



徐工集团徐州重型机械有限公司
XCMG XUZHOU HEAVY MACHERY CO.,LTD.



□ QAY180 □ QAY220 □ QAY260 □ QAY300 ☒ QAY400 □ QAY500

全地面起重机
All Terrain Crane

Courtesy of Crane.Market

徐工重型 王者时代

引领行业步入智能加节能时代

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，徐工连续五次引领行业技术变革；

70年代，徐工率先进入全液压汽车起重机领域，掀起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，徐工再一次跑在了行业的最前端；

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”吊臂技术，在汽车起重机行业再一次引发了革命，给中国装备制造增添了绚烂的一笔。

2009年，徐工推出QAY400，引领行业步入智能+节能时代。

XCMG Xuzhou Heavy Machinery Co., Ltd. (XZHM)

KING'S TIME

THE LEADER OF CHINESE CRANE INDUSTRY

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 ran in the most front among the domestic industry players once again.

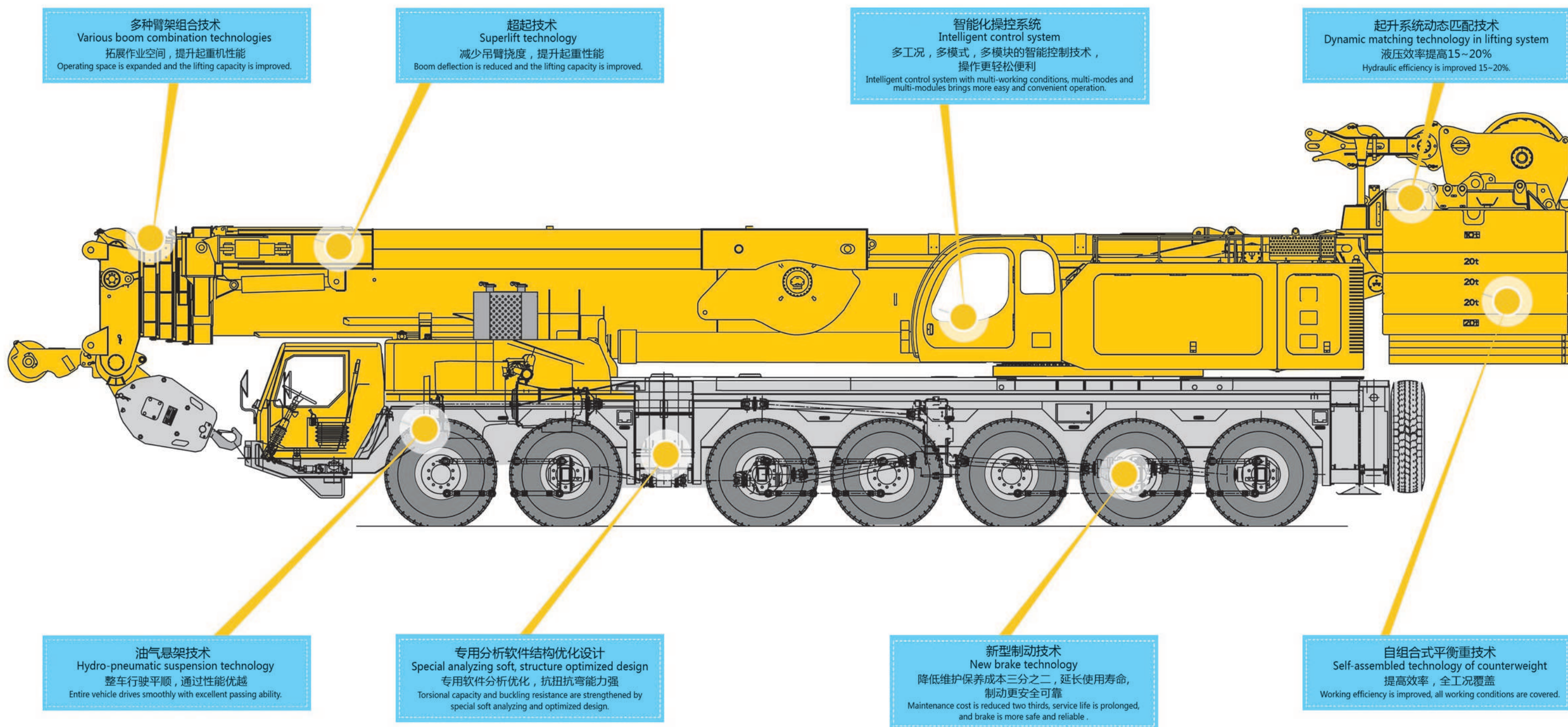
In 2004, XCMG successfully mastered "U"-shaped, "single cylinder pin automatically telescoping" boom technologies after breaking blockage and performing self-innovation, which sparked another technological revolution in Chinese truck crane industry, and added a splendid stroke to Chinese equipment manufacture industry.

In 2009, XCMG introduced QAY400, led the industry into the intelligent and energy-saving time.

八大技术亮点 EIGHT TECHNOLOGICAL HIGHLIGHTS

徐工全地面起重机拥有222项专利技术 采用38项全新专利技术

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



多种臂架组合技术
Various boom combination technologies
拓展作业空间，提升起重性能
Operating space is expanded and the lifting capacity is improved.

