

ELECTRIC DRIVE tow truck

220 220T ELECTRIC DRIVE TOW TRUCK



TECHNICAL SPECIFICATION

VEHICLE PARAMETER



Drive Mode	4 x 2 rear axle
Empty Vehicle Weight (EVW)	185t
Maximum Traction Weight	245t
Distribution of Axle Load	
Empty: Front Axle	55%
Rear Axle	45%
Service: Front Axle	20-30%
Rear Axle	70-80%
Maximum Speed	64.5km/h
Rated Gradeability	8%
Maximum Gradeability	16%
Braking Distance (in 30km/h)	≤ 25m

ENGINE



Model	Cummins QSK60
Fuel	diesel
Number of Cylinders	16
Operating Cycle	4 cycle
Displacement	60L
Rated Power	(1,864kW) 2,500hp@1,900rpm
Flywheel Power	(1,761kW) 2,362hp@1,900rpm
Maximum Torque	9,839N · m@1,500rpm
Starting Mode	electric starting
Weight (wet) model	8523kg(18790lbs)
Emission	EPA Tire 2/EPA Tire 0

[Flywheel power refers to the rated power at the flywheel of the engine minus the average power consumed by common accessories. The accessories include fans, charging generators, etc. Rated power in standard condition as per ISO3046 or SAE J1995]

ELECTRIC DRIVE SYSTEM



Alternator	5GTA41A
Electric Wheel	5GEB25B
Rated Power	750kW
Ratio	31.875:1
Maximum Speed	64.5km/h

HYDRAULIC SYSTEM



Brake Control Cabinet	on deck, easy maintenance, with a diagnostic connecting components
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)	30m(98' 5")
Filtration	in-line replaceable elements
Suction	full-flow, accuracy 100 μ m
Lift and Steering	in-line, high-pressure.
Pumps	double pump and engine shaft, coupling connected
Lift	with output of 127lpm(33gpm)@1900rpm pressure 17,200kPa(2,500psi)
Steering and Brake	pressure compensating piston pump 19,000kPa (2,755psi)
System Relief Pressures	
Lift	19,000kPa (2,755psi)
Steering and Brake	22,000kPa (3,190psi)

FRAME



Full welded structure of advanced high-strength low-alloyed steel with integral ROPS supports, Integral fish-bellied longitude girder 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	32 mm 1.26"
Side Plate Thickness	14 mm 0.55"
Drive Axle Mounting	pin and spherical bushing
Drive Axle Alignment	swing link

SERVICE CALIPER

Caliper Type according to truck type in mine site
 Adaptable Truck SF31904, SF31904W, SF33900, SF33901A, SF35100, MT3700, MT4400, MT5500, 830E, 930E, etc.

BRAKING SYSTEM

System meets ISO 3450 standards

Service Brakes hydraulic-actuated, dry plate disc brakes with floating piston, four wheel distribution
 Front Wheel single disc, four calipers on a 1,168 mm 46" O.D. disc per wheel.
 Rear Wheel dual disc, two calipers on a 635 mm 25" O.D. discs per wheel.
 Parking Brakes four calipers per wheel, piston type, spring-applied, hydraulically-released, can hold on $\pm 15\%$ rated grade at maximum gross vehicle weight
 Brake Pressure (maximum) 14500kPa (2103psi)
 Electric Brakes (maximum) 2,908kW 3,899.7hp
 Emergency Brakes auto-applied prior to hydraulic system pressure dropping below level
 Wheel Brake Locks switch-activated

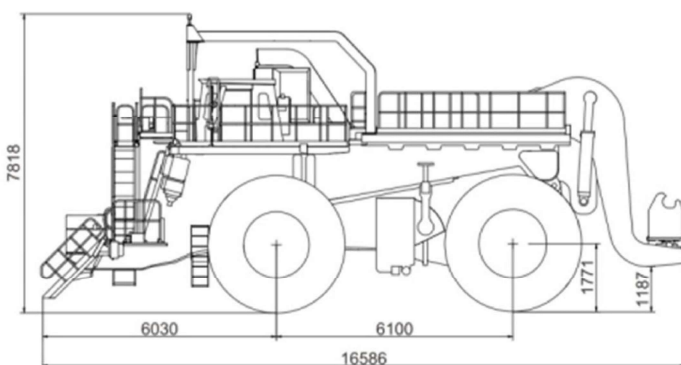
ELECTRICAL SYSTEM

Batteries 4X12V/195Ah- start/2X12V195Ah- control
 Alternator 24volt, 250amp
 Lighting 24 volt
 Cranking Motors two / 24 volt

