全地面起重机
All Terrain Crane
徐工重型

新一代王者时代
引爆中国轮式起重机第五次革命

中国工程起重机行业技术变革之路
从1963年，中国推出第一代汽车起重机，此后，徐工逐渐在行业核心技术革新。
70年代，徐工率先进入全液压汽车起重机领域，推动了中国起重机行业的第一次技术革命。
2000年，徐工推出的K系列汽车起重机开创了一个全新时代。
2002年，中国首台全地面起重机在徐工诞生，中国从此步入高端起重机领域，徐工第一次引领了行业的革命。
2004年徐工重型突破封锁、自主创新，成功掌握“U形”、“单缸插销自动伸缩”等核心技术和生产全过程，行业再一次引发了革命，给中国装备制造业添加了绚烂的一笔。
2010年上半年，徐工全面启动边界极限工程，接连推出三大系列新品，一举引领行业第五次技术革命。
XCMG Xuzhou Heavy Machinery Co., Ltd. (XZHM)

NEW GENERATION KING’S TIME
IGNITES THE 5TH WHEEL MOUNTED CRANE REVOLUTION IN CHINA

The technological innovation way of Chinese construction crane industry

In 1963, China introduced the first generation truck crane. Afterwards, XCMG has led the industry technological innovation successively for five times.
In the 1970’s, XCMG took the lead in getting into Full hydraulic truck crane field, which set off the first technological innovation in Chinese crane industry.
In 2000, K series Truck cranes introduced by XCMG created a completely new time.
In 2002, the first Chinese All Terrain Crane was born in XCMG, from then on China stepped into the high-end crane field, and XCMG run in the most front among the domestic industry players once again.
In 2004, XCMG successfully mastered "U" -shaped, "single cylinder pin automatically telescoping" boom technologies after breaking blockage and performing self-innovation, which sparked another technological revolution in Chinese truck crane industry, and added a splendid stroke to Chinese equipment manufacture industry.
In the first half of 2010, XCMG initiated “boundary limit” project comprehensively, and launched three series products successively, which ignited the 5th technological revolution in the industry.
八大技术亮点 EIGHT TECHNOLOGICAL HIGHLIGHTS

XCMG All Terrain Crane possesses 222 patent technologies, and adopts 38 completely new patent technologies.

新型单缸伸缩臂技术
New single cylinder telescoping boom technology
吊臂伸缩平稳可靠，安全性更高，进一步提升起重作业的稳定性和承载能力
Boom telescopes smoothly and reliably with higher safety, and the stability and load-bearing ability during lifting operation are improved further.

先进的驱动装置
Advanced driving devices
环保，强劲，高效
Environmental, powerful and effective

氢气悬架技术
Hydro-pneumatic suspension technology
整车行驶平稳，通过性能优越
Entire vehicle drives smoothly with excellent passing ability

多轴多模式电液转向技术
Multi-axle various modes electro hydraulic steering technology
六种转向模式，车辆更灵活
Six steering modes contribute to excellent maneuverability
QAY220
XCMG ALL TERRAIN CRANE

智能控制操作系统
Intelligent control system
全方位智能化控制，操作更轻松便利
Overall intelligent control system brings more easy and convenient operation

自组合式平衡重技术
Self-assembled technology of counterweight
可完成近3万个吊重工况，最大满足施工需要
Almost 30,000 lifting applications may be implemented with the help of it, construction demands are met maximally

新型制动技术
New brake technology
降低维护保养成本三分之二，延长使用寿命，制动更安全可靠
Maintenance cost is reduced two thirds, service life is prolonged, and brake is more safe and reliable

全方位人性化设计
Overall ergonomic design
想您所想，轻松吊装
Taking what costumers want into consideration as well as easy lifting operation
紧凑/灵活/重量优化

