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# XDA45U 铰接式自卸车

## XDA45U ARTICULATED DUMP TRUCK



- 额定载重 Payload (kg) : 41000
- 额定功率 Rated Power (kW/rpm) : 390/1600
- 最大爬坡度 Max Grade ability (%) : 45



# 总体概述

## GENERAL DESCRIPTION

XDA45U 铰接式自卸车可广泛应用于矿山、水利、港口及建筑等领域，该机动力强劲，通过性好，运输效率高，使用范围较广，在环境温度  $-25^{\circ}\text{C} \sim 40^{\circ}\text{C}$  的情况下能实现满负荷连续作业，整机满足欧五排放标准。



XDA45U Articulated Dump Truck is designed for use in mining, quarry, water conservation, harbour, brown field and construction sites. It has a powerful drivetrain, superior hauling performance, excellent manoeuvrability and efficiency making it suitable for the wide range of applications. The product is designed to run continuously in an operating environment from  $-25^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  and meets Euro V emission standard.

# 设备亮点及特点

## EQUIPMENT HIGHLIGHTS AND FEATURES

### ● 节能环保

#### Energy Saving and Environmentally Friendly

原装进口MTU发动机，动力强劲，低排放，低噪音，大大减少对环境的危害。与同级别产品对比拥有强大的牵引力、保证设备快速高效工作，提升设备通过性。坚固耐用、油耗低，可满足多种工况需求。久经考验、坚固耐用的部件和精密的制造工艺，使得该系列产品拥有更高的可靠性和高效性。

Powered by an MTU engine that has high power, low emissions and low noise, which minimizes the environmental footprint. Compared with products of the same size class, it has more powerful traction force, higher working efficiency and enhanced roading ability; in addition, it's durable, robust and excels in multiple operating environments. Extensively tested systems and components as well as precise manufacturing techniques contribute to higher reliability and higher productivity value for this class of equipment.



## ● 高效回报 Highly Efficient Returns

原装国际知名品牌液压系统，配合高品质液压元件，采用泵控液压系统和负载敏感转向系统，各系统间独立运行，提升了系统的稳定性和故障排查的便捷性，保证高效率作业。

Utilises a hydraulic system from a globally established OEM and high-quality hydraulic elements. Advanced hydraulic system controls with variable displacement pumps and load sensing steering system ensure independent operation of each system, which not only improves system stability but also makes it convenient for trouble shooting, ensuring highly efficient equipment operation.

## ● 关键核心技术 Key Core Technology

XDA45U铰接式自卸车突破多项核心技术，主要有：

- 1、整车全地形悬架及自适应控制技术；
- 2、智能分级制动控制与两级转向技术；
- 3、大负荷减振缓冲控制技术；
- 4、智能化人机交互及诊断技术；
- 5、关键结构件疲劳寿命提升技术。

XDA45U Articulated Dump Truck has many major breakthrough technologies as follows:

1. Whole vehicle all-terrain suspension and adaptive traction control technology;
2. Highly responsive retarding and braking controls;
3. High hoist capacity with cushioning technology;
4. Intelligent man-machine interface and diagnostic technology;
5. Enhanced fatigue life optimisation of critical structural parts.

## ● 可靠耐用 Reliable and Durable

应用了关键结构件焊接应力与变形仿真技术，准确预测在复杂结构件焊接过程中引起的变形和残余应力，优化焊接工艺。进行疲劳寿命分析预测技术研究，建立徐工专有的结构件焊接疲劳寿命分析方法，提升关键结构件生命周期。研究结构件应力消除技术，综合应用振动时效去应力，降低残余应力，大幅提升产品使用寿命。

Utilising simulation technology of welding stress and deformation, we can precisely predict distortion and residual stresses that may occur during the welding process of complicated structural components and parts, allowing optimised welding techniques. Fatigue life analysis and prediction technology with XCMG exclusive methodology for structural components and parts, maximises the life span of crucial structural parts. Post-manufacturing residual stress elimination technology and methods greatly improves service life of products.



