

RT90E 越野轮胎起重机亮点简介

Highlights of RT90E Rough Terrain Crane

1. 中德合作开发，引领行业技术潮流。极致化理念打造极致化精品，同等边界条件下：起重臂最长、起重作业性能最强、动力性能最高。

Developed jointly by Chinese and German engineers, it leads the industry technology tendency. With advanced design concept introduced, perfect product is built with the longest boom, highest lifting capacity and power performance compared with products in the same class.

2. 三种起重作业模式，优越的支腿支撑作业功能，毫不逊色于汽车起重机固定场地的作业性能；特有的轮胎支承作业性能，在狭小场地无法打开支腿时，可轻松完成汽车重机无法胜任的工作；超强的带载行驶性能，快速实现吊装、转移。

特别适用油田、仓库、货场、林矿、码头、物流基地等场所的起重运输作业。

Three operating modes: superior performance of operation on outriggers, which is not less than that for truck crane in a stationary site; unique performance of operation on tires makes it easy to complete the job what truck crane could not finish when it is difficult to deploy outriggers in a confined site; powerful pick and carry capacity makes fast operation of lifting and transferring load. It is suitable for lifting and transferring operation in oil patch, storage, goods yard, dock and logistic base, etc.

3. 两种驱动方式，正、反向行驶功能，适用场地作业和场地间的快速转移；四种电比例转向模式，最小转弯半径仅为 6.7m，在狭窄空间里提供无与伦比的机动灵活性。专用的越野花纹轮胎、超强的动力系统，保证了良好的越野性能，适应于各种恶劣场地

Two driving modes: forward and reverse driving function contributes to fast transferring within a site or from a site to another; four electro-proportional steering modes combined with min. turning radius of 6.7m offers unmatched maneuverability in a confined space. Specialized off-road tires and super power system ensure favorable off-road capacity, suitable for applications in various adverse sites.

4. 原装进口康明斯电控发动机（满足欧III\IV排放）、ZF 自动变速箱、KESSLER

车桥的极致化匹配为车辆提供卓越的动力性能；保证了良好的使用性和可靠性；成熟、批量配套的 CAN 总线控制系统、故障诊断和安全报警装置，实时保证作业的安全高效。

Cummins electronically controlled engine (compliant with Euro III/IV emission standards), ZF automatic transmission, KESSLER axles are matched optimally, contributing to distinguished power performance; It has good applicability and reliability; CAN bus control system, fault diagnostic system and warning devices ensure safe and efficient operation.

5. 专用软件开发的数字化样机，模拟实际工况的专业化分析，千百万次的样机起重作业试验、全面的系统测试、4000 公里的底盘行驶试验。千锤百练，可靠安全。

Digital prototype developed with dedicated software is reliable and safe, which has been proved by the specialized analysis via the simulation of actual working conditions, the lifting operation tests, comprehensive system tests and 4000 km chassis running test.

6. 驾驶、操纵作业室一体化设计，外观简洁、动感。全天候大圆弧玻璃视角开阔；人机工程设计的内部空间，宽敞舒适。可调式减震悬浮高靠背座椅，根据您的需求调整各个的合适位置，减轻作业疲劳强度。配置冷暖空调，大屏幕真彩显示器与主操纵台有机结合，操作便捷，作业参数、工况一目了然。

Cab of integrated design is simple and artistic. It is all-weather and streamlined and has a wide field of view, as well as spacious and comfortable due to ergonomic inner design. Damping suspension seat with high backrest may be adjusted according to operator's body, and can reduce operator fatigue and optimize productivity. Air conditioner and heater are equipped in the cab. Large screen color display combined with main control panel makes operation convenient and easy, and the operating parameters and working conditions may be seen at a glance.

7. 摆动式、可刚性锁止的液压悬架技术。公路行驶时后悬架可通过摆动机构、悬架油缸实现减震功能，缓冲路面冲击，提高行驶的平稳性。带载行驶时可将后悬架油缸锁止至刚性状态，以满足带载行驶要求。轮胎支撑作业时，当转台旋转超过 $\pm 3^\circ$ 时，悬架系统能够自动切换至刚性状态，最大限度提供安全保障。

Swing, rigidly lockable hydraulic suspension technology: the shock absorption function of rear suspension may be performed through the swing mechanism and suspension cylinder when driving on roads, consequently road shock is buffered and travel smoothness is

improved, the rear suspension cylinder may be locked to rigid state so as to meet the requirement for travel with a load suspended; during operation of crane on tires, when the turntable is turned over $\pm 3^\circ$, suspension system may automatically switch over to rigid state, operation safety is ensured.

8. 转向系统采用车轮转动方向自动切换技术。当转台转动角度超过 90 行车时, 控制系统通过安装在转台上的位置传感器发出信号控制转向器与前轴转向油缸之间的液压换向阀, 从而实现车辆反方向行驶时, 方向盘转动方向与行驶方向一致。

Switch over of wheel turning direction: when the vehicle is driving while the turntable is turned over 90° , the control system will send a signal through the position sensor fitted on the turntable for controlling the hydraulic change valve between the steering wheel and the change cylinder of front axle. And then the vehicle drives in reverse direction, and the rotating direction of the steering wheel is the same as that for forward driving.

