

ZOOMLION

ZT96A(MT)非公路矿用自卸车

技术规格书

ZT96A(MT) Off-highway Dump Truck

Technical Specification



中联重科股份有限公司矿山机械事业部

Zoomlion Heavy Industry Science & Technology Co., Ltd

Mining Machinery Division



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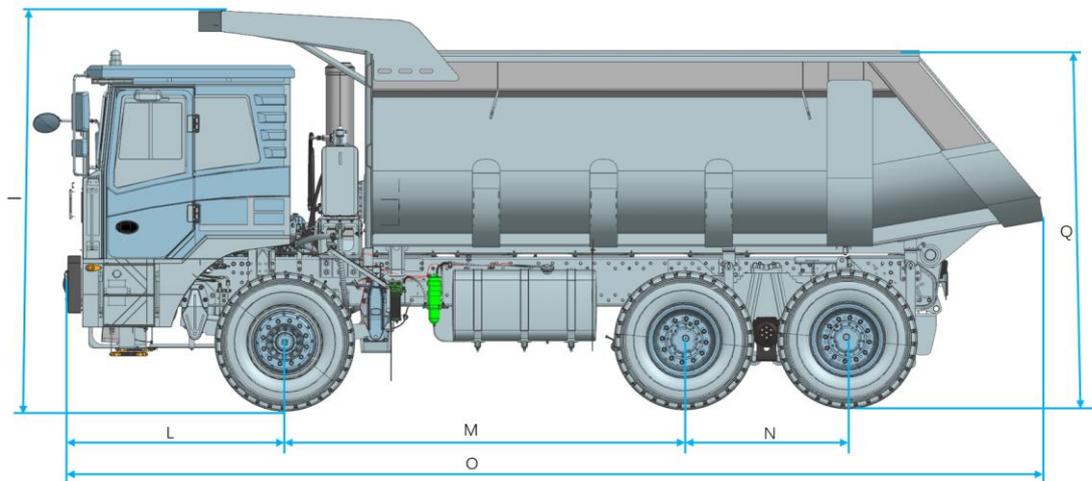
1 概述 Introduction

ZT96A(MT)非公路自卸车是中联重科股份有限公司的主打产品，选用玉柴YC6K480-GT30，排放符合GB20891-2014第三阶段排放标准，采用法士特7DS220型变速箱，采用双层铆接式加强型车架（局部4层）、全液压转向、矿用U型翘尾货厢结构、驱动型式为6×4。

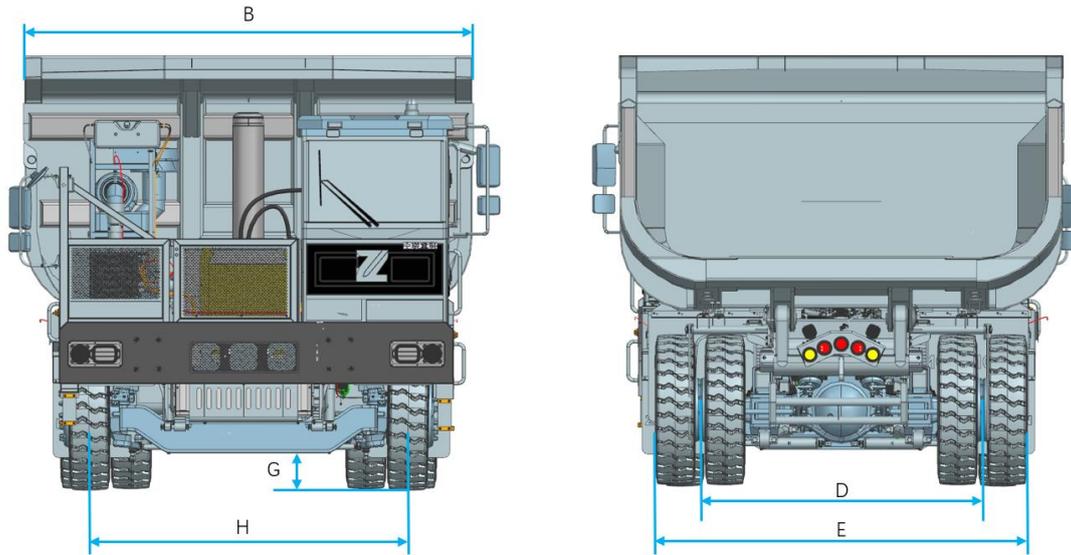
The ZT96A(MT) dump truck is the main products of Zoomlion Heavy Industry Co., Ltd. It is equipped with Yuchai YC6K480-GT30, Fast 7DS220 transmission system, Double-layer riveted reinforced frame (partially four-layer), full hydraulic steering, U-shaped body and turnup afterbody. The emission comply with GB20891-2014 III and the drive type is 6×4.

