AC ELECTRIC DRIVE DUMP TRUCK

110A 110t AC Electric Drive Dump Truck

TECHNICAL SPECIFICATION

VEHICLE PARAMETER

Drive Mode	4×2 rear axle
Empty Vehicle Weight (EVW)	85t
Rated / Nominal Payload	110t
Distribution of Axle Load	
Empty: Front Axle	54%
Rear Axle	46%
Loaded: Front Axle	34%
Rear Axle	66%
Maximum Speed	50km/h
Rated Gradeability	8%
Maximum Gradeability	20%
Braking Distance (in 30km/h)	≤18m

ENGINE

Model	QST30/KTA38
Fuel	Diesel
Number of Cylinders	12
Operating Cycle	4 cycle
Displacement	30.5L/37.8L
Rated Power	(895Kw) 1,200 HP @ 2,100 rpm
Net Flywheel Power	(840 kW) 1,127 HP @ 2,100 rpm
Maximum Torque	5,086N.m@1,400rpm/4,678N.m@1,300rpm
Starting Mode	Electric Starting
Weight (wet)	3,555kg (7,837lb)/3,950kg (8,708lbs)
Emission	EPA Tire 2/EPA Tire 0

(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	TQFR-783-3H
Motorized Wheel	YQ-350
Rated Power	350kW
Ratio	27.3:1
Maximum Speed	50km/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)	24.6m(80' 8")
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 loaded	20 sec
Power-down	6 sec
Float-down empty	12 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	
Hoist	13,000kPa (1,885psi)
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, gantry, rear tubular cross members tubular 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	210 mm 8.27"
Rail Depth (maximum)	1,470mm 57.87"
Rail Depth (minimum)	310mm 12.2"
Top and Bottom Plate Thickness	32mm 1.26"
Side Plate Thickness	14 mm 0.55"
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

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 ± 15% rated grade at maximum GVW

Brake Pressure (Maximum) ····· 14500kPa (2,103psi)

Electric Brakes (Maximum) ····· 1,400Kw 1,877hp

Emergency Brakes ····· Automatically applied prior to hydraulic system pressure dropping below level

Wheel Brake Locks ····· Switch-activated

ELECTRICAL SYSTEM

Batteries ····· 6 *12 V/195Ah

Alternator ····· 24volt, 150amp

Lighting ····· 24 volt

Cranking Motors ····· two / 24 volt

SUSPENSION

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

Front stroke ····· 314 mm 12.36"

Rear stroke ····· 211 mm 8.31"

Max. rear axle oscillation ····· ± 6.5°

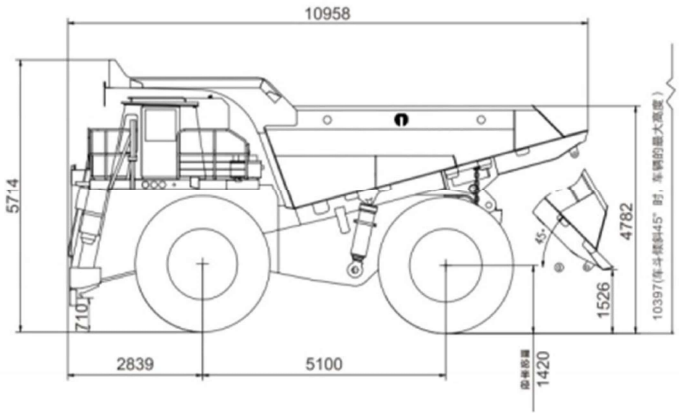
TIRES AND RIMS

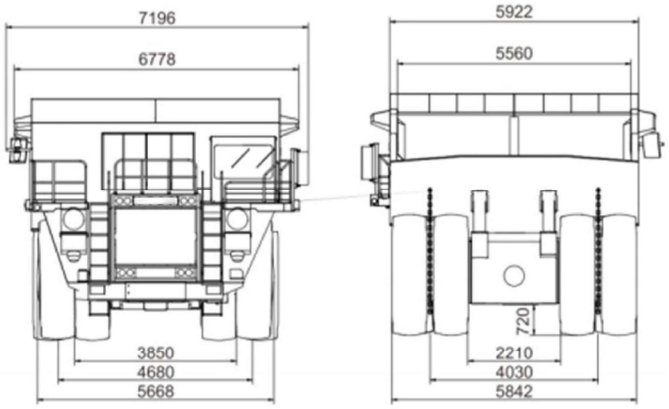
Standard Tire ····· 30.00R51, Rock service, tubeless E-4

Standard Rim ····· 558.8mm x 1295.4mm x 114.3mm 22" x 51" x 4.5" Standard five (5) piece rim

Optional Tire ····· 30.00-51, 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 × 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 volt/150A)
- 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
- 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, 12 elements
- Retarding Controller
- Rock ejectors
- Fast-Fill Fuel System (in-tank)
- Maintenance Center (Water Tank, Engine, Hydraulic Device, Grease)
- 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
  - Charge fault
  - System fault
  - Diesel shutdown
  - Main circuit earth fault
- 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)
- High beam
- Indicator lights (green):
  - Electric brakes
  - Service brakes
  - Parking brakes
  - Traction
- Oil pressure gauge (engine)
- Operator seat, adjustable w/air suspension, lumbar support and arm rests
- Panel lighting (adjustable)
- Passenger seat
- 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)
- Clearance lights
- Control cabinet service light
- Dynamic retarding, rear(2)
- Headlights, LED (8)
- Ladder lights
- Manual back-up light, switch
- Service light in rear axle
- Stop and tail lights (2)
- Turn signals, LED
- Under-hood service lights

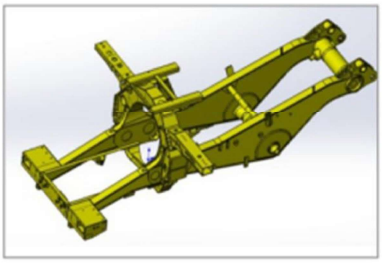
OPTIONAL EQUIPMENT

(Optional equipment may change operating weight).Wear-able board

- XEMC Payload Weighing System-PLM
- Fire extinguisher 9 kg 20 lb
- Fog lights
- Hot starts (oil, coolant, hydraulic tank)
- Pivot exhaust (heated body)
- PLM Scoreboard Display (RH and LH)
- RS232 interface - PLM
- 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
- Charging socket for batteries

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

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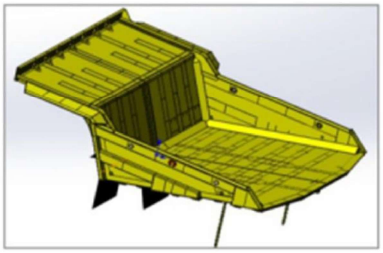

Electrical: High reliability and intelligence. Applied AC-DC-AC electric drive control system. Rectified to DC through three-phase alternator, converted into AC with inverter, and outputted to AC traction motor of motorized wheel, which drives whole vehicle. When decelerating, the traction motor turns 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.