9. 低压自动制动技术。全液压双回路盘式制动器, 当系统压力低于设定值时, 能够实现自动制动功能, 最大限度保障行车安全;

Automatic low pressure brake technology: with full hydraulic double circuit disc brake fitted, the brake is engaged automatically when the pressure in braking system is lower than the setting, thus driving safety is insured.

RT90E 越野轮胎起重机技术规格

Specifications of RT90E

越野轮胎起重机型号: RT90E

Model: RT90E

最大额定起重量: 2.5 米幅度 90 吨

Max. rated lifting capacity: 90t at radius of 2.5m

一、技术介绍 I . Introduction

1.1 发动机 Engine

制造商: 美国康明斯

Manufacturer: Cummins, US

型号: QSB8.9

Model: QSB8.9

功率: 209kW/2100r/min;

Power: 209kW/2100r/min

型式: 直列六缸、水冷却、增压中冷、压燃式柴油发动机

Type: six-cylinder, in line, water cooled, supercharging intercooler, compression ignition diesel engine

环保性: 符合欧洲III标准

Environmental protection compliance: compliant with Euro

III standard.

燃油箱容量: 约 300L。

Fuel tank capacity: approx. 300L

1.2 变速箱 Transmission

制造商: 德国 ZF;

Manufacturer: ZF, Germany

型式: 自动变速箱;

Type: automatic transmission

型号: 6WG210;

Model: 6WG210

具有 6 个前进档和 3 个倒退档, 速比: 5.562、3.615、2.255、1.466、0.942、0.613,

R5.274、2.138、0.894。

6-forward and 3-reverse speed, gear ratio: 5.562, 3.615, 2.255, 1.466, 0.942, 0.613,

R5.274, 2.138, 0.894

1.3 车桥及悬架 Axle and Suspension

德国 kessler 专为越野轮胎起重机开发的产品。

Developed by German Kessler for our RTs。前后桥均为转向驱动桥, 承载能力大, 可靠性高, 维护简便。

Both front axle and rear axle are driven, they have heavy load-bearing capacity and high

reliability, and are easy to maintain.

前桥与车架之间刚性连接；后桥采用刚性锁死的摆动式液压悬架。公路行驶时后悬架可通过摆动机构、悬架油缸实现减震功能，缓冲路面冲击；吊重行驶时可将后悬架油缸锁止至刚性状态，满足吊重行驶要求。

Front axle is connected with frame rigidly; swing, rigidly lockable hydraulic suspension is used for rear axle. The shock absorption function of rear suspension may be performed through the swing mechanism and suspension cylinder when driving on roads, consequently road shock is buffered and travel smoothness is improved; the rear suspension cylinder may be locked to rigid state so as to meet the requirement for travel with a load suspended.

1.4、轮胎 Tire

29.5R25 的子午线轮胎，承载能力大，专用的越野花纹轮胎，适合越野轮胎起重机的各种使用工况要求。

Radial ply tire, 29.5R25, heavy load-bearing capacity, with specialized off-road tire patterns, compliant with the working condition requirements of rough terrain crane

1.5、转向 Steering

全液压电比例多模式转向，具有前桥独立转向、小转弯转向、蟹行转向和后桥独立转向功能。

Full hydraulic electro-proportional multi-mode steering: front axle independent steering, small turning radius steering, crab walk steering and rear axle independent steering are available.

车轮转角自动切换功能：当转台转动角度超过 90° 行车时，控制系统通过安装在转台上的位置传感器发出信号控制转向器与前轴转向油缸之间的液压换向阀，从而实现车辆反方向行驶时，方向盘转动方向与行驶方向一致，符合驾驶员的操作习惯。

Switch over of wheel turning direction: when the vehicle is driving while the turntable is turned over 90°, the control system will send a signal through the position sensor fitted on the turntable for controlling the hydraulic change valve between the steering wheel and the change cylinder of front axle. And then the vehicle drives in reverse direction, and the rotating direction of the steering wheel is the same as that for forward driving, which fits operator's operating habit.

1.6、制动 Brake

行车制动：双回路全液压盘式制动，作用于所有车轮；并且当系统压力过低时，具有自动制动功能。

Service brake: double-circuit full-hydraulic disc brake, acting on all wheels; when the pressure in braking system is too low, automatically braking function works.

驻车制动：弹簧加载，液压解除的独立盘式制动器，作用于前桥。

Parking brake: spring-loaded brake, hydraulic-released independent disc brake, acting on front axles;

1.7、结构件 Structural members

转台、车架采用细晶粒高强度钢焊接而成，抗扭转大截面框架结构，承载能力强。支腿箱体位于车架两端，具有前后牵引装置。

Turntable and frame are made of fine grained high strength steel, with anti-torsion large cross-section frame structure, has heavy load-bearing capacity.

Outrigger boxes are located at both sides of chassis frame. Front and rear towing brackets are available.

设计过程中运用有限元分析计算对核心结构进行优化，使用了先进的零阶设计优化方法和先进的优化工具如最优梯度法、乘子计算法、拓扑优化技术等高级有限元优化分析方法，

During design, core structure is optimized through finite element analysis and calculation, advanced Zero-order optimum design method and advanced optimization tool are employed, such as optimum gradient method, multiplier calculations and topological optimization technology.

