

AC ELECTRIC DRIVE DUMP TRUCK

136 136t AC Electric Drive Dump Truck



TECHNICAL SPECIFICATION

VEHICLE PARAMETER

Drive Mode	4*2 rear axle
Empty Vehicle Weight (EVW)	102t
Rated / Nominal Payload	136t
Distribution of Axle Load	
Empty: Front Axle	51%
Rear Axle	49%
Loaded: Front Axle	34%
Rear Axle	66%
Maximum Speed	64.5km/h
Rated Gradeability	8%
Maximum Gradeability	18%
Braking Distance (in 30km/h)	≤18m

ENGINE

Model	QSK5012V4000C21R
Fuel	Diesel
Number of Cylinders	12
Operating Cycle	4 cycle
Displacement	50.3L/48.8L
Rated Power	(1,398kW) 1,875 HP @ 1,900 rpm
Net Flywheel Power	(1,286 kW) 1,725 HP @ 1,900 rpm
Maximum Torque	7,871N.m@1,500rpm/7,612N.m@1,500rpm
Starting Mode	electric starting
Weight (wet)	6,373kg (14,050lb)/6,428kg (14,171lbs)
Emission	EPA Tire 2/EPA Tire 1
(Net Flywheel Power is the rated power at the engine flywheel minus the average accessory losses. Accessories include fan and charging alternator. Rating(s) represent net engine performance in accordance with ISO3046 or SAE J1995)	

ELECTRIC DRIVE SYSTEM

Alternator	5GTA22
Motorized Wheel	5GEB23
Rated Power	500kW
Ratio	28.8:1
Maximum Speed	65km/h

HYDRAULIC SYSTEM

Brake Control Cabinet	with a diagnostic interface, easy maintenance
Steering	accumulator assisted with twin double acting cylinders provide constant rate steering emergency steering supplied by accumulator automatically
Turning Circle Diameter (SAE) (according to ISO5010)	24.4m(80' 7")
Filtration	In-line replaceable elements
Suction	full-flow, accuracy 100 μ m
Hoist and Steering	in-line, high-pressure.
Hoist	two of dual-acting outboard cylinders, internal cushion valve, over-center damping Hoist time
Power-up in Full Loaded	22 sec
Power-down	6 sec
Float-down Empty	13 sec
Pumps	double pump and engine shaft, coupling connected
Hoist	vane pump with output of 367lpm (97gpm) @1,900rpm pressure 17,200kPa (2,500psi)
Steering and Brake	vane pump with output of 230lpm (61gpm) @1,900rpm pressure 17,200kPa (2,500psi)
System Relief Pressures	System Relief Pressures
Hoist	17,200kPa (2,500psi)
Steering and Brake	21,000kPa (3,046psi)

FRAME

Full welded structure of advanced high-strength low- alloyed steel with integral ROPS supports, Integral fish-bellied longitude grider with variable cross-section, integral gantry, rear hexagon cross members, irregular box tail beam with reasonable stress distribution, advanced anti-bend, torsion resistance and high liability. Applied advanced technology of welding and integral welding stress relief to improve durability of weld and prolong fatigue life.

Plate Material	600MPa 87,023psi high tensile strength steel
Rail Width	203 mm 7.99"
Rail Depth (maximum)	1,472mm 57.95"
Rail Depth (minimum)	340mm 13.4"
Top and Bottom Plate Thickness	38mm 1.5"
Side Plate Thickness	16 mm 0.63"
Drive Axle Mounting	pin and spherical bushing
Drive Axle Alignment	swing link

BRAKING SYSTEM



System meets ISO 3450 standards

Service Brakes	hydraulic-actuated, multiple disc brakes
Front Wheel	single disc, three calipers on a 946 mm 37.2" O.D. disc per wheel.
Rear Wheel	Dual disc, two calipers on a 482.6 mm 19" O.D. disc per wheel.
Parking Brakes	two calipers, spring-applied, hydraulically-released, can hold on $\pm 15\%$ rated grade at maximum gross vehicle weight
Brake Pressure (Maximum)	17,237kPa (2,500psi)
Electric Brakes (Maximum)	1,996kW 2677hp
Emergency Brakes	auto-applied prior to hydraulic system pressure dropping below level
Wheel Brake Locks	switch-activated

ELECTRICAL SYSTEM



Batteries	6*12 V/195Ah
Alternator	24vdt, 260amp
Lighting	24 vdt
Cranking Motors	two / 24 vdt

SUSPENSION



Hydro-pneumatic suspension, Variable rate hydro-pneumatic with rebound control.