超起技术
Superlift technology
减少吊臂挠度，提升起重性能
Boom deflection is reduced and the lifting capacity is improved.

智能化操作系统
Intelligent control system
多工况，多模式，多模块的智能控制技术，
操作更轻松便利
Intelligent control system with multi-working conditions, multi-modes and multi-modules brings more easy and convenient operation.

起升系统动态匹配技术
Dynamic matching technology in lifting system
液压效率提高15~20%
Hydraulic efficiency is improved 15~20%.

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

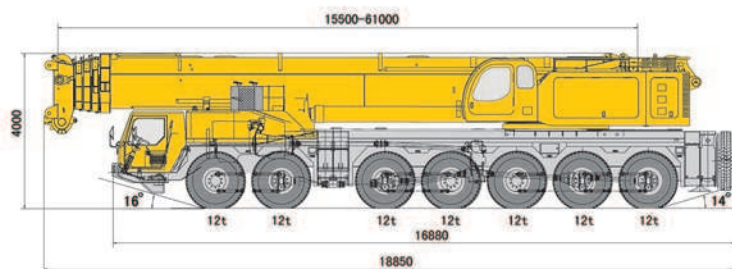
专用分析软件结构优化设计
Special analyzing soft, structure optimized design
专用软件分析优化，抗扭抗弯能力强
Torsional capacity and buckling resistance are strengthened by special soft analyzing and optimized design.

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.

自组式平衡重技术
Self-assembled technology of counterweight
提高效率，全工况覆盖
Working efficiency is improved, all working conditions are covered.

紧凑/灵活/重量优化

Compact/maneuverable/weight-optimized



- 行驶状态全长18.85m，底盘长度16.88m。
- 接近角为16°，离去角为14°。
- 全桥转向时，最小转弯半径仅为25m。
- 行驶状态总重量仅84t，轴重7×12t。
- 全配置还包括140t配重，5节61m主臂，6节桁架49m副臂，77m变幅副臂，Y形超起装置。
- Entire length 18.85m, and carrier length 16.88m in travel configuration.
- Approach angle is 16°, departure angle is 14°.
- The minimum turning radius is 25m during all-axle steering.
- Total vehicle weight in travel configuration is only 84t, and axle load 7×12t.
- Five-section boom extending to 61m, six-section lattice jib of 49m and 77m luffing jib, 140t counterweight and Y-type superlift device are standard equipments.

先进的驱动装置

Advanced driving devices

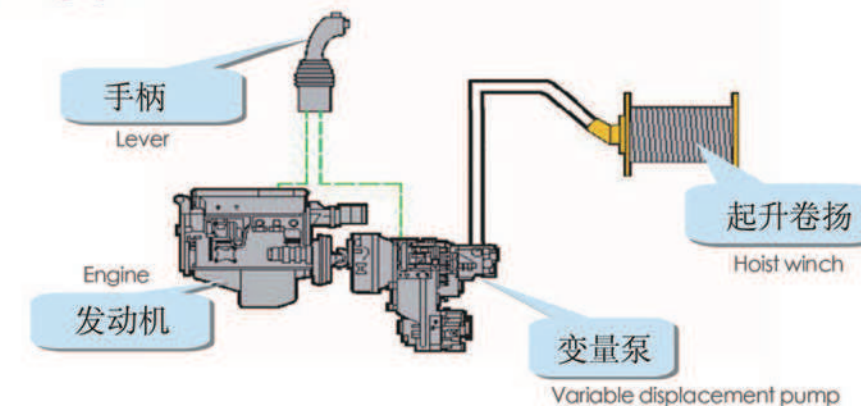


- 发动机采用动力系统强劲的进口奔驰电喷发动机（额定功率：420kw/1800rpm；最大扭矩：2700Nm/1080rpm）。
- 变速箱采用进口16档自动操纵变速箱，带缓速制动及取力器。
- 分动箱采用进口大降距分动箱，带高低档，差速器及取力接口。
- 动力系统散热采用风冷、水冷和油冷相结合，散热器平置在发动机右侧，采用液压驱动风扇工作，同时发动机前端仍保留风扇，吸入冷风为机体表面降温。
- 驱动形式为14×7 第二、五、六桥为驱动桥。
- 转向形式为ZF半整体式转向器，双回路液压助力系统，且设有应急回路系统。
- 最高车速70Km/h。
- 最大爬坡度40%。
- Benz powerful electronic injection engine (rated power of 420kw/1800rpm, max. torque of 2700Nm/1080rpm)
- 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 in the front end of the engine is retained for sucking cold air to lower the temperature of the engine block.
- Drive 14×7, 2nd, 5th and 6th axles are for driving.
- Steering type is ZF semi-integral steering gear, double-circuit hydraulic servo system, and with emergency circuit equipped.
- Maximum vehicle speed is 70Km/h.
- Maximum grade ability is 40%.