1.8、液压系统 Hydraulic system

起重部分采用电控先导操纵系统，先导阀采用进口电比例控制阀，先导阀手柄移动的角度与输入电流成正比，主操纵阀的阀芯开口位移与先导阀输入电流也成正比，主操纵阀的阀芯位移与马达、油缸等执行原件的运动速度也成正比，整机具有良好的微动性。主操纵阀为负载敏感控制多路换向阀，执行元件的运动速度与负载大小无关，操作者移动先导手柄的力和负载的大小也无关，先导操作系统具有良好的舒适性。采用恒功率变量泵控制方式，通过负载反馈使泵的压力、流量自动调节到最佳大小，使控制性能和节能效果大为提高。

Hydraulic system for lifting operation: in the electro-proportional control system, the pilot valve is an imported electro-proportional control valve. The moving angle of the pilot valve handle is directly proportional to the input current, and the valve spindle displacement of main control valve is directly proportional to the input current of the pilot valve, as well as the moving speed of actuator such as motor and oil cylinder. Thus fine inching control is available in the whole machine. The main control valve is load sensitive multi-way change valve. The speed of actuator and the force that operator moves the pilot handle have no relationship with load, so better comfort is gained in the pilot control system.

Constant power variable displacement pump control may optimize pump pressure, flow via load feedback, and make improvement in control performance and energy saving effect.

起升具有轻载高速、重载低速的特点。

Winch system has features of high speed with light load and low speed with heavy load.

变幅采用重力下放，节能性好。

Free fall is adopted in the elevating system, energy saving.

回转微动性好、旋转平稳。

Fine inching control and smooth operation are available in the slewing system.

支腿采用 4 点支撑，电控液压操纵，水平支腿为一级伸缩方式。

Four-point supported outriggers, electrical control and hydraulic operating, one-stage telescoping manner is used for outrigger beams.

液压油箱容量：约 900 升。

Oil tank capacity: about: 900L

液压系统设置有专用的散热器，功率大，能有效降低系统油温。

Special large power radiator fitted in the hydraulic system may effectively reduce the temperature of oil in the system.

1.9、电气系统 Electric system

24V DC，负极搭铁，2 个蓄电池，照明系统中设置有前大灯，雾灯，倒车灯、转向灯等。

It is supplied by 24V DC from 2 batteries, with negative ground. Illumination includes head lamp, fog lamp, reversing lamp and steering lamp, etc.

起重作业的控制系统采用电控先导控制，操作简单、舒适，灵敏度高，可无级调速。

Electro-proportional control is adopted in the control system for lifting operation, it is easy and convenient to operate, as well as sensitive and speed adjustable infinitely.

1.10、回转支承 Slewing ring

回转支撑采用单排四点接触球式，可 360°连续全回转，回转支承滚柱轨道密封可防水防尘。

Single-row four-point ball contact slewing ring, it can slew 360° continuously, roller raceway seal is water proof and dust proof.

回转机构采用液压马达驱动，内置行星齿轮减速，内置常闭式制动器。回转速度可无级调速。

Slewing system is driven by a hydraulic motor, with built-in planetary gear reducer and normally closed brake fitted. Slewing speed may be regulated infinitely.

1.11、主/副起升机构 Main/auxiliary hoist system

液压马达驱动，内置行星齿轮减速机和常闭式制动器，抗缠绕钢丝绳。主、副起升机构单独运转。

Driven by a hydraulic motor, with build-in planetary gear reducer, normally closed brake and anti-winding wire rope equipped. Main and auxiliary hoist systems can be operated separately.

主起升机构，单绳拉力 66KN，钢丝绳直径 $\phi 18\text{mm}$ ，长度 245m。

Main hoist system: single line pull is 66KN, diameter of wire rope is 18mm, and rope length is 245m;

副起升机构，单绳拉力 66KN，钢丝绳直径 $\phi 18\text{mm}$ ，长度 145m。

Auxiliary hoist system: single line pull is 66KN, diameter of wire rope is 18mm, and rope length is 145m.

1.12、变幅机构 Elevating system

1 根装有平衡阀的双作用油缸

One double-acting oil cylinder with a balance valve equipped.

变幅角度：-2°~80°

Elevating angle: -2°~80°

1.13、主起重臂 Boom

由 1 节基本臂和 4 节伸缩臂组成，采用抗扭曲设计，高强度结构钢制造，吊臂截面为四边形大圆弧，起重作业稳定性好。双缸绳排伸缩机构，同步+顺序伸缩。臂头标配 7 个滑轮。

It consists of one base boom and four-telescoping section, is made of high strength structural steel, with quadrilateral cross section. Anti-torsion design is adopted. Good stability in the lifting operation is available. Double-cylinder plus ropes telescoping mechanism is for synchronous plus sequential telescoping. Seven pulleys on boom head are standard.

1.14、操纵室 Operator' s cab

驾驶、操纵作业室一体化设计，外观简洁、动感。全天候大圆弧玻璃视角开阔；人机工程设计的内部空间，宽敞舒适。配置冷暖空调。Cab of integrated design is simple and artistic. It is all-weather and streamlined and has a wide field of view, as well as spacious and comfortable due to ergonomic inner design. Air conditioner and heater are equipped in the cab.

1.15、安全装置 Safety devices

液压系统配置液压平衡阀、液压溢流阀、液压双向锁等装置，保证系统稳定安全。Hydraulic balance valve, hydraulic relief valve, double-way hydraulic valve, etc are fitted in the hydraulic system so as to ensure the system stable and safe.