## ● 智能管控 Intelligent Management and Control

基于智能化及信息化技术，开发专用的整机智能监控系统，随时对车辆运行状况和相关数据进行记录，针对影响行车安全的非规范操作或故障，实现智能限档限速；通过GPS数据传输和定位技术，实现远程数据监控；全面收集车辆运行数据，并进行详细的数据处理、分析和存储，用于指导智能化程序的开发。根据铰接式自卸车的结构特点，制定独特的控制逻辑，自主编程，并与发动机及变速箱的主程序进行对接，实现整机特殊工况下的智能限速或停机。

GPS data transmission and positioning technology enables remote data monitoring capacity for analysis of the operating machine and worksite. Intelligent systems monitor the overall machine, real time recording its running state and related data, applying speed and gear limiting technologies to help prevent damaging or unsafe conditions. Integration with engine and transmission software enables control logic to automatically stop the machine under certain operating conditions with the appropriate machine options installed and activated.

## ● 安全舒适 Safety and Comfortable

人体工程学设计驾驶室，符合ISO防倾翻/防落物标准的ROPS&FOPS驾驶室，空间宽敞，视野开阔，配置了舒适安全的可调气悬浮式座椅。驾驶室和机罩均为可翻转设计，维修方便高效。

The operator's cab is designed according to ergonomic engineering guidelines. ROPS & FOPS are in accordance with ISO safety operation standards. The cab has a large interior space and a wide angle of view as well as a safe, comfortable and adjustable air-suspending seat. Both the cab and the engine hood can be tilted to provide access for convenient for maintenance.





# 产品关键配置情况

## KEY CONFIGURATIONS

### ● 动力系统 Power System

发动机

制造商：德国Benz

型号：OM471

额定功率：390 kW/1600 rpm

最大扭矩：2600 Nm/1300 rpm

型式：6缸水冷，增压中冷，多点电子喷射柴油发动机

Engine

Manufacturer: Germany Benz

Model: OM471

Rated power: 390 kW/1600rpm

Max. Torque: 2600 Nm/1300 rpm

Pattern: 6-cylinder water cooling, turbo charging with inter-cooling, multi-point electronic injection diesel engine



### ● 车架 Machine Structures

车架由铰接体、前车架及后车架组成。铰接体允许后车架相对于前车架自由摆动和旋转，保证全部驱动轮良好的地面接触，从而提供出色的机动能力和稳定的高速运输能力。铰接体采焊接方式。前后车架采用优质低合金高强度钢制造，主要采用焊接工艺。重要焊缝100%经超声波探伤。采用计算机辅助设计，并进行有限元优化分析。

The structures consist of the articulating hitch, front frame and rear frame. The articulated hitch allows the rear frame to make free swing and rotary movements in relation to the front frame, ensuring that all drive wheels are in full contact with ground, which generates outstanding mobility and stable high-speed hauling capacity. The articulated hitch, front frames and rear frames are made of high-quality low-alloy high-strength steel, manufactured with advanced welding technology. Crucial welding seams have 100% ultrasonic weld inspection. The frames are developed using computer assistant design and finite element analysis.





## ● 传动系统 Transmission System

变速箱

型号: Allison 4800

档位: 7个前进档, 1个倒档

最大输出扭矩: 20000Nm

分动箱: Kessler W4408

车桥: 重型 Kessler 行星轮边减速器和轮间差速锁控制

Transmission

Model: Allison 4800

Gear: 7 forward gears and 1 reverse gear

Max. output torque: 20,000Nm

Transfer box: Kessler W4408

Axle: heavy duty, Kessler; Planet hub reduction gear and inter-axle differential lock control



## ● 货厢 Dump Body

货厢采用全焊接结构, 由高强度HB400耐磨钢板制造, 坚固耐用; 倾卸角度大, 倾卸离地间隙大, 装载高度低, 极利于物料的快速装卸。

平底尾翘式, 岩石型, 安装橡胶减震块。

The dump body is a fully welded structure, made of high-strength HB400 anti-wear steel plate for rigidity and durability. A large angle when fully raised, significant ground clearance and low loading height are favourable traits for quick loading and dumping.