- 行驶状态全长仅15.85m，底盘长度仅14.925m。
- 接近角为16°，离去角为18°。
- 全转向时，最小转弯半径仅为11.5m。
- 行驶状态总重量仅72t，轴重6×12t。
- 全配置还包括6节64m主臂，4节36m副臂，65t配重，5种配置组合可完成近3万个工况。
- 全车总长15.85m，长度仅为14.925m。
- 转向角度是16°，离去角度是18°。
- 最小转弯半径是11.5m。
- 行驶状态总重量是72t，轴重是6×12t。
- 全配置包括6节64m主臂，4节36m副臂，65t配重，5种配置组合可完成近3万个工况。

先进的驱动装置

- 发动机采用高压共轨燃油系统驱动 Byrne发动机（额定功率：420kw/1800rpm；最大扭矩：2700Nm/1300rpm）。柴油机采用高压共轨燃油系统驱动 Byrne发动机（额定功率：420kw/1800rpm；最大扭矩：2700Nm/1300rpm）。
- 变速器采用高速自动操纵变速器，带缓速器经及取力器。
- 分动箱采用高速自动操纵变速器，带缓速器及取力器接口。
- 动力系统散热采用水冷和水冷相结合，散热器置于发动机右侧，采用液压驱动风扇工作，同时发动机前端的保留风扇，吸入冷风为机体表面降温。
- 驱动形式为12×6。二、五、六轴为驱动轴。
- 转向形式为12×12全桥转向。
- 最高车速72Km/h。
- 最大爬坡度50%。
- Benz powerful electronic injection engine (rated power of 420kw/1800rpm, max. torque of 2700Nm/1300rpm).
- Imported 16-speed automatic control transmission with retarder and PTO.
- Imported transfer box with high/low speed, ports of differential and PTO.
- Air cooling, water cooling and oil cooling are combined for heat dispersion of power system. With fan driven hydraulically, radiator is horizontally positioned at the right side of engine, and the fan located at the front end of the engine is retained for sucking cold air to lower the temperature of the engine block.
- Drive 12×6. 2nd, 5th and 6th axles are for driving.
- Steering 12×12, all axles steering.
- Maximum vehicle speed is 72Km/h.
- Maximum grade ability is 50%.
新型单缸伸缩臂技术

New single cylinder telescoping boom technology

- 6节伸缩臂总长64m。
- 采用高强进口钢材，自重更轻，性能更强。
- 椭圆形截面，变截面技术，抗扭强度大，稳定性高。
- 快速自动伸缩系统提高作业效率。
- 优化的多种伸缩组合方式，最大程度的发挥起重臂性能。
- 高强度耐磨滑块。
- Six-section telescopic boom up to 64m.
- Made of high tensile imported steel, lighter dead weight and stronger capacity.
- Oval cross-section and tapered cross-section technology contribute to larger torsion-resistant strength and higher stability.
- Fast automatically telescoping system improves operating efficiency.
- Various configurations of telescoping boom are optimized, which give free rein to its lifting capacity maximally.
- High strength wear sliders are available.

自组合平衡重技术

Self-assembled technology of counterweight

- 自主研发的组合式平衡重技术，能有效提升中长臂吊重性能30%。
- 整个安装过程自找完成，无需其他设备配合，方便快捷。
- 采用全新平衡重连接方式。
- 平衡重组合安装只需30分钟，极大提高工作效率。
- Self-assembled technology of counterweight researched & developed by ourselves, improves 30% the lifting capacity of medium-length boom effectively.
- Whole assembling process is finished by itself, no need for other equipment, convenient and quick.
- Completely new assembling method is used.
- Only 30 minutes is enough for assembly, the working efficiency is improved greatly.
电液比例控制多轴转向模式

*Electro hydraulic proportional control multi-axle steering modes*

前轴采用机械控制+液压助力转向，后轴采用电液比例控制转向，可单独控制转向和锁死，实现多种转向工作模式。

Front axle employs mechanical control plus hydraulic servo steering, and rear axle takes electro hydraulic proportional control steering. Steering and locking of axles may be controlled individually for various steering modes.

- **公路行驶模式**
  Road travel mode: the vehicle may select different steering modes automatically according to its travel condition so as to realize the safest driving in any condition.