赫思曼力限器系统，采用先进的微处理器技术，其功耗小、功能强、灵敏度高、操作简便。大屏幕的液晶显示器，以中文和图形方式显示力矩百分比、实际起重量、额定起重量、幅度、吊臂长度、角度、最大起升高度、工矿代码、倍率、限制角度、信息代码等起重作业参数。具有完整的预先报警、超载停止作业功能。系统还具有超载记忆功能（黑匣子）和故障自诊断功能。

Hirschmann Load moment limiter system with advanced micro-processing technology employed, has features of less power consumption, powerful function and high sensitivity, and is easy to operate. LCD with large screen will show the lifting operation data, such as moment percentage, actual lifting capacity, rated lifting capacity, working radius, boom length, boom angle, max. lifting height, working condition code, parts of line, limited angle, information code, etc. by means of Chinese and graphical symbol. It has complete forewarning and overloading cutout function, as well as overloading memory (black box) and fault self-diagnosis function.

卷扬设置三圈保护器，防止钢丝绳过放。

Lowering limiter is equipped in winch to prevent rope over-releasing.

臂头设置高度限位，防止钢丝绳过卷。

Anti-two block is fitted on the boom head to prevent rope over-winding.

1.16、配重 Counterweight

自拆装组合式配重。Self-erecting combined counterweight

0 吨、5 吨、10 吨三种作业工况。

Three working conditions separately with 0t, 5t and 10 t of counterweight fitted

1.17、副起重臂 Jib

高强度钢焊接，桁架式结构副臂加箱形结构，第一节长度为 10m，两节总长度为 17.5m；安装角度 0°、15°、30°；

行驶时可附在主臂侧面。

Made of high strength steel, one section is lattice and another is box structure, the 1st jib section is 10m long, total length is 17.5m, three offset angles of 0°, 15° and 30°.

It may be stowed along the side of boom when the crane is driving on a road.

1.18、吊钩 Hook block

序号 No.	起重量 (t) Hook capacity	滑轮组 Sheave block	重量 (kg) Weight of hook block	数量 Qty	备注 Remark
1	90	7	995	1	单钩 Single
2	50	4	500	1	单钩 Single
3	5	0	250	1	单钩 Single

1.19 随机备件及工具 Supplied spare parts and tools

配备一套随机工具和易损件。

A set of supplied spare parts and tools is provided.

1.20、颜色 Colour

主体色调：工程黄色。

Main colour: engineering yellow

二、越野轮胎起重机主要配套件明细表

Rough Terrain Crane Main Parts List

(以产品实物为准、可根据用户需求选择不同配置)

(Take real parts as standard, various options are available)

序号 No.	名称 Name	企业名称 Suppliers
1	回转支承 Slewing ring	徐州罗特艾德回转支承有限公司 Xuzhou Rothe Erde Slewing Bearing Co., Ltd.
2	主卷扬减速机 Main winch reducer	泰安泰山福神齿轮箱有限责任公司 Tai'an Taishan Fushen Gearbox Co., Ltd.
	副卷扬减速机 Auxiliary winch reducer	泰安泰山福神齿轮箱有限责任公司 Tai'an Taishan Fushen Gearbox Co., Ltd.
3	回转减速机 Slewing reducer	泰安泰山福神齿轮箱有限责任公司 Tai'an Taishan Fushen Gearbox Co., Ltd.
4	回转马达 Slewing motor	贵州力源 Guizhou Liyuan
5	主副起升马达 Main and auxiliary winch motors	意大利萨姆 SAMHYDRAULIK Italy
6	主阀 Main valve	布赫液压有限公司 Bucher
7	主副卷扬钢丝绳 Main and auxiliary winch ropes	欧洲钢缆 Euro wire rope
8	发动机 (欧三) Engine (Euro III)	美国康明斯 Cummins, US
9	变速箱 Transmission	德国ZF ZF, Germany
10	车桥 Axle	德国Kessler Kessler, Germany
13	操纵室 Operator's cab	湖北齐星 Hubei qixing
14	变幅油缸 Elevating cylinder	成都成缸液压/徐工液压件有限公司 Chengdu Hydraulic Cylinder Co., Ltd. /Xuzhou Hydraulic Parts Co., Ltd. XCMG
15	伸缩油缸 Telescoping cylinder	成都成缸液压/徐工液压件有限公司 Chengdu Hydraulic Cylinder Co., Ltd. /Xuzhou Hydraulic Parts Co., Ltd. XCMG
16	水平油缸 Extension cylinder	张家口长宇工程机械液压油缸有限公司/徐工液压件有限公司 Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd. / Xuzhou Hydraulic Parts Co., Ltd. XCMG
17	垂直油缸 Jack cylinder	张家口长宇工程机械液压油缸有限公司/徐工液压件有限公司 Zhangjiakou Changyu Construction Machinery Hydraulic Cylinder Co., Ltd. / Xuzhou Hydraulic Parts Co., Ltd. XCMG
18	力矩限制器 Load moment limiter	徐州赫思曼电子有限公司 Xuzhou Hirschmann Electronics Co., Ltd.
19	先导手柄 Pilot handle	英国 P&G (上海派芬代理) P & G (Shanghai pal-fin) 意大利 (上海森色代理) 3B6