It has flat bottom with an angled departure plane to the rear for better payload retention and smoother payload flow during dumping. The body is mounted on multiple rubber cushioning blocks for optimum weight distribution.

## ● 悬架系统 Suspension System

油气悬挂与A型架结合, 保证车辆具有良好的车辆稳定性与越野性能; XDA45U铰接车的悬架结构能够改善恶劣路面对整车的冲击, 提高整车的平顺性及操纵稳定性。

Hydro-pneumatic suspension with A-frame support ensures vehicle stability and off-road performance; the suspension structure absorbs the impact on the vehicle caused by harsh road conditions, allowing it to run smoothly and stably.



## ● 转向 Steering

进口变量柱塞泵提供转向油源，流量放大式液压转向，方向盘路感较好、转向响应精度高、转向平稳。

The Hydraulic Metering Unit sourced from a globally renowned supplier, offers amplified oil flow for steering movement. It provides good steering feel, with precise steering response and smooth steering movement.

## ● 制动 Brake

行车制动

XDA45U采用全液压油冷式湿盘式制动系统，该系统确保了车辆的高制动性能和长使用寿命，即使在泥泞的路面，仍保证车辆具有良好的制动性。通过利用强劲的发动机缓行器用来在下坡时控制稳定的速度，在弯道或十字路口前降速，降低了行车制动器的使用，确保了低运营成本和安全运输。

驻车制动：弹簧加载，气压释放。

Service brake

XDA45U Series dump truck adopts full hydraulic oil-cooled wet disc brake system, which guarantees excellent braking performance and a long service life; even on muddy roads, it still shows good braking performance. The strong engine retarder consistently provides high retarding power to maintain a stable speed through corners, before a crossing or on a downward slope, reducing the application of service brakes, lowering operating costs and guarantees operator and site safety.

Parking brake: spring loaded and pressure released.

## ● 举升 Hoist

货厢举升动作通过一个举升阀组，操纵两个单级双作用、伸缩式油缸完成。

Truck body is lifted through two single-stage cylinders controlled by one valve group.