起升系统动态匹配技术

Dynamic matching technology in lifting system

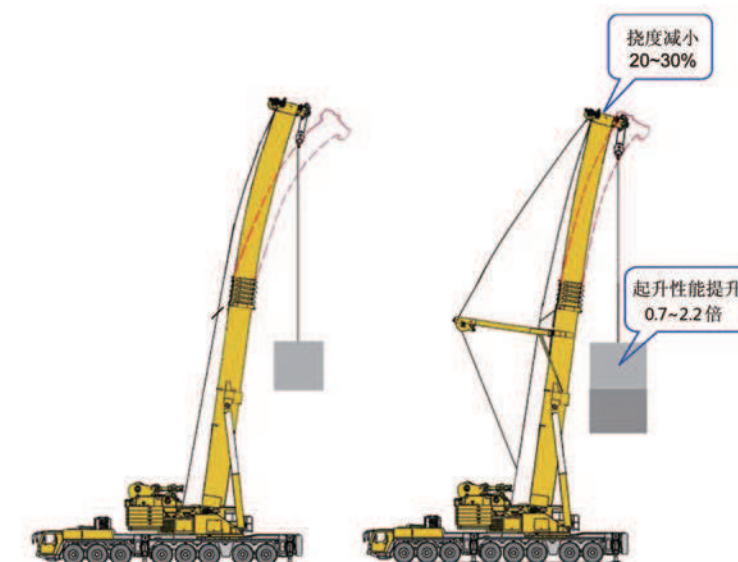
- 液压效率提高15-20%。
- 防止二次起升下滑。
- 消除起升系统微动时抖动现象。
- 防止起升马达失速，飞车现象。
- 负功率吸收及马达下降失速控制。
- Hydraulic efficiency is improved 15~20%.
- Sliding during second lifting operation is prevented.
- Shaking during inching control in lifting system is eliminated.
- Motor install and racing are avoided.
- Motor stall is controlled by negative power absorbing.



大型全地面起重机超起技术

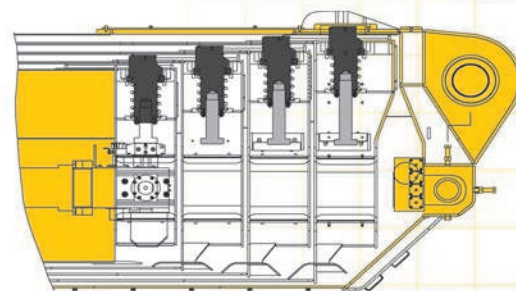
Large-tonnage All terrain crane superlift technology

- 减小吊臂挠度20~30%。
- 提高起重性能70~220%。
- 独有设计的超起装置自拆卸功能。
- 整个过程自我完成，无需其他设备配合，方便快捷。
- 超起装置安装只需1人操作完成，极大地提高工作效率。
- Boom deflection is reduced 20~30%
- The lifting capacity is improved 70~220%.
- Unique superlift device self-removal function.
- Whole assembling process is finished by itself, no need for other equipment, convenient and quick.
- Only one person is enough for assembly, the working efficiency is improved greatly.