SUSPENSION

Hydro-pneumatic suspension, hydro-pneumatic with variable rate, integral rebound control.
 Front Stroke 311.5 mm 12.26"
 Rear Stroke 360.5 mm 14.19"
 Max. Rear Axle Oscillation $\pm 6.5^\circ$

DIMENSION



SUBFRAME AND WORKING MECHANISM

Box girder subframe and box working mechanism applied. The movement between the working mechanism and the subframe is controlled by two hoist cylinders installed between the working mechanism and the subframe. Multiple sets of cradles are respectively adapted for different types of tow truck. "V" bayonet cradle is designed for automatically aligned through cross type tilt angle of cradle, which lifts front bar of the failure vehicle.

Plate Material Q345
 Rail Width 450 mm 17.7"
 Rail Depth (maximum) 1,055mm 41.5"
 Rail Depth (minimum) 410mm 16.1"
 Top and Bottom Cover Plate Thickness 25 mm 0.98"
 Side Plate Thickness 40 mm 1.57"

COOLING SYSTEM

Exhaust expansion tank, double circulation cooling system, four of combined fan guard

SERVICE REFILL CAPACITY

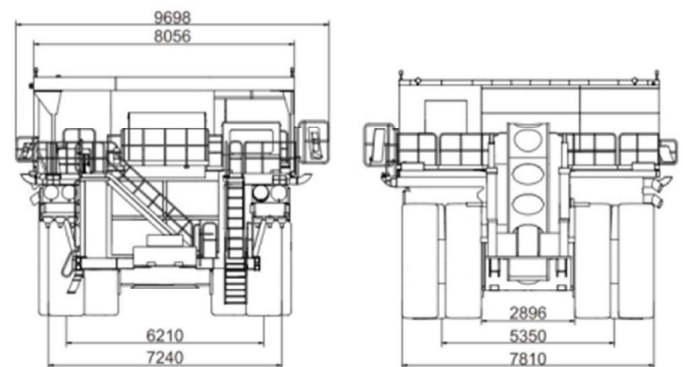
Cooling System 710L 187.6 U.S. gal
 Crankcase 270L 71.3U.S. gal
 Hydraulic System 800 L 211.3 U.S. gal
 Electric Wheel 2 x 40 L 2 x 10.6 U.S. gal
 Fuel Tank 4,400 L 1,162.4 U.S. gal

TIRES AND RIMS

Standard Tire 40.00R57 rock service, tubeless E-4
 Standard rim 736.6mm x 1447.8mm x 152.4mm 29" x 57" x 6"
 standard five (5) piece rim
 Optional Tire 40.00-57, rock service, tubeless E-4

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/250A)
- Auto lubrication system - 90lbs
- Batteries (6 x 12V / 195Ah)
- Batteries charging sockets, 24V
- 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, 12 elements
- Retard controller
- Back-up retarder
- 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
- Brake lock and drive system interlock
- Circuit breakers, 24 volt
- Tilting ladder on Grids
- 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)
 - Low coolant level
 - High coolant temperature
 - Low oil pressure
 - Low brake pressure
 - Low steering pressure
 - Engine shutdown
 - Electroless brakes
 - Without traction
 - Ladder falling
- 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):
 - low level of video
 - RSC
 - low air pressure

- system fault
- electric brake
- service brake
- parking brake
- continuous brake
- Engine warning
- Indicator lights (green):
 - High beam
 - Hydraulic ladder limit
 - Brake test
- 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
- Survivor (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
- 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).

- Fire extinguisher 9 kg 20 lb
- Fog lights
- Hot starts (oil, coolant, hydraulic tank)
- Centralized filling (water tank, engine, hydraulic device, grease)

- Pressure filling, left
- 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
- Lifting device of cable tray



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.

Traction Hydraulic System: remote control unloading, steering, and brake releasing, etc.

Frame: Full welded structure of advanced high-strength low-alloyed steel with integral ROPS supports, Integral fish-bellied longitude girder 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.

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