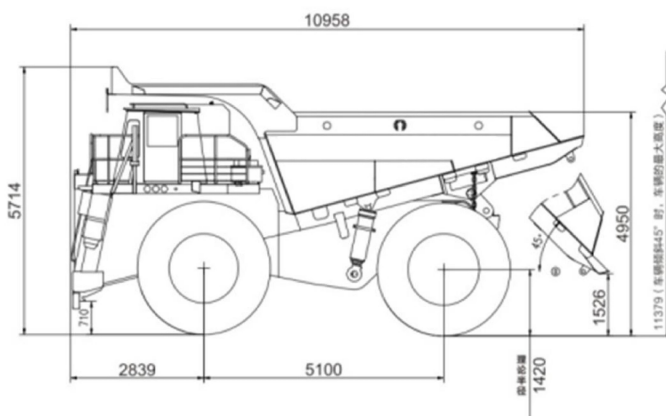
Front Stroke	327.2 mm 12.88"
Rear Stroke	410.3 mm 16.15"
Max. Rear Axle Oscillation	$\pm 6.5^\circ$

TIRES AND RIMS



Standard Tire	33.00R51, rock service, tubeless E-4
Standard Rim	609.6mm x 1295.4mm x 127mm 24" x 51" x 5" Standard five (5) piece rim
Optional Tire	33.00-51, rock service, tubeless E-4

DIMENSION



BODY



All-welded structure flat floor body of high-strength low-alloyed steel includes floor sheet, front sheet, side sheet, canopy. Rock ejectors for rear wheel, body up sling and mud flaps, fender, body down indicator mounts on frame are standard. Optional exhaust mode (side or rear).

Floor Sheet	20 mm 0.79" 1,400MPa 203,053 psi high strength wear steel (two-piece)
Front Sheet	12 mm 0.47" 1,400MPa 203,053 psi high strength wear steel
Side Sheet	8 mm 0.31" 1,400MPa 203,053 psi high strength wear steel
Canopy Sheet	5 mm 0.20" 800MPa 116,030 psi high strength low carbon bainitic steel
Struck (Standard)	48m ³ 62.8yd ³
Heaped (SAE 2:1)	68m ³ 88.9yd ³ (Customized body in accordance with volume weight of material and rate loaded)

COOLING SYSTEM



Exhausting expansion type, double circulation cooling system with two pumps, four of combined fan guards

SERVICE REFILL CAPACITY

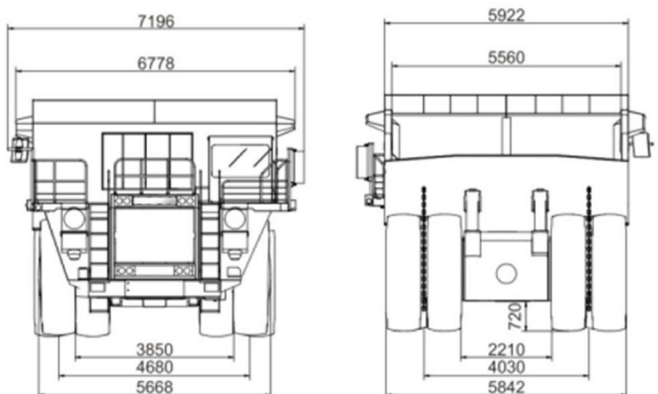


Cooling System	360 L/260L 95 U.S. gal / 68.7 U.S. gal
Crankcase	143 L/129L 37.8 U.S. gal / 34 U.S. gal
Hydraulic System	740 L 195.5 U.S. gal
Electric Wheel	2 x 19 L 2 x 5 U.S. gal
Fuel Tank	1,160 L 306.4 U.S. gal

CAB



Advanced Operator Environment with integral 4-post ROPS/FOPS, anti-rollover protection device, anti-falling protection device and structure are in accordance with requirement of ISO 3471, ISO 3449 and ISO3164. Comfortable and productive environment of full closed cab with adjustable air suspension seat and steering wheel, air condition, power windows, electric wiper and VHMS.



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STANDARD EQUIPMENT ▶

- Air cleaners
- Alternator (24 vol/100A)
- Auto lubrication system - 90lbs
- Batteries (6 x 12V / 195Ah)
- Body over center device
- Brakes: Front: wheel speed disc;
- Rear: dual disc armature speed disc
- Electric start
- Filters, high pressure hydraulic
- Gate valves on hydraulic tank
- G.E. IGBT Control Cabinet
- Mirrors, LH flat and RH rectangular convex
- Mud flaps
- Muffled exhaust, right deck-mounted
- On-board load box
- Quick disconnects (steering and hoist)
- Radiator sight gauge
- Removable power module unit (engine, alternator, blower)
- Retard grids, 9 elements
- Rock ejectors
- fan clutch, Temperature Control
- Fast-Fill Fuel System (in-tank)
- Hubodometer

