



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® C32	
Rated Speed	1,800 min ⁻¹	1,800 rpm
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
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	400 bar	5,801 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	Three 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	2097 kN	471,260 lbf
Gradeability of Travel Drives	57% approximate	
Track Pads (each side)	42	
Bottom Rollers (each side)	7	
Support Rollers (each side)	Two plus a skid plate in between	
Travel Drives (each side)	One 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.

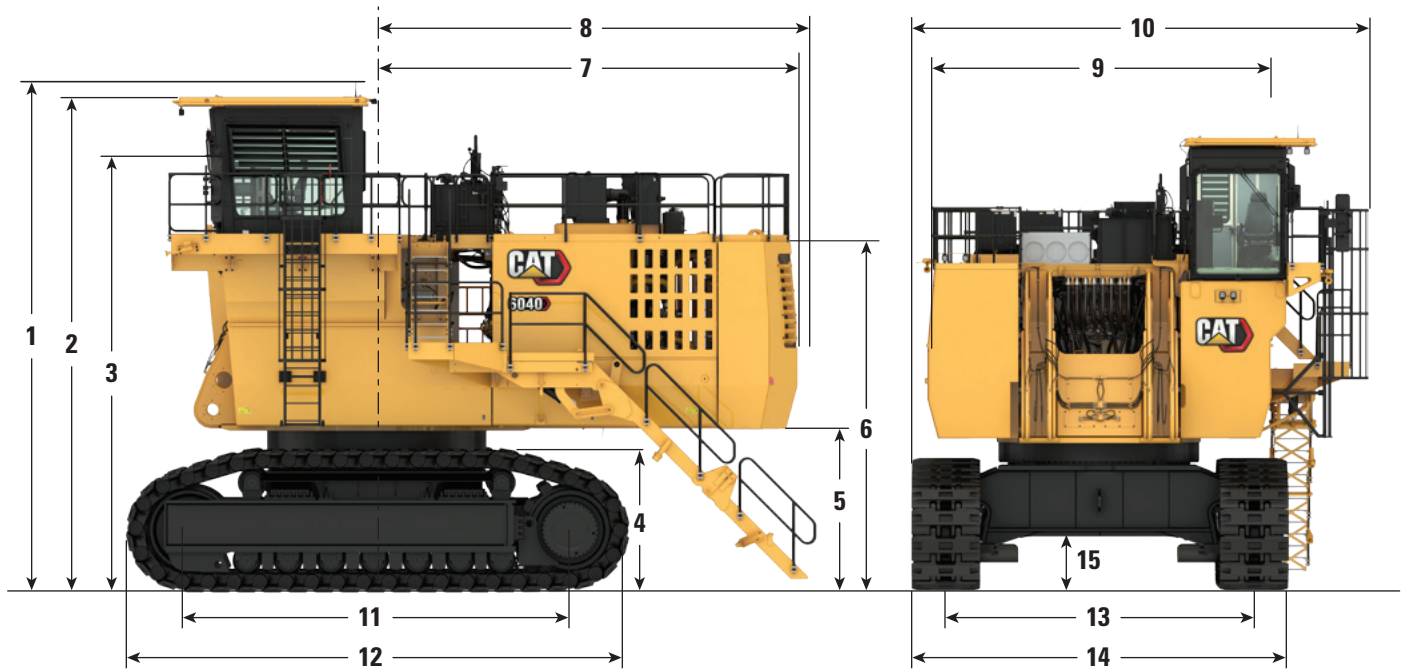
Optimal Pass Match with Cat Mining Trucks

	785	789	793
Cat 6040	4	5	6

6040 Hydraulic Mining Shovel Specifications

Dimensions

All dimensions are approximate.