- **小转弯模式**
  Small turning mode: in order to perform turning with a small diameter in a confined job site.

- **蟹行行驶模式**
  Crab walk mode: the crab walk is realized when the front axle and the rear axle are steering towards the same direction, so that the vehicle gets the job site quickly.

- **后轴独立转向模式**
  Rear axle independent steering mode: rear axle steering is performed by a button with reference to the front axle steering angle, so free coming in and out of a confined job site is available.

- **后轴锁定模式**
  Rear axle locked mode: it is used to select rear axle steering or not for good maneuverability.

- **防甩尾模式**
  Anti-drifting mode: the last axle is not steering, which will increase the vehicle stability during its high speed driving, and driving safety is ensured.
新型制动技术

- 采用行车制动+驻车制动+辅助制动结合的制动系统。
- 行车制动采用双回路系统，并配备ABS防抱死制动系统。
- 辅助制动有发动机缓速制动和变速箱缓速制动，并通过制动综合管理提高制动系统的安全性和舒适性。
- 车轴采用气盘式制动器，为国内同行业首次应用。
- 降低维护成本2/3，提高行车安全。

- The brake system consists of service brake, parking brake and auxiliary brake.
- Service brake adopts dual circuit system, with ABS equipped.
- Auxiliary brake includes engine retarder and transmission retarder. Safety and comfort in brake system are improved by brake comprehensive management.
- Air disc brake is used in axle, which is employed first in domestic same industry.
- Maintenance cost is reduced two thirds, and driving safety is improved.

油气悬架技术

- 可实现车辆的升降、下降、手动及自动调平、弹性与刚性转换，使车辆能够轻松通过滑移、桥梁等限高场所。
- 若和冲击制动，起到减震振动的作用，保证车身具有良好的行驶平稳性和过渡性，提高了乘坐舒适性。
- 双级臂导向，约束轴的运动轨迹。
- 实现车辆的操纵稳定性，上车始终保持平顺。

- Vehicle up and down movement, manual and automatic leveling, switch-over of flexible and rigid suspension may be realized with it, so the vehicle may freely pass where necessary, and the vehicle's comfort and road holding are improved.

- Shock load may be buffered, taking the role of damping vibration, therefore, driving smoothness and pass ability are available, and driver’s comfort is improved.

- Imported transfer box with high/low speed, ports of differential and F10.

- Dual longitudinal push rods are to confine the path of axle motion.

- Vehicle operation stability is ensured, and superstructure smoothness is kept.

全方位人性化设计

- 不同的支撑位置
  - 支腿完全缩回
    - 半缩位置：6.5m×8.8m
    - 全缩位置：8.7m×8.8m
  - 支腿盘固定安装，由防护罩保护。
  - 支腿水平调整，仅需通过一个按钮即可自动将起重机调至水平状态。

- 驾驶室两侧各有一个液晶显示屏，显示车辆的状态。

- 支腿的操作过程严格按照程序设定，防止事故发生。

- 由四个工作灯向支腿区域提供照明。

- Various supporting positions
  - Outriggers are retracted fully
  - Half-extended outrigger span: 6.5m×8.8m
  - Fully-extended outrigger span: 8.7m×8.8m
  - Outrigger floats are fixed permanently and protected by protective covers.

- On both sides of carrier there is an outrigger control console individually, on which there are a number of keyboards and electronic level gauge. Engine start and stop buttons, as well as speed control keys with个百分点 on the key board are indicated luminously and deactivated by an enable switch.

- Outrigger operating procedure is set strictly according to programs to prevent accident occurring.

- There are four working lamps for supplying illumination to outrigger area.
舒适的操作室
COMFORTABLE OPERATOR’S CAB
- 大型驾驶室，四周装有有色玻璃，前窗和天窗配有雨刮器和清洗器。
- 操作杆扶手一体化设计，控制面板按人机工程学设计。
- 上车操作室可翻转20°，拓宽视野。
- 操作室配置冷暖空调，营造舒适环境。
  - Streamlined operator’s cab, tinted panes all around, wiper and washer are equipped on both windshield and roof window.
  - Armrest integrated with control levers, and control console designed ergonomically.
  - It can be tilted back 20° for increased operator visibility during operation.
  - Heater and air conditioner contribute to comfortable circumstance.