外形示意图

Outline diagram



I: (空载) 3980mm、L: 2010mm、M: 3850mm、N: 1560mm、O: 9400mm、
Q: 3200



B: 3975mm、E: 3340mm、D: 2530mm、G: 340mm、H: 2940mm

2 主要技术特点 Main technical characteristics

2.1 发动机 Engine

型号: YC6K480-GT30;

Model: YC6K480-GT30;

额定功率: 353kW;

Rated power: 353kW;

最大扭矩: 2200Nm/1100~1500r/min;

Max. Torque/revs: 2200Nm/1100~1500r/min;

型式: 直列、水冷、四冲程、电控高压共轨;

Type: In-line, Water-cooled, Four-stroke, Electronically Controlled High Pressure Common Rail;

排放标准: GB20891-2014 第 III 阶段排放限值要求。

Emission Standards: GB20891-2014 III.

2.2 离合器 Clutch

430 干式膜片陶瓷弹簧拉式离合器, 有较高的摩擦系数, 提高了离合器的转矩容量; 在较高的温度下长时间工作, 热衰减低; 摩擦面片做成块状, 使得飞轮和压盘的表面更多地与空气接触, 提高散热能力; 块状的摩擦面片不易变形, 降低了从动盘翘曲的倾向, 易做到彻底分离。

430mm dry-type diaphragm ceramic spring pull clutch has a higher friction coefficient, which improves the torque capacity of the clutch. The heat attenuation is lower working for a long time at a high temperature. The friction surface is made into a block shape, which makes the pressure plate of flywheel more exposed to the atmosphere, which improves the heat dissipation. The block-shaped friction surface is not easy to deform, which reduces the tendency of the driven plate to warp, and is easy to completely separate.

2.3 变速箱 Gearbox

7 档双中间轴非同步器变速箱, 6 个前进挡, 1 个倒档, 根据露天矿区量身打造的一款产品, 适合于车辆长期处于低速, 大扭矩状态, 超载能力强。

7-speed dual-countershaft non-synchronizer gearbox with six forward gears and one reverse gear. It is a product tailor-made for open-pit mines, which is suitable for the condition of long-term low-speed and high-torque. Therefore, it has strong overload capacity.

2.4 车桥 Axle

选用新型材料, 先进工艺加工而成的桥壳保证整机的可靠运行。总成强度高, 承载能力强, 耐冲击载荷不易变形; 严格的质量管理体系, 主要零部件总成选用国内知名厂家配套件。针对不同使用工况, 量身打造矿用专用工程车桥, 针对性改进、强化, 加强桥壳、齿轮设计, 极大满足用户低速、重载的要求。

The axle housing is made of new materials and processed by advanced technology to ensure the reliable operation of the whole machine. The assembly has high strength, strong load-bearing capacity, and resistance to impact load, which is not easy to deform. According to different operating conditions, special engineering axles for mines are tailored to improve, strengthen, and strengthen the design of axle housings and gears, which greatly meets the low-speed and heavy-duty requirements of users.

2.5 车架 Frame

车架为铆接式车架, 纵梁采用 10+10 的双层叠加强型折弯板 (局部 4 层) 与 6 道横梁铆接而成, 特点是成形工艺性好, 变形设计适应好, 适用于大批量生产, 材料为 610L, 抗疲劳性更好。采用计算机辅助设计, 并进行有限元优化分析。



The frame is a riveted frame, and the longitudinal beam is riveted with 10+10 double-layer superimposed groove-shaped bending plates ((partially four-layer) and 6 cross beams. The main advantages are good forming technology, good deformation design adaptation and suitable for mass production. The material is 610L, with better fatigue resistance. It has adopted the computer- aided design and finite element optimization analysis.