单缸伸缩臂技术

Single cylinder telescoping boom technology



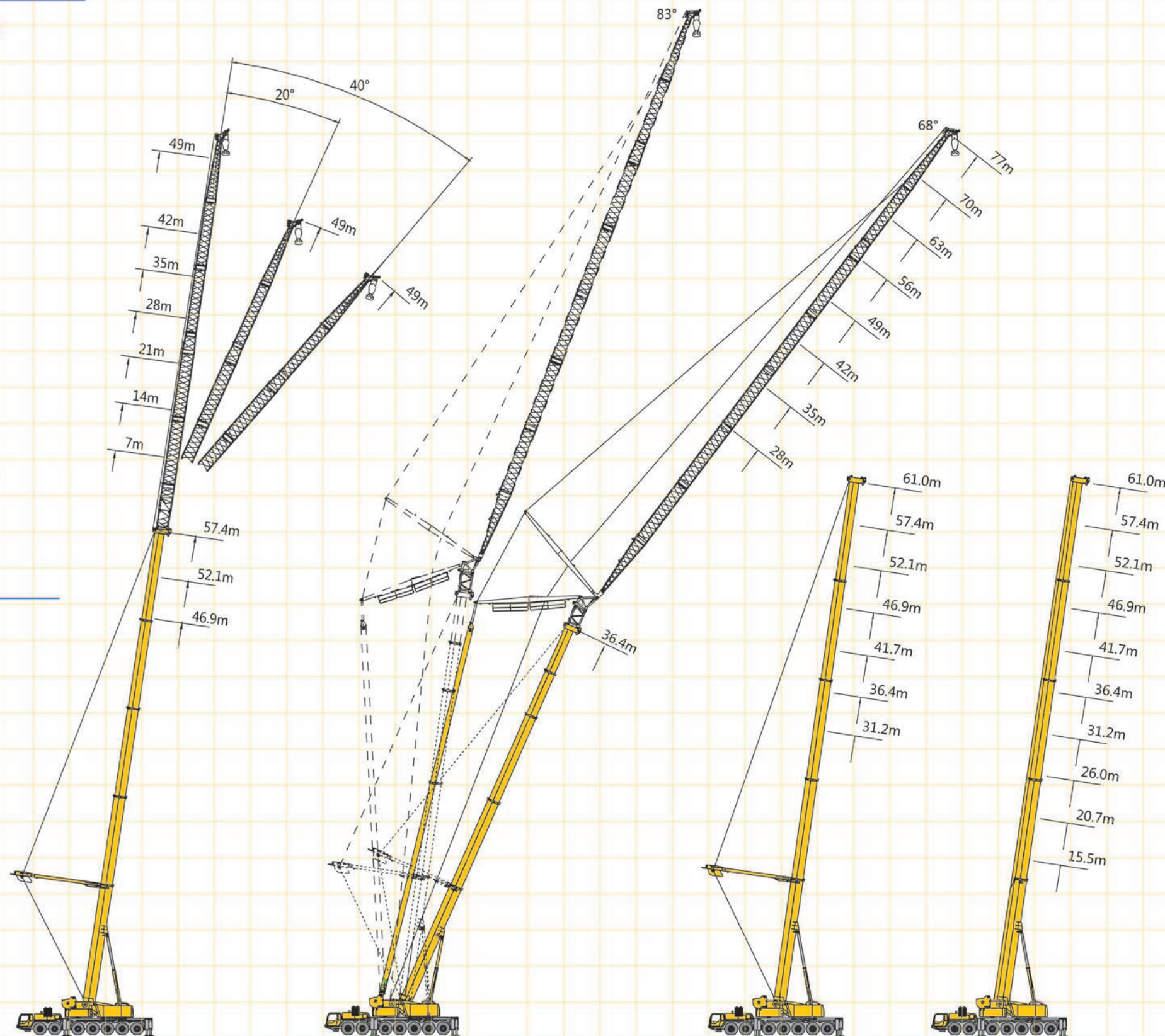
- 5节伸缩臂总长61m。
- 采用高强度进口钢材，自重更轻，性能更强。
- 椭圆形截面，变截面技术，抗扭强度大，稳定性高。
- 快速自动伸缩系统提高作业效率。
- 优化的多种伸缩组合方式，最大限度的发挥起重臂性能。
- 高强度耐磨滑块。
- Five-section telescopic boom up to 61m.
- Made of high tensile imported steel, lighter dead weight and stronger capacity.
- Oval cross-section and tapered cross-section technology 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.

多种吊臂工况组合系统

Various combinations of working condition

1. 主臂伸缩工况，长15.5~61米
2. 主臂+超起工况，提升起重性能60%
3. 固定桁架副臂工况，长7~49米，安装角度皆为0°、20°、40°，安装在15.5~57.4米长伸缩主臂上
4. 变幅桁架副臂工况，长28~77米，安装在36.4~57.4米长伸缩主臂上
5. 固定副臂+超起和变幅副臂+超起工况下，主臂在68°、75°、83°三个安装角度变幅

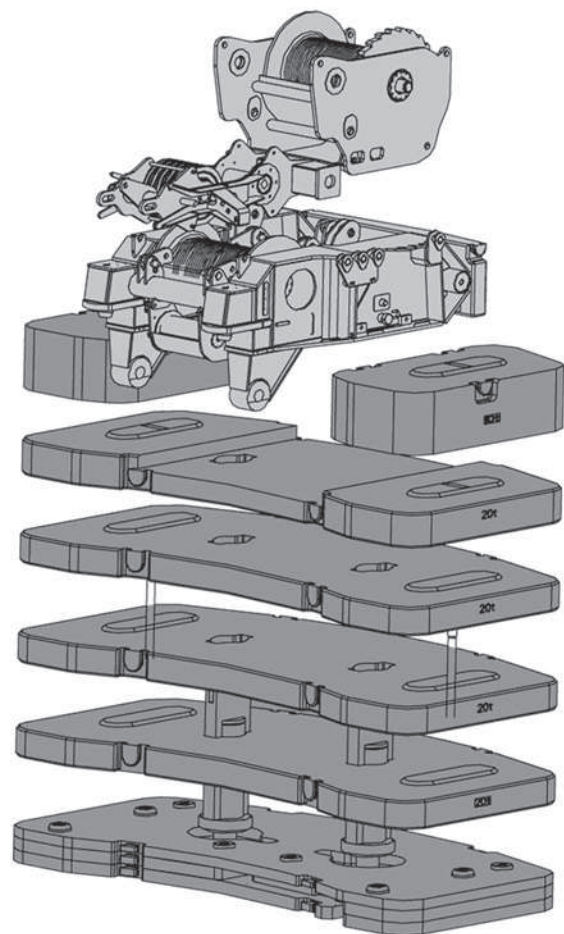
- 1: Main boom telescoping working condition, boom length 15.5~61m.
- 2: Main boom + superlift working condition, the lifting capacity is improved 60%.
- 3: Fixed lattice jib working condition, jib length 7~49m, offset angles of 0°, 20° and 40° are available, mounted on the telescoping boom of 15.5~57.4 m.
- 4: Luffing lattice jib working condition, jib length 28~77m, mounted on the telescoping boom of 36.4~57.4m.
- 5: Superlift + luffing jib working condition, boom angles are 68°, 75° and 83°.



