm)	✓	
– Automatic engine RPM reduction					
– Reduced oil flow at high hydraulic oil or engine temperature					
Pressure cut-off for main pumps	✓				
Cat Hydraulic Hose assemblies	✓				
Continuous hydraulic oil filtration	✓				
Cooling of pump transmission gear oil	✓				
Closed loop swing circuit	✓				
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)	✓				

(continued on next page)

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		
Single HVAC system	✓		TriPower Face Shovel attachment:		✓
Dual HVAC system		✓	– Horizontal automatic constant-angle bucket guidance		
Auxiliary Cab Heater		✓	– Vertical automatic constant-angle bucket guidance		
Pneumatically cushioned and multiadjustable comfort seat with:	✓		– Automatic roll-back limiter to prevent material spillage		
– Seat heating			– Kinematic assistance to hydraulic forces		
– Lumbar support			– Constant boom momentum throughout whole lift arc		
– Two-point safety belt			– Crowd force assistance		
– Head and arm rests			– Guards for shovel cylinders at FS stick		
– Safety switch for automatic motion shutdown			Backhoe attachment		✓
Independently adjustable seat consoles with integrated joysticks	✓		Frontless base machine (no boom, no stick, no linkage or kinematics)		✓
Electronic-Hydraulic Servo Control	✓		Internal service access in BH and FS boom	✓	
FM/AM radio with USB and AUX input	✓		Boom and stick thermally stress relieved after welding	✓	
Fold-away auxiliary seat with two-point safety belt	✓		Catwalks with rails at boom	✓	
Sliding side window	✓		Wear Package (as per bucket selection)	✓	
Parallel intermittent wiper/washer	✓		CAT TECHNOLOGY		
Roller blinds at all windows	✓		Cat Product Link™ Elite (Cellular)		✓
External sun shields at side and rear windows	✓		Cat Product Link Elite (Satellite)		✓
Cat Board Control system:	✓		Cat Product Link Elite (No radio)		✓
– 305 mm (12 in) color touchscreen			Cat MineStar™ Solutions ready	✓	
– On-screen documentation in .pdf			<i>(continued on next page)</i>		
– On-screen troubleshooting assistance					
– On-screen graphic charts of logged data					
– Fault memory of related conditions					
– USB, LAN (TCP/IP) and CAN BUS interfaces for data export					
Control and Monitoring Platform (CAMP)	✓				
45° stairway from engine bay to operator cab	✓				
Powered 45° access stairway	✓				
2 mirrors on LH side, 1 heated	✓				
Camera Monitoring System 2.0 (right and rear cameras, 254 mm [10 in] HD color technology display, and harnesses)		✓			
Level indicators for length and crosswise inclination	✓				
Document storage	✓				

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: 1 in cab,	✓	
– Auxiliary heating system for cab			3 in engine module, 1 pull rope accessible		
– Fuel blender			from ground level and 1 on service arm		
– Engine coolant heater			Operator Protective Guard (Top Guard)	✓	
– Engine oil heater with thermostat			All-around safety glass	✓	
– Hydraulic oil heater with thermostat			Armored windshield	✓	
– External power source required,			Emergency egress ladder	✓	
ca 50 kW, 400 V three phase, 50 Hz					
– Recommended for temperatures			MISCELLANEOUS		
–10° C (14° F)			ISO or ANSI decals	✓	
Cold Weather Package (208 V, 60 Hz):		✓			
– Auxiliary heating system for cab					
– Fuel blender					
– 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					
– Recommended for temperatures					
–10° C (14° F)					
SERVICE AND MAINTENANCE					
Engine oil exchange interval – 500 hours	✓				
Engine oil exchange interval – 1,000 hours		✓			
Hydraulic oil exchange interval –	✓				
10,000 hours					
S·O·S SM Sampling Ports	✓				
Cat Type 4 air filters with precleaner 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					
– Hydraulic oil					
– Grease					
– Swing transmission gear oil					
– Engine oil extension tanks					
Cat battery charging connector	✓				
Indicator lights	✓				
Dirt wiper at swivel	✓				
Cat Electronic Technician service port	✓				

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

© 2022 Caterpillar
All rights reserved

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

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

AEXQ3125-02 (06-2022)
Replaces AEXQ3125-01
Build Number: 03B
(Global)