三、RT90E 越野轮胎起重机性能参数

III. RT90E Rough Terrain Crane Specifications

遵从于技术改进 Subject to technology improvement

1、行驶状态主要技术参数表

1. Main technical data in travel configuration

类别 Category	项目 Item		参数 Parameter	允差范围 Allowance
尺寸 参数 Dimension	整机全长 Overall length		14050	±1%
	整机全宽 Overall width		3400	-1%~0
	整机全高 Overall height		3990	-1%~0
	轴距 Wheel base		4380	±1%
	轮距(前/后) Track (front/rear)		2554	±1%
	前悬/后悬 Front/rear overhang		2105/2240	±1%
	前伸/后伸 Front/rear extension		5055/0	±1%
重量 参数 Weight	行驶状态总质量 Total mass in travel configuration		58000	±3%
	轴荷 Axle load	一轴 1st Axle	30350	±3%
		二轴 2nd Axle	27650	±3%
行驶 参数 Travel	最高行驶速度 Max. travel speed		36	≥
	最小转弯半径 Min. turning radius		6.7 (四轮), 11.5 (两轮) 6.7 (4 wheels), 11.5 (2 wheels)	±3%
	最小离地间隙 Min. ground clearance		440	±1%
	接近角 Approach angle		22.5	±1°
	离去角 Departure angle		20	±1°
	制动距离(制动初速度为24km/h) Braking distance (at 24 km/h)		9	≤
	最大爬坡度 Max. grade-ability		60	≥
	耳旁噪声 Noise at seated position		80	≤
	发动机型号 Engine model		QSL8.9	/
	发动机最大功率 Max. engine power		209	/
动力 参数 Power	发动机额定转速 Engine rated rotation speed		210	/
	发动机排放标准 Engine emission standard		非公路 欧三 Off-road, Euro III	/
	驱动型式 Driving type		4×2, 4×4	/
	轮胎规格 Tire specifications		29.5R25	/
	轮胎数 Number of tires		4	/

2、起重机作业状态主要技术参数表

2. Main technical data for lifting operation

类别 Category	项目 Item			参数 Parameter	允差范围 Allowance	
主要性能参数 Main performance	最大额定总起重量 Max. rated lifting capacity			t	90	±5%
	最小额定幅度 Min. rated working radius			m	2.5	±1%
	转台尾部回转半径（平衡重） Slewing radius at turntable tail (at counterweight)			mm	4625	±1%
	最大起重力矩 Max. load moment	基本臂 Base boom		kN·m	3140	±5%
		最长主臂 Fully-extended boom		kN·m	1536	±5%
	支腿距离 Outrigger span	纵向 Longitudinal		m	7.8	±1%
		横向(全伸/半伸) Lateral(fully/half extended)		m	7.6/6.5	±1%
	起升高度 Lifting height	基本臂 Base boom		m	12.4	±1%
		最长主臂 Fully-extended boom		m	46.2	±1%
		最长主臂+副臂 Fully-extended boom + Jib		m	67.9	±1%
	起重臂长度 Boom length	基本臂 Base boom		m	11.9	±1%
		最长主臂 Fully-extended boom		m	46	±1%
		最长主臂+副臂 Fully-extended boom + Jib		m	63.5	±1%
	副臂安装角 Jib offset angle			°	0°, 15°, 30°	±1°
	工作速度 Working speed	主臂起臂时间 Time for boom raising			s	110
主臂全伸时间 Time for boom extending fully			s	155	≤	
最大回转速度 Max. slewing speed			r/min	2.0	≥	
支腿收放时间 Outrigger extending/ retracting time		水平支腿 Outrigger beam	同时放 Simultaneously extending	s	40	≤
			同时收 Simultaneously retracting	s	30	≤
		垂直支腿 Outrigger jack	同时放 Simultaneously extending	s	55	≤
			同时收 Simultaneously retracting	s	40	≤
起升速度 (空载四层) Hoisting speed (at 4th layer, no load)		主起升机构 Main winch		m/min	125	≥
		副起升机构 Auxiliary winch		m/min	125	≥

3、RT90E 越野轮胎起重机起重性能表

3. RT90E Rough Terrain Crane Load Charts

表 3-3 支腿作业额定起重量表(t)

Table 3-3 Rated lifting load for boom with the crane on outriggers(t)

支腿全伸 7.6m 配重 10t 360° 全回转作业 With 10t of counterweight, on fully-extended outriggers 7.6 m, 360° operation of the boom							
R/L	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						
3.5	80	67.5					
4	78.1	62	50				
5	63.8	55.1	47.8	34.8			
6	53.4	48.2	42.3	32.5			
7	45.3	42.4	38.4	30.9	23.5		
8	36	35.1	34.6	27.7	21.4		
9	27.8	27.1	26.6	24.8	19.8	16.6	
10		21.6	21.2	23	18.5	15.6	13.4
12		14.7	14.3	16	16.3	14.0	12.2
14			10.1	11.7	12.7	12.1	11.1
16			7.3	8.8	9.7	10.3	9.8
18				6.7	7.6	8.2	8.4
20				5.1	6	6.6	6.8
22				3.9	4.8	5.3	5.5
24					3.8	4.3	4.5
26					3	3.5	3.7
28					2.3	2.8	3
30					1.7	2.2	2.4
32						1.7	1.9
34						1.3	1.4
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩 (991Kg) 90t (991)		50 吨钩 (400Kg) 50t (400)				
最大仰角 Max. boom angle (°)	70.7	73	75.8	78.3	78.5	78.8	78.9
最小仰角 Min. boom angle (°)	18.5	30.4	29	29.8	25.4	35.4	42
二节臂 2nd boom	0%	50%	100%	100%	100%	100%	100%

section							
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-4 支腿作业额定起重量表 (t)