## ● 轮胎 Tyre

轮胎：29.5R25无内胎全钢子午线轮胎

轮辋：25-25.00/3.5

Tyre: 29.5R25 tubeless all-steel radial tyre

Rim: 25-25.00/3.5

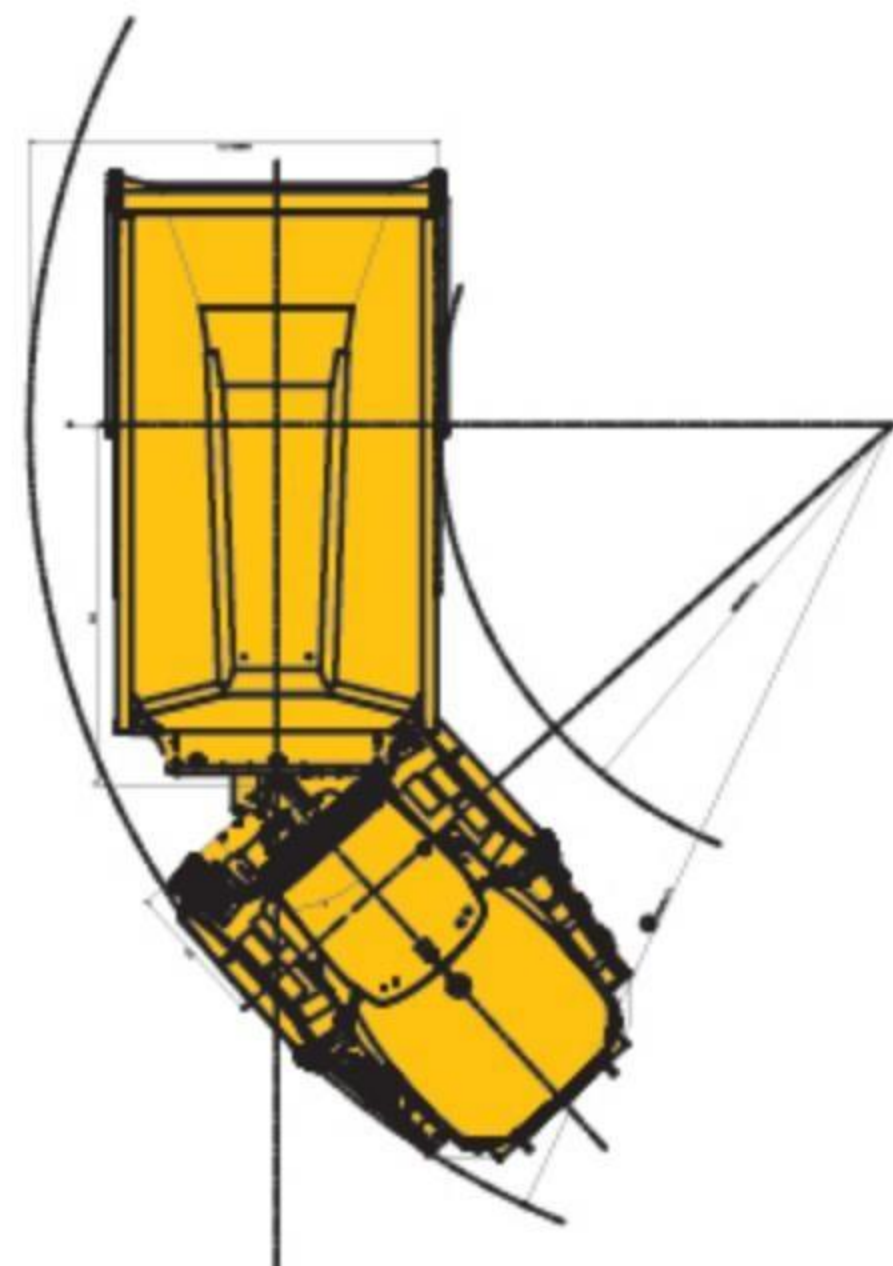
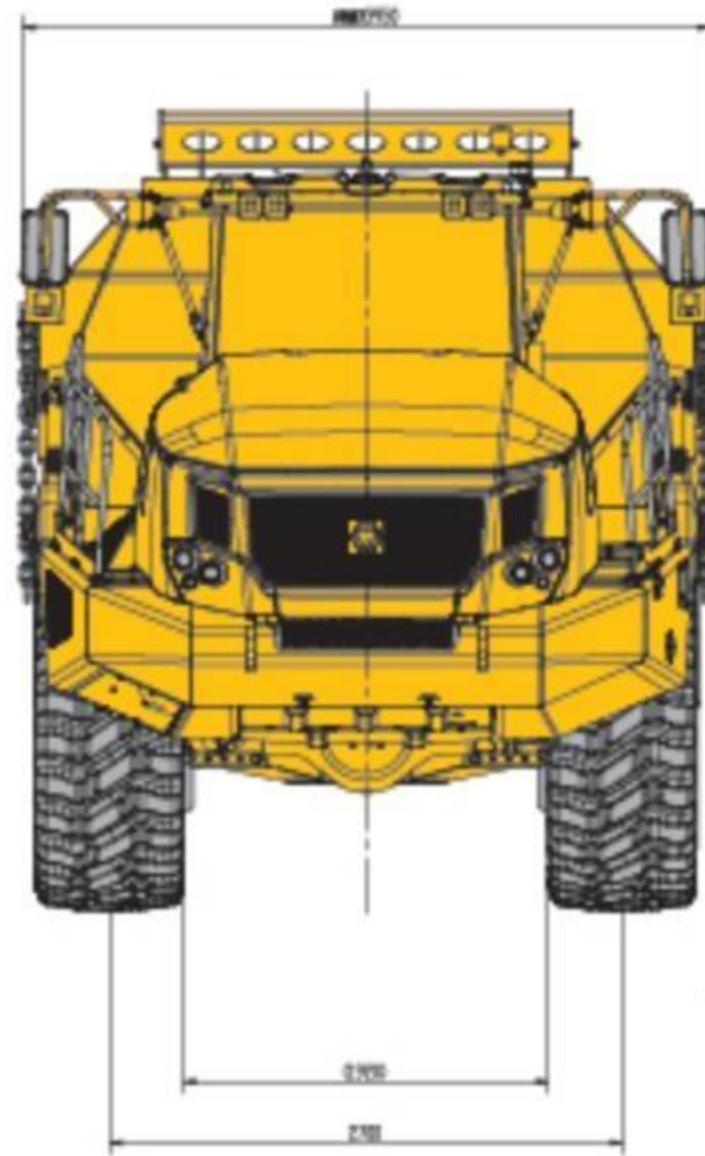
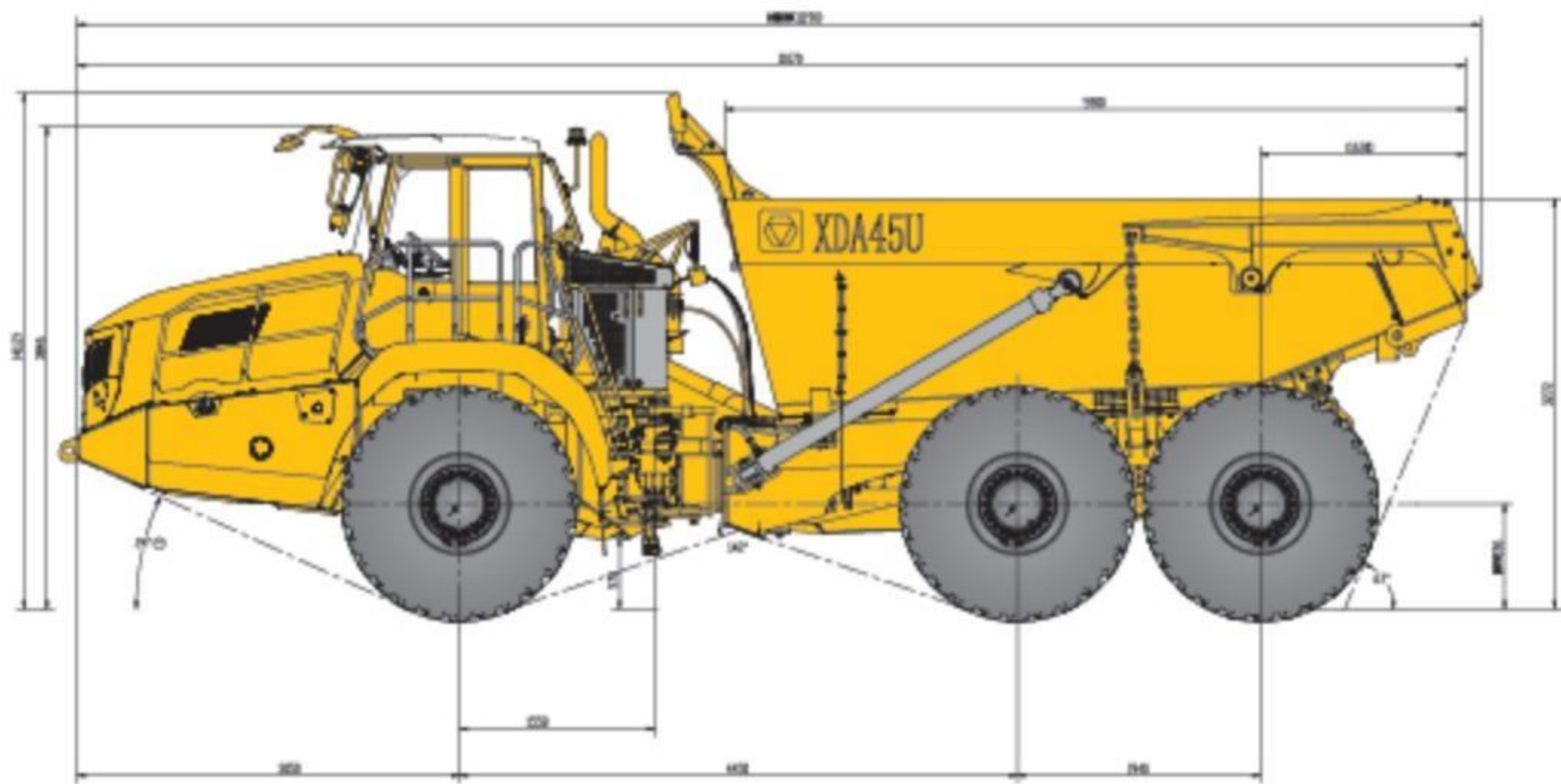
## ● 驾驶室 Cab