■ 自组合平衡重技术

Self-assembled technology of counterweight

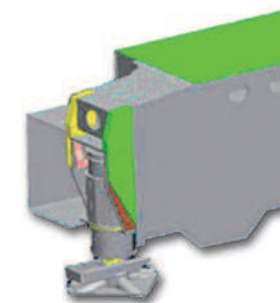
- 自主研发的组合式平衡重技术，能有效提升中长臂吊重性能30%。
- 采用全新平衡重挂接方式。
- 整个安装过程自我完成，无需其他设备配合，方便快捷。
- 多种平衡重组合方式，可满足所有工况的需求。
- 平衡重组合安装只需1~2个小时，极大地提高工作效率。
- 不同工况下塔卷、副卷和替代平衡重可拆装替换。
- Self-assembled technology of counterweight researched & developed by ourselves, improves 30% the lifting capacity of medium-length boom effectively.
- Completely new assembling method is used.
- Whole assembling process is finished by itself, no need for other equipment, convenient and quick.
- Many kinds of counterbalance combination way, may meet all operating mode need.
- Only 1~2 hours are enough for assembly, the working efficiency is improved greatly.
- Tower jib winch, jib winch and replaceable counterweight may replace each other under different working conditions.



■ 专用分析软件结构优化设计

Special analyzing soft, structure optimized design

- 优化的薄臂大箱形结构，抗弯、抗扭能力强。
- 采用进口高强度板材，自重小、性能优。
- 采用等强度梁设计理念，异种板厚对接方式，支腿强度高、刚度大、抗扭能力强。
- 活动支腿采用内藏式侧面搭接技术，满足横向大跨距，增大支腿搭接长度。
- Optimized thin boom box structure contributes to strong torsional capacity and buckling resistance.
- Made of high tensile imported steel, lighter dead weight and stronger capacity optimized frame structure.
- Design concept of equal strength beam and joining way of steel plates with different thicknesses make outrigger higher strength, rigidity and torsional capacity.
- Built-in side overlapping technology applied in outrigger beams increases outrigger span.



■ 新型制动技术

New brake technology

- 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，两回路各自独立，确保制动的有效性。
- 配备ABS防抱死制动系统，保证车辆获得最好制动稳定性和方向操纵性。
- 辅助制动为发动机缓速制动和排气制动，并通过制动综合管理提高制动系统的安全性和舒适性。
- 制动柔和平稳，无冲击感，体验全新制动感受。
- The brake system consists of service brake, parking brake and auxiliary brake.
- Service brake adopts independent dual circuit system for brake effectiveness.
- ABS equipped ensures the best brake stability and direction control ability.
- Auxiliary brake includes engine retarder brake and transmission retarder brake. Safety and comfort in brake system are improved by brake comprehensive management.
- Smooth brake, no impact feeling, completely new brake is experienced.

■ 油气悬架技术

Hydro-pneumatic suspension technology

- 可实现车辆的上升、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涵洞、桥梁等限高场所。
- 缓和冲击载荷，起到衰减振动的作用，保证车辆具有良好的行驶平顺性和通过性，提高了乘坐舒适性。
- 双纵臂导向，约束轴的运动轨迹。
- 实现车辆的操纵稳定性，上车始终保持平稳。
- 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 culvert, bridge and low underpasses.
- 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 PTO.
- Dual longitudinal push rods are to confine the path of axle motion.
- Vehicle operation stability is ensured, and superstructure smoothness is kept.