OPERATOR ENVIRONMENT AND CONTROL:

- All-hydraulic service brakes with emergency auto apply
Battery disconnect switch
- body down indicator
- Brake lock and drive system interlock
- Circuit breakers, 24 volt
- Dynamic retarding with continuous rated grids
- Engine shutdown at ground level
- Hoist interlock
- Horns (electric, center of steering wheel)

- Integral roll-over protection ROPS/FOPS Level 2
- Maintenance & power lock-out
- Parking brake with warning light and speed application protection
- Power steering w/auto emergency steering
- Protective deck rails
- Pump drive guard
- Radiator fan guard
- Seat belts, retractable
- Skid-resistant coating on walkways

STANDARD HIGH VISIBILITY CAB INSTRUMENTATION:

- Alarm System warning lights (red)
 - Charge fault
 - Diesel shutdown
 - System fault
 - Without traction
- Electroless brakes
- Air conditioner HFC 134a
- AM/FM radio, CD player
- Speedometer and digital tachometer
- Dome light
- Engine hourmeter
- Engine shutdown
- Floor mat
- Fuel gauge in cab and on tank
- Fuel low level warning
- Gauges (backlighted)
- Headlight switch
- Heater and defroster (heavy-duty)
- Switch, heat
- High beam
- Indicator lights (amber)
 - engine warning

- Indicator lights (green):
 - traction brakes
 - Service brakes
 - Electric brakes
 - Parking brakes
- Oil pressure gauge (engine)
- Operator seat, adjustable w/air suspension, lumbar support and arm rests
- Passenger seat
- Electric Window
- RS232 interface - PLM
- Starter key switch
- Steering system warning light and buzzer
- Sunvisor (adjustable)
- Tilt and telescoping steering wheel
- Vehicle health monitoring system (VHMS)
- Windshield (tinted)
- Windshield wipers and washer (electric)

LIGHTING:

- Back-up lights (4)
- Brake and retard lights on ceiling of cab
- Clearance lights
- Control cabinet service light
- Dynamic retarding, rear(2)
- Headlights, LED (8)
- Ladder lights
- Manual back-up light, switch and indicator
- Service light in rear axle
- Stop and tail lights (2)
- Turn signals, LED
- Under-hood service lights

OPTIONAL EQUIPMENT ▶



(Optional equipment may change operating weight).

- Wearable board
- XEMC Payload Weighing System-PLM
- Fire extinguisher 9 kg 20 lb
- Fog lights
- Hot starts (coolant, hydraulic tank)
- Centralized filling (water tank, engine, hydraulic device, grease)
- Pivot exhaust (heated body)
- PLM Scoreboard Display (RH and LH)
- Pressurized, cab air system
- Radiator shutters
- Special language decals
- Pressureless Oil device
- Tire monitor
- Blind Spot Detection
- Arctic protection package (suspensions, antifreeze, anti-collision)
- 360 surround view system
- Remote control system

PRODUCT FEATURES

Brake Control System: full hydraulic brake, brake pressure proportional actuated, with multi safety measures, low pressure alarm and automatic implementation of emergency brake, integrated control valve applied, with the features of accurate control, fast response, stable braking, safety, high reliability, convenient maintenance and high standardization.

Steering system: full hydraulic steering, for stable and reliable normal steering, a large capacity accumulator equipped to provide enough energy while the power failure.

Hoist system: dual-acting large flow hoist cylinders, double pump applied for hoist power, down speed control and anti-pulling device equipped for safe, fast and stable hoist

Frame: Full welded structure of advanced high-strength low-alloyed steel with integral ROPS supports, Integral fish-bellied longitude grider with variable cross-section, integral gantry, rear hexagon cross members, irregular box tail beam with reasonable stress distribution, advanced anti-bend, torsion resistance and high liability. Applied advanced technology of welding and integral welding stress relief to improve durability of weld and prolong fatigue life.

Body: All-welded structure bucket type body includes floor sheet, front sheet, side sheet, canopy. Rock ejectors for rear wheel, body up sling and mud flaps, fender, body down indicator mounts on frame are standard. Optional exhaust mode. Body can design according to volume weight of material and rated load.

Electrical: High reliability and intelligence. Applied AC-DC-AC electric drive control system. Rectified to DC through three-phase alternator, converted into AC with inverter, and outputted to AC traction motor of motorized wheel, which drives whole vehicle. When decelerating, the traction motor turns into a generator, which converts kinetic energy into electric energy and consumes it in the braking resistor grid to realize electric braking. Equipped vehicle management system to monitor whole vehicle, Telex system and diesel engine in real time, and provide fault warning or vehicle protection.