Table 3-4 Rated lifting load for boom with the crane on outriggers (t)

支腿全伸 7.6m 配重 5t 360° 全回转作业 With 5t of counterweight, on fully-extended outriggers 7.6 m, 360° operation of the boom							
R/L	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						
3.5	80	67.5					
4	78.1	62	50				
5	63.8	55.1	47.8	34.8			
6	53.4	48.2	42.3	32.5			
7	40.9	39.8	38.4	30.9	23.5		
8	29.6	28.7	28.2	27.7	21.4		
9	22.7	21.9	21.4	23.4	19.8	16.6	
10		17.3	16.9	18.7	18.5	15.6	13.4
12		11.4	11	12.7	13.8	14.0	12.2
14			7.5	9	10	10.7	10.9
16			5.1	6.6	7.5	8.1	8.3
18				4.8	5.7	6.3	6.5
20				3.5	4.4	4.9	5.1
22				2.4	3.3	3.8	4
24					2.5	3	3.2
26					1.8	2.3	2.5
28					1.2	1.7	1.9
30					0.7	1.2	1.4
32						0.8	0.9
34							0.6
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩 (991Kg) 90t (991)		50 吨钩 (400Kg) 50t (400)				
最大仰角	70.7	73	75.8	78.3	78.5	78.8	78.9

Max. boom angle (°)							
最小仰角 Min. boom angle (°)	18.5	30.4	29	29.8	25.4	40.3	42
二节臂 2nd boom section	0%	50%	100%	100%	100%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-5 支腿作业额定起重量表(t)

Table 3-5 Rated lifting load for boom with the crane on outriggers (t)

支腿全伸 7.6m 配重 0t 360° 全回转作业 With 0t of counterweight, on fully-extended outriggers 7.6 m, 360° operation of the boom							
	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						
3.5	80	67.5					
4	78.1	62	50				
5	63.8	55.1	47.8	34.8			
6	50.2	48.7	42.3	32.5			
7	32.5	31.4	30.8	30.9	23.5		
8	23.2	22.3	21.8	24	21.4		
9	17.5	16.7	16.3	18.3	19.5	16.6	
10		13	12.5	14.4	15.6	15.6	13.4
12		8.1	7.8	9.4	10.5	11.2	11.4
14			4.9	6.4	7.4	8	8.2
16			2.9	4.4	5.3	5.9	6.1
18				2.9	3.8	4.4	4.6
20				1.8	2.7	3.3	3.4
22				1	1.8	2.4	2.6
24					1.1	1.7	1.8
26					0.5	1.1	1.2
28						0.6	0.8
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩(991Kg) 90t (991)		50 吨钩 (400Kg) 50t (400)				
最大仰角	70.7	73	75.8	78.3	78.5	78.8	78.9

Max. boom angle (°)							
最小仰角 Min. boom angle (°)	18.5	30.4	29	29.8	39.4	48.7	53
二节臂 2nd boom section	0%	50%	100%	100%	100%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-6 支腿作业额定起重量表(t)

Table 3-6 Rated lifting load for boom with the crane on outriggers (t)

支腿半伸 6.5m 配重 10t 360° 全回转作业 With 10t of counterweight, on half -extended outriggers 6.5m, 360° operation of the boom							
R/L	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						
3.5	80	67.5					
4	78.1	62	50				
5	63.8	55.1	47.8	34.8			
6	51.6	48.2	42.3	32.5			
7	36.2	35.2	34.7	30.9	23.5		
8	27.2	26.4	25.9	27.7	21.4		
9	21.3	20.6	20.2	22	19.8	16.6	
10		16.6	16.2	17.9	18.5	15.6	13.4
12		11.2	10.9	12.4	13.4	14.0	12.2
14			7.5	9	10	10.6	10.8
16			5.2	6.7	7.6	8.1	8.3
18				5	5.8	6.4	6.6
20				3.7	4.5	5	5.2

22				2.6	3.5	4	4.2
24					2.6	3.1	3.3
26					1.9	2.4	2.6
28					1.3	1.8	2
30					0.8	1.3	1.5
32						0.9	1.1
34						0.5	0.7
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩 (991Kg) 90t (991)			50 吨钩 (400Kg) 50t (400)			
最大仰角 Max. boom angle (°)	70.7	73	75.8	78.3	78.5	78.8	78.9
最小仰角 Min. boom angle (°)	18.5	30.4	29	29.8	25.4	40.3	42
二节臂 2nd boom section	0%	50%	100%	100%	100%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-7 支腿作业额定起重量表(t)

Table 3-7 Rated lifting load for boom with the crane on outriggers (t)

支腿半伸 6.5m 配重 5t 360° 全回转作业 With 5.0t of counterweight, on half -extended outriggers 6.5m, 360° operation of the boom							
R/L	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						
3.5	80	67.5					
4	78.1	62	50				
5	63.8	55.1	47.8	34.8			
6	42.6	41.4	40.8	32.5			