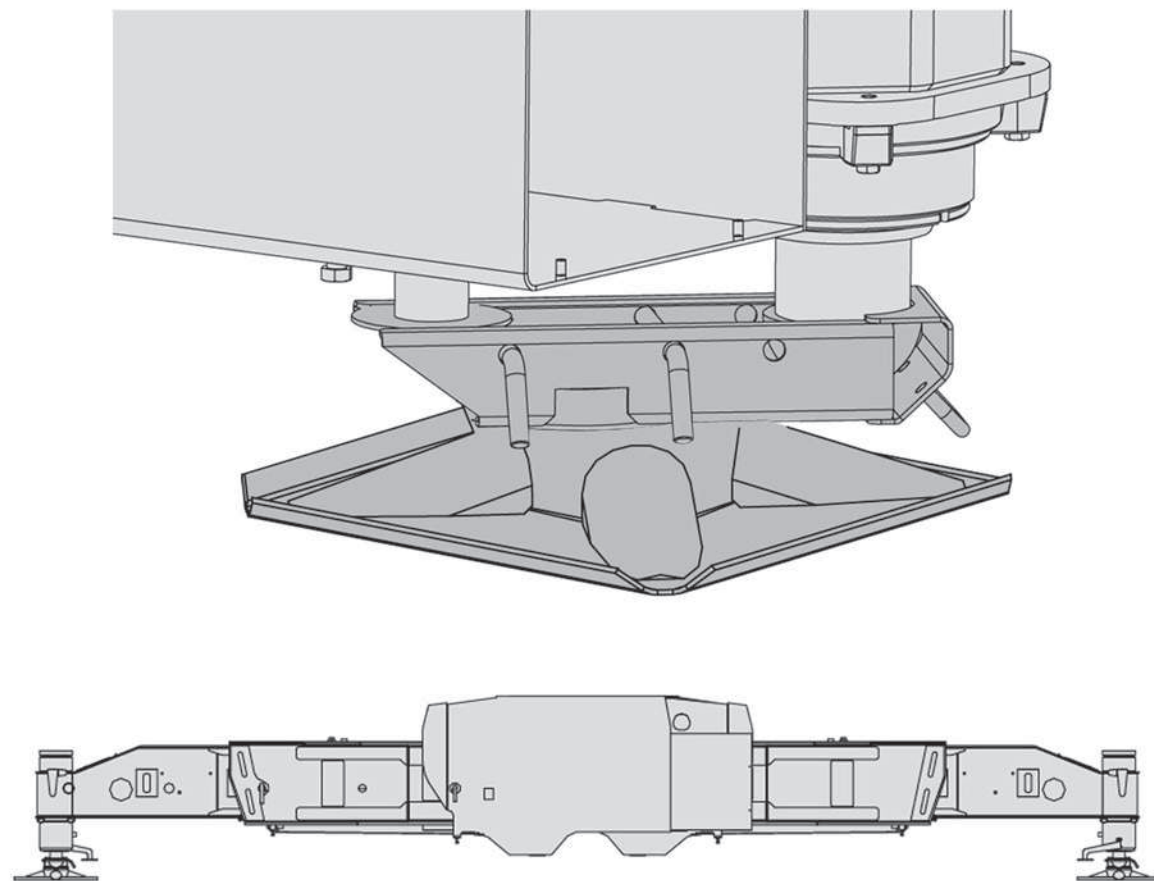
全方位人性化设计

Overall ergonomic design

起重机支腿操作

OUTRIGGER OPERATION

- 不同的支撑位置
支腿完全缩回
半伸位置：6.23m×9.8m
全伸位置：9.5m×9.8m
- 支脚盘固定安装，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。
- 底盘两侧都有支腿控制面板，具有形象识别的键盘、电子水平仪、以及“发动机启动、停止”按钮和速度控制键，均可发光显示并可锁定。
- 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: 6.23m×9.8m
Fully-extended outrigger span: 9.5m×9.8m
- Outrigger floats are fixed permanently and protected by protective covers.
- The vehicle may be leveled automatically only by pressing a button.
- On both sides of carrier there is an outrigger control console individually, on which there are a key board and an electronic level gauge. Engine start and stop buttons as well as speed control keys with pictograms 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.



舒适的上车操纵室

COMFORTABLE OPERATOR'S CAB

- 大圆弧操纵室，四周装有色玻璃，前窗和天窗配有雨刮器和清洗器。
- 操纵杆扶手一体化设计，控制面板按人机工程学设计。
- 上车操纵室可旋转20°，拓宽视野。
- 操纵室配置冷暖空调，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.

舒适的下车驾驶室

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人员的影响。
- 采用空气悬浮座椅，可多方位调整并配备安全带，提高驾乘舒适性。
- 电动后视镜、电动门窗提高操作的舒适性。
- 操作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。
- 反光镜可加热、并可电动调节。
- 3套自动清洗装置和间歇控制功能的雨刮器。
- 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.

QAY400 徐工集团全地面起重机

XCMG ALL TERRAIN CRANE



智能化操作系统

Intelligent control system

徐重专有控制系统

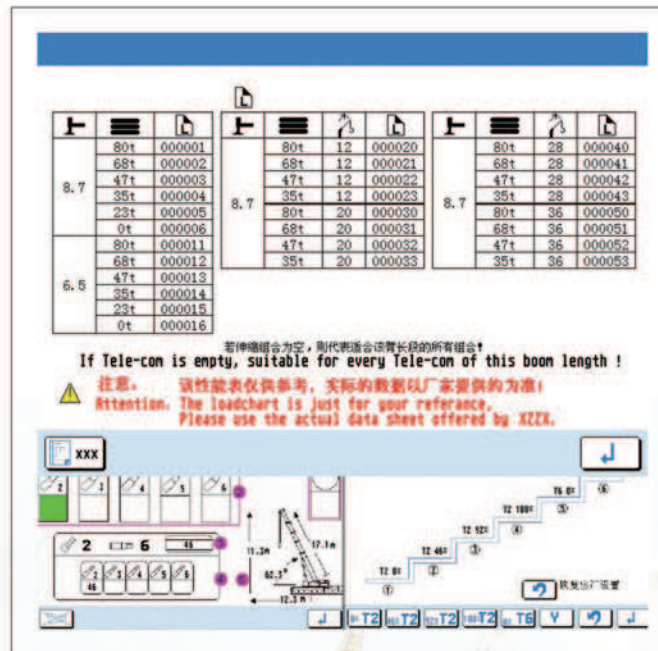
XCMG UNIQUE CONTROL SYSTEM

- 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。
- 方便的互动式工况设置。
- 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