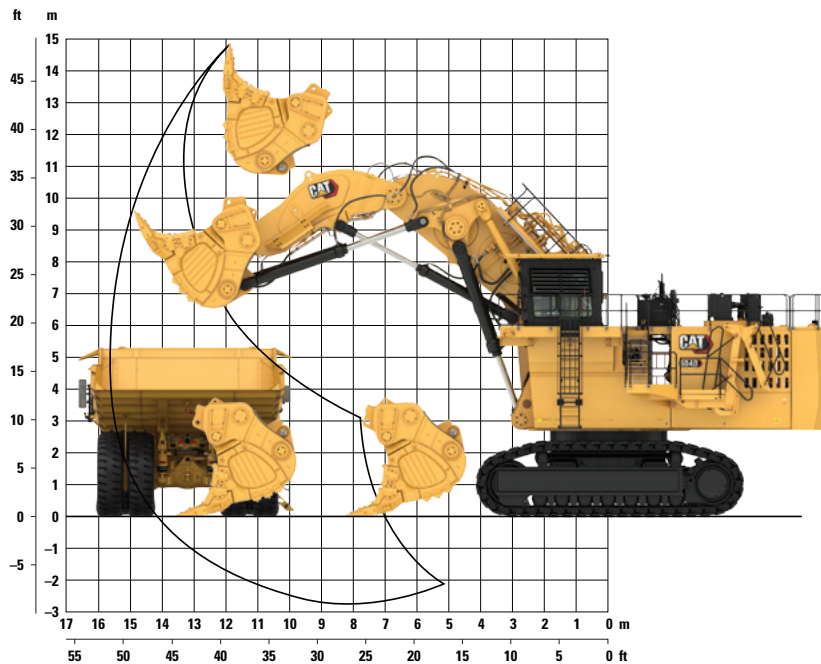


1	Height Overall	8160 mm	27'2"
2	Height Top of Rock Guard	7930 mm	26'0"
3	Operator Eye Level	6800 mm	22'4"
4	Height of Tracks	2250 mm	7'5"
5	Clearance Under Counterweight	2615 mm	8'7"
6	Height to Top of Counterweight	5605 mm	18'5"
7	Tail Overhang	6790 mm	22'3"
8	Tail Swing Radius	7000 mm	23'0"
9	Width of Counterweight	6100 mm	20'0"
10	Width Overall @ 1200 mm (3'11") wide tracks	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.



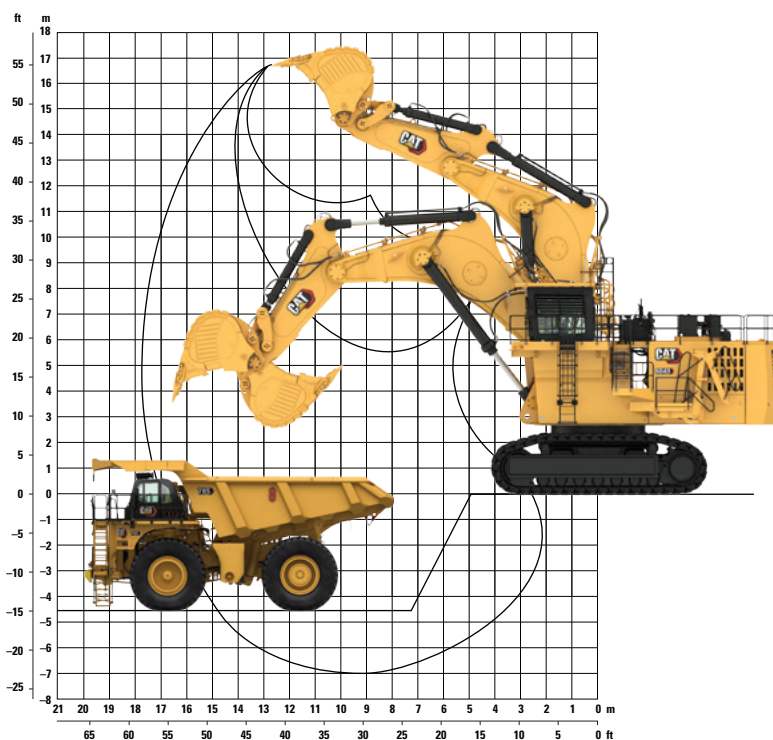
Boom Option	7.3 m (23 ft 11 in)		
Stick Option	4.6 m (15 ft 1 in)		
Digging Forces (ISO)			
Maximum Crowd Force	1791 kN	402,633 lbf	
Maximum Crowd Force at Ground Level	1295 kN	291,128 lbf	
Maximum Breakout Force	1201 kN	269,996 lbf	
Working Range			
Maximum Digging Height	14.9 m	48 ft 11 in	
Maximum Digging Reach	15.7 m	51 ft 6 in	
Maximum Digging Depth	2.8 m	9 ft 2 in	
Maximum Dumping Height	10.6 m	34 ft 9 in	
Crowd Distance on Level	5.31 m	17 ft 5 in	
Face Shovel Options			
Type	Standard Rock Bucket	Heavy Rock Bucket	Standard Rock Bucket
Capacity Heaped 2:1 (ISO 7546)	20.0 m ³ (26.2 yd ³)	20.0 m ³ (26.2 yd ³)	22.0 m ³ (28.8 yd ³)
Total Outside Width	4850 mm (161.7 in)	4700 mm (161.7 in)	4850 mm (154.9 in)
Inner Width	4300 mm (67.2 in)	4300 mm (67.2 in)	4300 mm (67.2 in)
G.E.T. System	CL-1 with W850	CL-1 with W850	CL-1 with W850
Number of Teeth	6	6	6
Wear Package	Extreme Duty	Extreme Duty	Heavy Duty – Impact
Weight (including penetration tips)	40 215 kg (88,659 lb)	38 805 kg (85,550 lb)	37 914 kg (83,586 lb)
Nominal Material Density (loose)	1.9 t/m ³ (3,230 lb/yd ³)	2.0 t/m ³ (3,320 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			
Type	Heavy Rock Bucket	Standard Rock Bucket	Light Duty
Capacity Heaped 1:1 (ISO 7451)	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	3935 mm (154.9 in)	3935 mm (154.9 in)	3935 mm (154.9 in)
Inner Width	1706 mm (67.2 in)	1706 mm (67.2 in)	1706 mm (67.2 in)
G.E.T. System	C95	C95	C95
Number of Teeth	6	6	6
Wear Package	Extreme Duty – Impact	Heavy Duty – Impact	Light Duty
Weight (including penetration tips)	25 846 kg (57,400 lb)	23 277 kg (59,397 lb)	23 786 kg (59,915 lb)
Nominal Material Density @ 100% Fill Factor	1.95 t/m ³ (3,270 lb/yd ³)	1.8 t/m ³ (3,030 lb/yd ³)	1.7 t/m ³ (2,860 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	✓		Six maintenance-free batteries	✓	
Aftertreatment system (used in Tier 4 Final/Stage V only)	✓		Battery isolation relays	✓	
– Diesel Oxidation Catalyst (DOC)			Lockable battery isolator switch	✓	
– NO _x Reduction System (NRS)			Lockable starter isolator switch	✓	
– Non-DEF solution			14 LED high-brightness working flood lights	✓	
Air-to-Air After Cooling (ATAAC)	✓		11 LED service lights	✓	
Turbocharger	✓		Two acoustic travel alarms – forward and reverse (one power module, one 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	✓	
Heavy-duty air filters	✓		1600 mm (5 ft 3 in) wide track pads (Non-HD)		✓
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	✓		Belly plate for additional undercarriage protection		✓
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)		✓
– 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	✓				
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)	✓				