7	29.5	28.6	28	30.3	23.5		
8	22	21.2	20.7	22.7	21.4		
9	17	16.3	15.9	17.7	18.9	16.6	
10		12.9	12.5	14.2	15.3		
12		8.4	8	9.6	10.6	11.2	11.4
14			5.2	6.7	7.6	8.2	8.4
16			3.3	4.7	5.6	6.2	6.4
18				3.3	4.1	4.7	4.9
20				2.2	3	3.6	3.7
22				1.3	2.1	2.7	2.8
24					1.4	1.9	2.1
26					0.8	1.3	1.5
28						0.8	1
30							0.6
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩 (991Kg) 90t (991)		50 吨钩 (400Kg) 50t (400)				
最大仰角 Max. boom angle (°)	70.7	73	75.8	78.3	78.5	78.8	78.9
最小仰角 Min. boom angle (°)	18.5	30.4	29	29.8	39.4	48.7	49.6
二节臂 2nd boom section	0%	50%	100%	100%	100%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-8 支腿作业额定起重量表 (t)

Table 3-8 Rated lifting load for boom with the crane on outriggers (t)

支腿半伸 6.5m 配重 0t 360° 全回转作业 With 0t of counterweight, on half -extended outriggers 6.5m, 360° operation of the boom							
R/L	11.9	16.16	20.42	27.25	34.93	42.6	46
2.5	90						
3	80						

3.5	80	67.5					
4	78.1	62	50.5				
5	56.3	54.7	47.8	34.8			
6	33.5	32.4	31.7	32.5			
7	22.9	22	21.4	23.6	23.5		
8	16.7	15.9	15.4	17.4	18.7		
9	12.7	12	11.6	13.4	14.5	15.3	
10		9.2	8.8	10.5	11.6	12.3	12.5
12		5.5	5.2	6.8	7.8	8.4	8.6
14			2.9	4.4	5.3	5.9	6.1
16			1.3	2.8	3.7	4.2	4.4
18				1.6	2.5	3	3.2
20				0.7	1.5	2.1	2.3
22					0.8	1.3	1.5
24						0.7	0.9
倍率 Parts of line	14	10	8	5	4	3	2
吊钩 Hook capacity (weight)	90 吨钩 (991Kg) 90t (991)		50 吨钩 (400Kg) 50t (400)				
最大仰角 Max. boom angle (°)	70.7	73	75.8	78.3	78.5	78.8	78.9
最小仰角 Min. boom angle (°)	18.5	30.4	29	38.4	49.7	56	59.4
二节臂 2nd boom section	0%	50%	100%	100%	100%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%	56.70%	86.70%	100%
四节臂 4th section	0%	0%	0%	26.70%	56.70%	86.70%	100%
五节臂 5th section	0%	0%	0%	26.70%	56.70%	86.70%	100%

表 3-9 轮胎支承作业额定起重量表（不行驶）(t)

Table 3-9 Rated lifting load for boom with the crane on tires, stationary (t)

轮胎支撑作业 配重 10t 360° 全回转作业 With 10t of counterweight, on tires, stationary, 360°operation of the boom				
R/L	11.9	16.2	20.4	27.3
3	29			

4	22.2	21.6	21.3	
5	17.4	16.7	16.3	17.9
6	12.5	11.8	11.5	12.9
7	9.3	8.7	8.3	9.7
8	7	6.4	6.1	7.4
9	5.3	4.8	4.5	5.8
10		3.5	3.2	4.5
12		1.6	1.4	2.6
14				1.3
倍率 Parts of line	5	4	4	3
吊钩 Hook capacity (weight)	50 吨钩 (400Kg) 50t (400)			
吊臂仰角° boom angle (°)	18.5~68	30.4~71	49~75.8	56.9~78.3
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%
四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%

表 3-10 轮胎支承作业额定起重量表（不行驶）(t)

Table 3-10 Rated lifting load for boom with the crane on tires, stationary (t)

轮胎支撑作业 配重 5t 360° 全回转作业 With 5t of counterweight, on tires, stationary, 360°operation of the boom				
R/L	11.9	16.2	20.4	27.3
3	26.6			
4	19.9	19	18.5	
5	13	12.2	11.8	13.4
6	9	8.3	7.9	9.4
7	6.4	5.8	5.4	6.8
8	4.5	4	3.6	5
9	3.1	2.6	2.3	3.6
10		1.6	1.3	2.6
12				1
倍率 Parts of line	4	3	3	2
吊钩 Hook capacity (weight)	50 吨钩 (400Kg) 50t (400)			
吊臂仰角°	18.5~68	43.9~41	56~75.8	62~78.3

boom angle (°)				
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%
四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%

表 3-11 轮胎支承作业额定起重量表（不行驶）(t)

Table 3-11 Rated lifting load for boom with the crane on tires, stationary (t)

轮胎支撑作业 配重 0t 360° 全回转作业 With 0t of counterweight, on tires, stationary, 360° operation of the boom				
R/L	11.9	16.2	20.4	27.3
3	24.2			
4	13.8	12.9	12.4	
5	8.5	7.8	7.3	9
6	5.4	4.8	4.4	5.9
7	3.5	2.9	2.5	3.9
8	2	1.5	1.2	2.5
倍率 Parts of line	4	2	2	2
吊钩 Hook capacity (weight)	50 吨钩 (400Kg) 50t (400)			
吊臂仰角° boom angle (°)	33~68	54.1~41	63.~75.8	71.6~78.3
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%
四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%

表 3-12 轮胎支承作业额定起重量表 (t)