TELESCOPING BOOM CONTROL SYSTEM

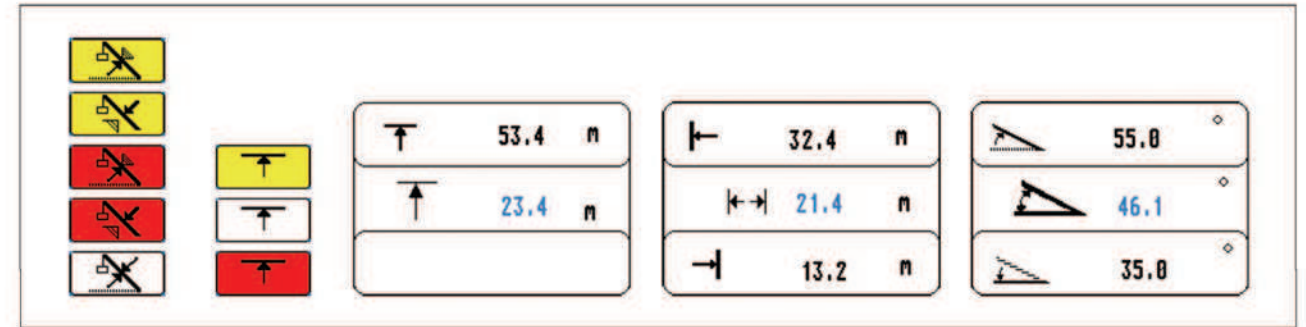
- 通过直观的显示界面实时检测伸缩过程。
- 可自由选择自动、手动伸缩模式，高效、便捷。
- 具有自动伸缩功能，操作简单。
- 可以方便进行参数的校正。
- The testing of boom telescoping process is indicated by visual display interface.
- Manual and automatic telescoping modes may be selected freely, high efficient and convenient.
- Automatic telescoping function is available,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



虚拟墙系统

VIRTUAL WALL SYSTEM

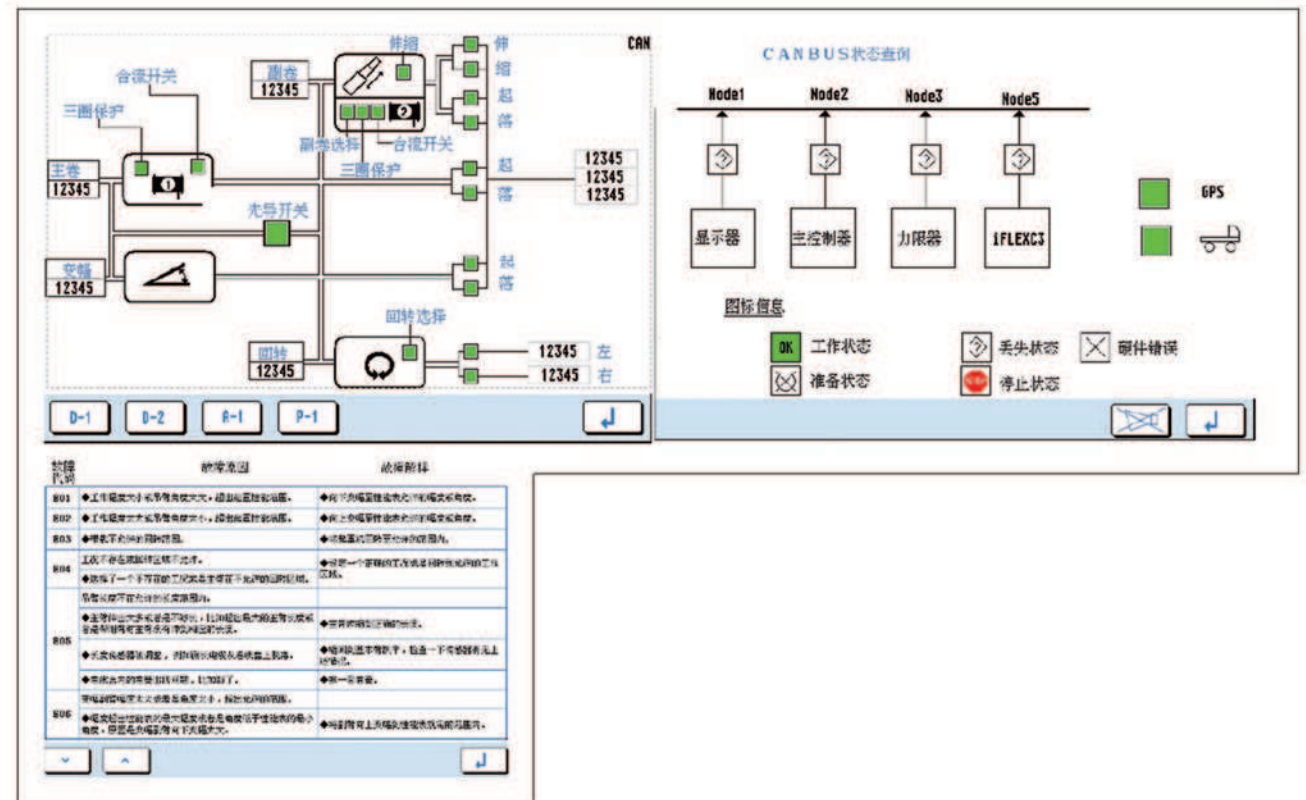
- 针对具体工作区域进行限制，方便、安全。
- 滑轮头的起升高度限制
- 工作半径限制
- 回转角度限制
- 边界限制
- Convenient and safe, it is aimed to limit
- The lifting height of pulley head
- Working radius
- Slewing angle
- Boundary



