

# HISTORY

## DUMP TRUCK

### Production Development History



#### Year 2021

Held delivery Ceremony of XEMC 120-ton Battery Drive Mining Electric Wheel Dump Truck

#### Year 2020

Exported 110t Dump Truck (SF32001DC) to LGO Mine in Mongolia

#### Year 2020

Self-Developed 110t AC Electric Drive Dump Truck (SF32001AC) successfully

#### Year 2013

Self-developed China's first 220t electric drive tow truck successfully

#### Year 2012

Exported 230t Dump Truck (SF33901) to Pilbara Ore Mine in Australia, and became China's first dump truck enterprise exports to overseas market

#### Year 2011

Self-developed China's first 300t Electric Drive Dump Truck successfully

#### Year 2007

Self-developed China's first 220t Electric Drive Dump Truck successfully

#### Year 2004

Self-developed China's first 100m<sup>3</sup> Electric Drive Water Truck successfully

#### Year 1991

Launched China's first 154T Electric Drive Dump Truck

#### Year 1997

Self-developed China's first 108t Electric Drive Dump Truck successfully



# DC ELECTRIC DRIVE DUMP TRUCK

## 110D 110t DC 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	45km/h
Rated Gradeability	8%
Maximum Gradeability	17.5%
Braking Distance (in 30km/h)	≤ 18m

#### ENGINE



Make and Model	QST30KTA38
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



Alternator	TQFR-783-3H
Motorized wheel	ZQDR-328
Rated power	328kW
Ratio	27.3:1
Maximum Speed	45km/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	Gear pump with output of 367lpm (97gpm) @1,900rpm pressure 17,200kPa (2,500psi)
Steering and brake	Gear 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



# DC ELECTRIC DRIVE DUMP TRUCK

## 110D 110t DC Electric Drive Dump Truck



### 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 v/dt
  - 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
  - Retractable seat belts
  - Skid-resistant coating on walkways
- STANDARD HIGH VISIBILITY CAB INSTRUMENTATION**
- Alarm System warning lights (red)
    - Diesel Maintenance
    - Diesel shutdown
    - High Voltage
    - Low water level
    - Low brake pressure
    - Auto Brake
    - Low Steer Pressure Warning
  - 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 (amber):
    - Start
  - Indicator lights (green)
    - Electric brakes
    - Service brakes
    - Parking brakes
    - RSC
  - Oil pressure gauge (engine)
  - Operator seat, adjustable w/air suspension, lumbar  
support and arm rests
  - Passenger Seat
  - Electric Window
  - 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).

- Wearable 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 SYSTEM
- 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, 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.

**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).

**Electrical:** High reliability and intelligence. Applied AC-DC electric drive control system. Rectified to DC through three-phase alternator, transferred to DC 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.