2.6 货厢 Body

货厢为 U 形翘尾无尾门结构，与物料接触的板材全部选用高强度耐磨钢，使用寿命长；配备举升安全支撑，为车辆检修人员提供安全保障。

The cargo box has a U-shaped structure without rear gate, and all the plates in contact with the materials are made of high-strength wear-resistant steel, which has a long service life. Equipped with lifting safety support to provide safety guarantee for vehicle maintenance personnel.

2.7 Suspension

ZT96A(MT)矿用自卸车前悬架采用非独立悬架，车轮定位可靠，行驶稳定、舒适。前悬挂采用钢板弹簧+双作用筒式减震器，行驶平顺，驾驶舒适；中、后车桥通过钢板弹簧和拉杆与车架连接，能够适应承载和路面状况的变化，可靠性高。

The front suspension adopts the non-independent suspension, with reliable wheel positioning, stable and comfortable driving. The front axle also adopts leaf springs +double-acting drum-type shock absorber, which is smooth driving and comfortable. The middle and rear axles are connected to the frame through leaf springs, which can adapt to changes in load and road conditions and have high reliability.

2.8 转向系统 Steering system

ZT96A(MT)矿用自卸车采用全液压动力转向，配合双作用转向油缸，使转向更加轻便灵活，大大减轻司机的操纵强度，带来更好的驾驶体验。转向梯形，大转角时更符合阿克曼几何关系，减少轮胎磨损。

The ZT96A(MT) use of full hydraulic steering, combined with a double-acting steering cylinder, makes the steering lighter and more flexible, greatly reducing the



driver's control intensity and bringing a better driving experience. The steering trapezoid is more in line with the Ackerman geometric relationship at large turning angles to reduce tire wear.

2.9 制动 Braking

ZT96A(MT)矿用自卸车发动机带缸内制动，适应长下坡工况，可减少行车制动的频率，减少刹车片的磨损，延长使用寿命；采用双回路制动、双气室行驻一体鼓式制动，大流量继动阀，响应时间快，提高制动可靠性；缸内制动、双回路制动、大流量继动阀，多者结合，大幅缓解下长坡时摩擦片的发热和磨损，提升整车的行车安全性能。

The engine has an in-cylinder brake, which is suitable for long downhill conditions. This can reduce the frequency of service braking and the wear of brake pads, thereby prolonging the service life. It adopts dual-circuit brake, dual-air chamber line-stop integrated drum brake and large-flow relay valve, which has fast response time and improves the reliability of braking. The combination of in-cylinder braking, dual-circuit braking, large-flow relay valve slow travel greatly relieves the heat and wear of friction linings when going down a long slope, and improves the driving safety of the whole vehicle.

2.10 举升 Lifting

ZT96A(MT)矿用自卸车采用成熟液压举升系统，货厢举升动作通过一个举升阀组，操纵伸缩式多节油缸完成。

Use mature hydraulic lifting system. The lifting action of the cargo box is completed by a lifting valve group to manipulate the telescopic multi-section cylinder.

2.11 轮胎 Tires

配备大直径轮胎，整车离地间隙大，通过性好；轮胎基本无超载，使用寿命长。

Equipped with large-diameter tires. The truck has a large ground clearance for good passability. The tires are basically free of overload and have a long service life.

轮胎 tires	14.00R25-TT
轮辋 Rim	10.0/2.0-25



2.12 驾驶 Cab

偏置窄体驾驶室，视野开阔。各种显示仪表、报警器、照明、控制开关、收音机等配备齐全。司机座椅为可调减振座椅。配备电动风档雨刷及清洗器、冷暖空调。驾驶室采用加厚的钢板与橡塑海绵组成的复合式底板结构，隔音降噪，且可防轮胎爆炸，保障驾驶员的生命安全。

Offset narrow-body cab with a wide field of vision. Various display instruments, alarms, lightings, control switches, radios, etc. are fully equipped. The driver's seat is an adjustable damping seat. Equipped with electric windshield wipers and washer, heating and cooling air-conditioning. The cab adopts a composite floor structure composed of thickened steel plate and rubber-plastic sponge, which has sound insulation and noise reduction, and can prevent tire explosions and protect the life of the driver.