完善的故障诊断及实时检测功能

PERFECT FAULT DIAGNOSE AND REAL-TIME TESTING FUNCTION

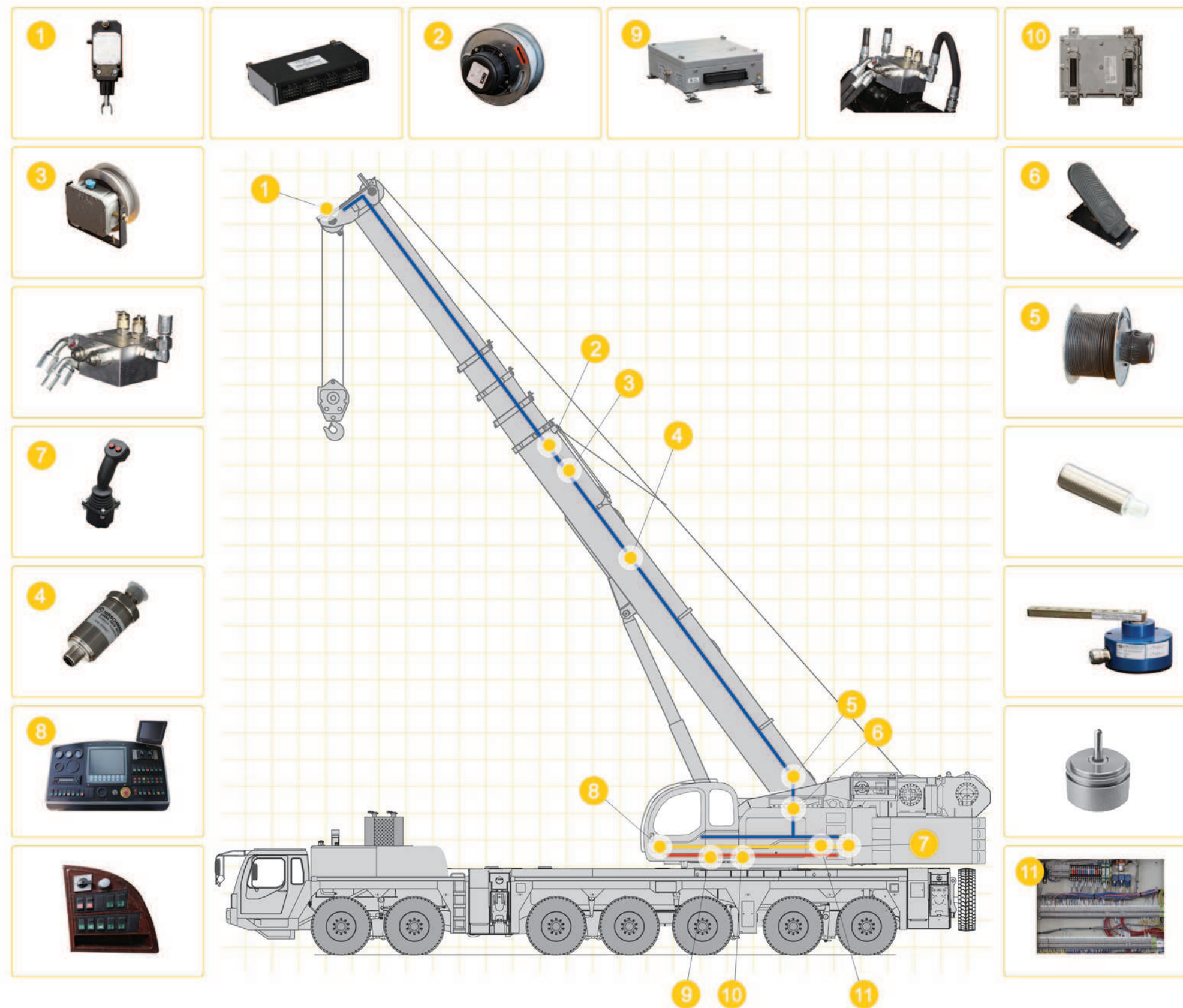
- 维修人员可以方便快捷的通过自诊断系统寻找故障点，并通过故障提示排除故障。
- 将操作过程直观的显示在界面上，用户可以方便的进行查询。
- 将各主要零件的参数直接显示，操作人员可以观察整个系统的输入及输出。
- Fault may be found quickly through the diagnose system, and be removed by indication.
- Operating process is indicated directly on the interface, and inquiry is able to be done.
- Parameters of main parts are displayed directly, and the input and output of whole system may be observed by operator.



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。
- 总线型元器件可由控制节点进行诊断，快速、准确的判断故障。
- 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。
- CANbus is used between controllers, interface decrement improves reliability.
- CANbus components may be diagnosed by control nodes, fault may be judged quickly and accurately.
- Real-time collection of engine data and subsequent regulation improve whole machine performance.
- Standard CANbus technology has extensive space to improve entire machine efficiency.



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