符合ISO防落物标准的FOPS驾驶室，空间宽敞，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。司机座椅为可调气悬浮式减振高靠背座椅，配备副驾驶座椅。配备组合式仪表、可倾斜伸缩式方向盘、电动风档雨刷及清洗器、着色玻璃、冷暖空调。车辆运行数据及故障报警项目采用可控组合式仪表的显示方式。

The cab has the following features: ROPS & FOPS according to the ISO protection standard, driver seat with a high backrest and adjustable air suspension with vibration reduction functions, a front passenger seat, radio, instrument display cluster and machine controls, telescopic steering wheel, electric windscreen washer/wiper, pigmented glass, Heating, Ventilation and Air-Conditioning unit with associated controls. Vehicle running data and fault alarm information are shown on a controllable combined colour display with the camera view.







## 主要参数/Main Specifications

项目 Item		单位 Unit	参数 Parameter
尺寸参数 Dimension			
整机全长 Overall Length		mm	11070
整机全宽 Overall Width		mm	3950
整机全高 Overall Height		mm	3846
前中轴距 Wheelbase front-mid		mm	4450
中后轴距 Wheelbase mid-rear		mm	1940
轮中心距 Tire center distance	前轮 Front	mm	2700
	后轮 Rear	mm	2700
重量参数 Weight			
整车总质量 Total Weight		kg	75000
额定载重 Payload		kg	41000
空载车重 Curb Weight		kg	34000
质量分布 Weight Distribution			
空载 Unload	前轴 Front	kg	17000 (50%)
	后轴 Mid & Rear	kg	17000(50%)
满载 Loaded	前轴 Front	kg	22500(30 %)
	后轴 Mid & Rear	kg	52500 (70%)
动力参数 Power Train			
发动机型号 Engine		/	Benz OM471
发动机额定功率 Rated Power		kW/rpm	390/1600
发动机最大扭矩 Max Torque		N.m/rpm	2600/1300
驱动形式 Drive		/	6×6
轮胎 Tires		/	29.5R25

项目 Item		单位 Unit	参数 Parameter
行驶参数 Driving Performance			
最高行驶速度 Max speed		km/h	51
最小通道圆半径 Min Turning Clearance		mm	9275
最大爬坡度 Max Grade ability		%	45
最大转向角 Max Steering Angle		°	±42
最小离地间隙 Minimum Ground Clearance		mm	530
工作参数 Working Parameter			
装载高度 Loading Height		mm	3272
举升时间 Hoist Time		s	12
举升角度 Hoist Angle		°	70
保养容量 Service Capacities			
燃油箱 Fuel		L	500
制动油箱 Brake oil tank		L	200
液压油箱 Hydraulic Oil		L	300
机油 Engine Oil		L	40
冷却液 Cooling system		L	100
分动箱 Transfer box		L	11
驱动桥 Axles-differential		L	165
货厢容积 Body			
平装 Struck		m <sup>3</sup>	19.5/20.5
2:1堆装 2:1Heaped		m <sup>3</sup>	25/26

材料和规格可随时改变，恕不另行通知  
Materials and specifications may be changed at any time without prior notice