2.13 动力系统 Power system

发动机技术先进，高效节能，成熟滤清器，油浴式滤清器成本低，排气系统管路短，优化设计，排气背压小；电控散热风扇，风量大，功耗低，整车热负荷能力强；供油系统三级过滤，充分保护发动机及高压共轨喷射系统。

The engine technology is advanced, energy-efficient and energy saving. Mature filter with low cost of oil bath filter. the exhaust system has short pipeline, uses optimized design and realizes small exhaust back pressure. The electric control air fan has large air volume and low power consumption. The whole vehicle has large heat load capacity. The fuel supply system sue three-stage filtration function to fully protect the engine and high-pressure common rail injection system.

2.14 照明系统 Lighting system

照明系统由前大灯、转向灯、轮廓灯、停车灯、倒车灯、维修灯等组成。照明与警示灯的位置合理，满足各种天气环境下作业时的照明与警示要求。控制和工作电压为 DC 24V。

The lighting system is composed of headlights, contour lights, parking lights, reversing lights, maintenance lights, etc.; the lighting and warning lights are located in a reasonable position to meet the lighting and warning requirements when working in various weather environments. The control and the working voltage are



DC 24V.

2.15 免润滑技术 Lubrication-free technology

ZT96A(MT)矿用自卸车采用免润滑轴承技术,减少保养时间,降低维修成本。

Adopting lubrication-free technology, which reduces maintenance time and cost.

2.16 安全装置 Safety device

驾驶室配备三点式座椅安全带、逃生锤、逃生窗;防滑行走走台、符合标准的护栏、倒车警告等。

The cab is equipped with a three-point seat belt, an escape hammer, and an escape window, Anti-skid, walking platform, standard guardrail, reversing warning, etc.

2.17 其他 Other

人性化设计的扶手,上下车方便。偏置的驾驶室,检修发动机接近性好。挡泥板设计合理,防止泥水甩在底盘附件上。

The humanized design of the handrail makes it easy to get on and off the truck. The off-side cab provides good accessibility to the engine for maintenance. The mudguard is designed reasonably to prevent muddy water from being thrown on the chassis accessories.

2.18 随机备件及工具 On-board spare parts and tools

配备一套随机工具。

Equipped with a set of on-board tools.

2.19 颜色 Color

主体色调:星耀灰、极光绿、砂砾灰。Color: Star gray, aurora green, gravel gray.

3 主要技术参数 Main technical parameters

车辆型号 Model	ZT96A(MT)
驱动形式 Drive form	6×4
整备质量 (kg) Curb Weight(kg)	30000
额定载质量 (kg) Rated Payload(kg)	60000



总桥荷 (t) Total Axle Load(t)	96	
空载整车外形尺寸 (mm) Overall dimension(mm)	空载: 9400×3975×3980	
轴距 (mm) Wheelbase(mm)	3850+1560	
最小转弯半径 (m) Min. Turning Radius(m)	12	
最大爬坡能力 (%) Max. Gradeability(%)	33	
最小离地间隙 (mm) Min Ground Clearance(mm)	340	
最高时速 (km/h) Max. Speed(km/h)	37	
排放标准 Emission Standard	GB20891-2014 第三阶段排放标准 GB20891-2014 III	
桥荷 Axle Load	26t+35t+35t	
轮胎 Tires	14.00R25	
车箱内部尺寸(m) Internal body dimension (m)	6420×3680×1600	
车厢容积 (m ³) Body Capacity (m ³)	平装 Flat Load	30
	2: 1 堆装 SAE 2:1	36

4 标准配置表 Standard Configuration Table

系统 System	部件 Part	参数及要求 Parameters and requirements	生产厂家 Brand
车身 Cab	驾驶室 Cab	偏置单边矿用窄体驾驶室 Offset unilateral mine narrow-body cab	
		机械式减振座椅 Mechanical damping seat	