舒适的下驾驶室
COMFORTABLE DRIVER’S CAB
- 采用新型外观结构驾驶室，结构上采用气缸悬挂，降低车辆振动对驾驶员的影响。
- 采用空气悬挂座椅，可多方位调整并配备安全带，提高驾驶舒适性。
- 显示和显示元件的放置位置符合人机工程学原理，保证连续使用时操作的简便性和舒适性。
- 方向盘的高度和角度均可调。
- 防爆镜可加热，并可电动调节。
  - New appearance driver’s cab, and air cylinder suspension structure is used to reduce vibration effect to driver.
  - Air cushioned seat is adjustable at multi-direction, with safety belt equipped, driving comfort is improved.
  - Electric exterior mirrors, doors and windows improve the comfort of operation.
  - Ergonomic location of operating elements and indicators ensures simplification and comfort during continuous operation.
  - Steering wheel adjustable in height and inclination.
  - Heatable and electrically adjustable exterior mirrors.
  - Three sets of automatic washer and intermittent wiper are available.
智能化操控系统

徐工专有控制系统

- 标准应用程序：力矩限制器功能、主显示画面程序、工况选择程序、性能浏览程序等。
- 方便的浏览式工况设置。
- 工况的调整可以实时显示，直观、方便。
- 力矩过载或其它危险动作，控制程序自动进行限制。
- 精确的手柄调节功能，使操作平稳、高效。
- Standard application programs for: load moment indication function, main display, working condition selection and performance browse etc.
- Convenient interactive working condition setting.
- Real-time indication of adjustment for working condition, visual and convenient.
- Moment overloading and other dangerous movements may be limited automatically by control program.
- Accurate adjusting function of lever makes operation smooth and efficient.

辅助伸缩臂系统

- 通过直观的显示界面实时检测伸缩过程。
- 可自由选择自动/手动伸缩模式，高效、便捷。
- 具有自动伸缩功能，操作简单。
- 可以方便进行参数的校正。
- The testing of boom telescoping process is indicated by visual display interface.
- Manual and automatic telescoping modes may be selected freely, high efficient and convenient.
- Automatic telescoping function is available, easy to operate.
- Parameters may be calibrated easily.
功能强大、高效的CAN总线技术
POWERFUL AND HIGH EFFICIENT CANBUS TECHNOLOGY

- 控制器之间采用总线连接，减少接口，提高了可靠性。
- 总线型器件可由控制节点进行诊断，快速、准确地判断故障。
- 实时采集发动机数据并作出调整，提高整机性能。
- 标准的总线技术具有极大的扩展空间，并提高整机效率。

1. CANbus is used between controllers, interface decrement improves reliability.
2. CANbus components may be diagnosed by control nodes, fault may be judged quickly and accurately.
4. Standard CANbus technology has extensive space to improve entire machine efficiency.
虚拟墙系统
VIRTUAL WALL SYSTEM

- 针对具体工作区域进行限制，方便、安全。
- 可变的起升高度限制
- 回转角度限制
- 边界限制

方便的故障诊断及实时检测功能
PERFECT FAULT DiAGNOSE AND REAL-TIME TESTING FUNCTION

- 维修人员可以方便快捷的通过自诊断系统寻找故障点，并由故障提示排除故障。
- 将操作过程直观的显示在界面上，用户可以方便的进行查询。
- 将各主要器件的参数直接显示，操作人员可以观察整个系统的输入及输出。
- Fault may be found quickly through the diagnose system, and be removed by indication.
- Operating process is indicated directly on the interface, and inquiry is able to be done.
- Parameters of main parts are displayed directly, and the input and output of whole system may be observed by operator.
THE SECOND GENERATION KING’S TIME
XCMG ignites the 2nd All Terrain Crane revolution in China
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