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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		
Single HVAC system	✓		TriPower Face Shovel attachment:		✓
Dual HVAC system		✓	– Horizontal automatic constant-angle bucket guidance		
Pneumatically cushioned and multiadjustable comfort seat with:	✓		– Vertical automatic constant-angle bucket guidance		
– Seat heating			– 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		
Independently adjustable seat consoles with integrated joysticks	✓		– Guards for shovel cylinders at FS stick		
Electronic-Hydraulic Servo Control	✓		Backhoe attachment		✓
FM/AM radio with USB and AUX input	✓		Frontless base machine (no boom, no stick, no linkage or kinematics)		✓
Fold-away auxiliary seat with two-point safety belt	✓		Internal service access in BH and FS boom	✓	
Sliding side window	✓		Boom and stick thermally stress relieved after welding	✓	
Parallel intermittent wiper/washer	✓		Catwalks with rails at boom	✓	
Roller blinds at all windows	✓		Wear Package (as per bucket selection)	✓	
External sun shields at side and rear windows	✓		CAT TECHNOLOGY		
Cat Board Control system:	✓		Cat Product Link™ Elite (Cellular)		✓
– 305 mm (12 in) color touchscreen			Cat Product Link Elite (Satellite)		✓
– On-screen documentation in .pdf			Cat Product Link Elite (No radio)		✓
– On-screen troubleshooting assistance			Cat MineStar™ Solutions ready	✓	
– On-screen graphic charts of logged data					
– Fault memory of related conditions					
– USB, LAN (TCP/IP) and CAN BUS interfaces for data export					
On-board Control and Monitoring Platform (CAMP)	✓				
45° stairway from engine bay to operator cab	✓				
Powered 45° access stairway	✓				
Heated mirror on LH side	✓				
Camera monitoring system (two cameras and additional color 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			SAFETY AND SECURITY		
Standard weather	✓		Emergency stop switches: one in cab, three in engine module, one pull rope accessible from ground level	✓	
Cold Weather Package (400 V, 50 Hz):		✓	Operator Protective Guard (Top Guard)	✓	
– Auxiliary heating system for cab			All-around safety glass	✓	
– Fuel preheater			Armored windshield	✓	
– Engine coolant tank heater			Emergency egress ladder	✓	
– Engine oil heater with thermostat			MISCELLANEOUS		
– Hydraulic oil heater with thermostat			ISO or ANSI decals	✓	
– External power source required, ca 50 kW, 400 V three phase, 50 Hz					
Cold Weather Package (208 V, 60 Hz):		✓			
– Auxiliary heating system for cab					
– Fuel preheater					
– Engine coolant tank heater					
– Engine oil heater with thermostat					
– Hydraulic oil heater with thermostat					
– External power source required, ca 50 kW, 208 V three phase, 60 Hz					
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 for fuel tanks and grease	✓				

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

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