空调 Air condition	空调 Air condition	冷暖空调 Cooling-Heating air condition		
动力 Power	发动机 Engine	型号 Model	YC6K480-GT30	玉柴 Yuchai
		发动机排量 Engine capacity	12.155 (L)	
		额定功率 Rated power	353 (kW)	
		最大扭矩/转速 Max. torque	2200/(1100-1500)(N·m/rpm)	
进气 Air intake	空滤器 Air filter	油浴式空气滤清器 Oil-bath type air filter		
燃油 Fuel	油箱 Fuel tank	容积 600L 铝合金材质 Cubage 600L Aluminum alloy		
传动 Transmission	离合器 Clutch	430 拉式离合器 (陶瓷) 430 pull ceramic clutch		伊顿 Eaton
	变速箱 Gearbox	7DS220		法士特 Fast
	传动轴 Transmission shift	单根高精度传动轴 Single high precision transmission shaft		
	桥荷 Total Axle Load(t)	96t		中联 Zoomlion
悬挂 Suspension	悬架 Suspension	钢板弹簧平衡悬架 leaf spring balance suspension		
转向 Steering	转向 Steering	全液压转向 Full hydraulic power steering		伊顿 Eaton
车架 Frame	车架 Frame	直槽铆接双层大梁 (10+10) 610L Straight groove riveted double girder(10+10) 610L		

电器 Electrical	低压电源 Low voltage Power supply	单线制 24V, 负极搭铁 A single-wire 24V, anode iron	
	蓄电池 storage battery	2 块 180Ah 免维护 2 *180 Ah maintenance-free	
	照明 Lighting	整车 LED 灯 LED	
制动 Braking	气管路接头 Connector	VOSS 密封接头 VOSS seal joint	
	制动 Braking	双回路制动、大流量继动阀、缸内制动、驻车制动 Dual circuit braking, in-cylinder braking,exhaust braking	
车厢 Body	材质及厚度 Material and thickness (mm)	前板、侧板、底板、后门板 NM450, 其余 Q690D; 底 14mm, 侧板、后门板 12mm, 前板 8mm。 Base, Side, rear door, front panel: NM450 , other, Q690D ; Base panel 14, side and rear panels 12, front panel 8.	
	货厢形式 Form	矿用 U 型斗、无尾门 U shape, without rear door	
举升 Lifting	油缸 Hydro-cylinder	179 多节前举 179 Multi-section front lifting	

5 选装配置表 Optional Configuration Table

序号 Number	选装配置 Optional configuration	备注 Remark
1	货箱加热 Exhaust heated cargo box	
2	寒区套件 (冷却液加热、发动机进气加热、燃油预热加热) Cold Zone Kit (Coolant heating, engine intake heating, fuel preheating heating)	



3	冷启动系统 Cold starting-up system	
4	制动喷淋系统 Braking spray system	
5	驾驶室空气燃油加热系统 Air-fuel heating system in cab	
6	半自动干粉灭火系统 Semi-automatic powder extinguishing system	
7	称重系统 Weighting System	
8	高压接近报警器 High voltage proximity alarm	
9	双腔燃油箱 Double cavity fuel tank	
10	倒车影像 Rear view camera	
11	右置驾驶室 Right cab	
12	定制化货厢 Customized body	
13	14.00R25 备胎 14.00R25 Spare tire	
14	打石器 Stone releaser	
15	消声器 Muffler	
<p>注释：选配装置可根据实际需求新增。 Note: Optional configuration in the contract according to the actual situation specific agreement</p>		

6 运输方案 Transportation plan

- 1、可用平板车将整车拖运至目的地，板车平板高度 $\leq 0.9\text{m}$ ，长度要求 $\geq 12\text{m}$ ；
It can be hauled to the destination with a flatbed truck, the truck' flat should be less higher than 0.9m, the truck' flat should be longer than 12m.

参数 Parameter	总重 Weight	宽 Width	长 Length	高 Height
单位 Unit	t	mm	mm	mm
ZT96A(MT)	30	3975	9400	3980

2、可驾驶前往目的地 It can drive to the destination.



ZOOMLION

中联重科股份有限公司矿山机械事业部

Zoomlion Heavy Industry Science & Technology Co., Ltd

Mining Machinery Division

地址：湖南省长沙市望城区腾飞路 997 号中联重科望城工业园

Address: Zoomlion Wangcheng Industrial Park, No. 997, Section 2,
Tengfei Road, Wangcheng District, Changsha City, Hunan Province

网址：<http://www.zoomlion.com>

Website: <http://www.zoomlion.com>

客服热线：400-800-0157

Tel: 400-800-0157

邮编：410013

Post code: 410013