Table 3-12 Rated lifting load for boom with the crane on tires (t)

轮胎支撑作业，配重 10t，正前方作业， $V \leq 2\text{km/h}$ ，重物离地高度 $\leq 200\text{mm}$

With 10t of counterweight, on tires, boom over front, travel speed $\leq 2\text{km/h}$ The height the load above ground is $\leq 200\text{mm}$				
R/L	11.9	16.2	20.4	27.3
3	21.4			
4	16.1	15.5	15.2	
5	12.4	11.8	11.5	12.8
6	9.7	9.2	8.9	10.1
7	7.6	7.1	6.8	8.1
8	6	5.5	5.2	6.3
9	4.5	4.1	3.8	4.9
10		3	2.7	3.8
12		1.4	1.2	2.2
倍率 Parts of line	4	3	3	2
吊钩 Hook capacity (weight)	50 吨钩 (400Kg) 50t (400)			
吊臂仰角° boom angle (°)	18.5~68	30.4~71	49~75.8	62~78.3
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%
四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%

表 3-13 吊重行驶作业额定起重量表(t)

Table 3-13 Rated lifting load for boom with the crane on tires(t)

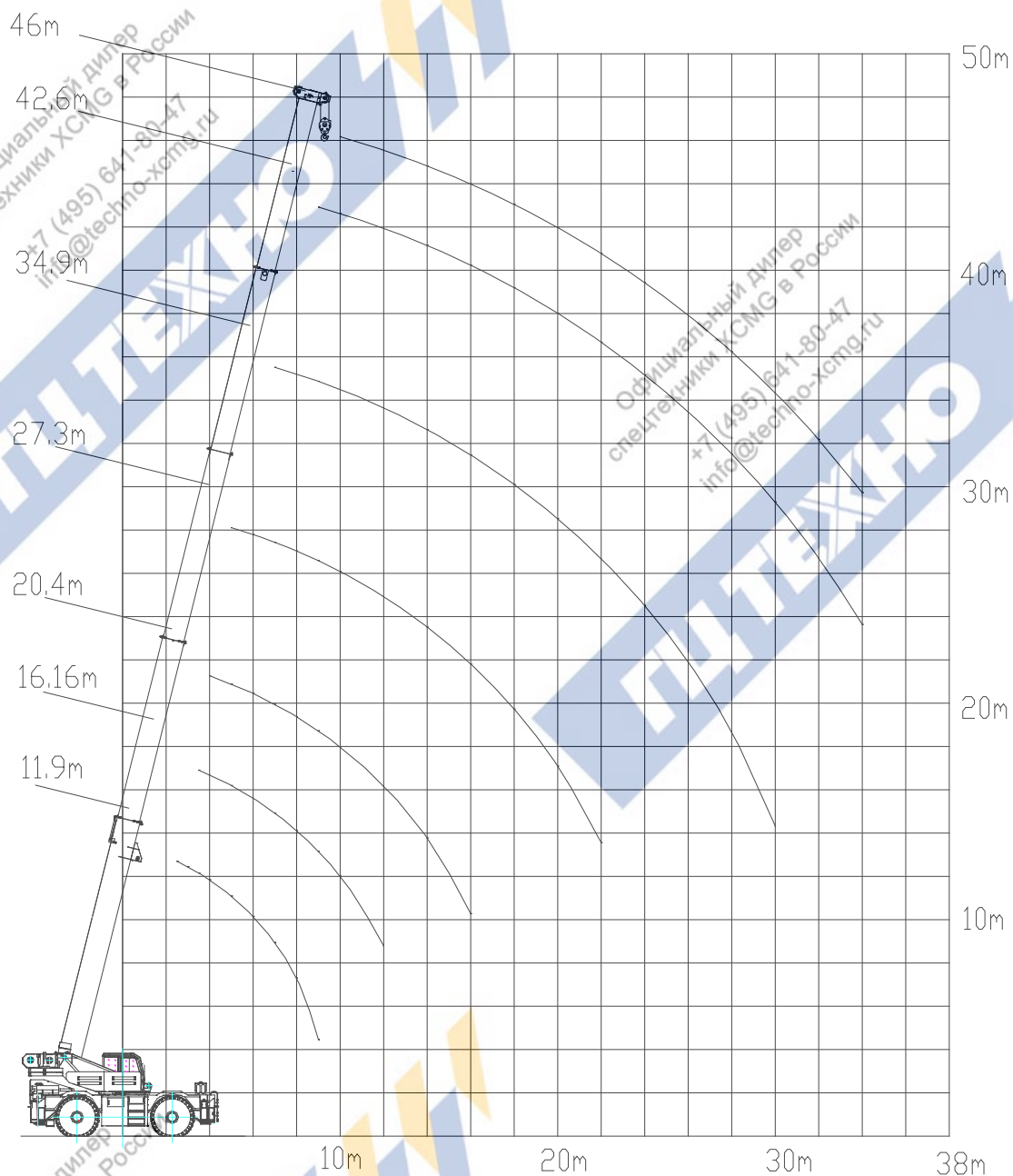
轮胎支撑作业，配重 5t，正前方作业 $V \leq 2\text{km/h}$ ，重物离地高度 $\leq 200\text{mm}$ With 5t of counterweight, on tires, boom over front, travel speed $\leq 2\text{km/h}$ The height the load above ground is $\leq 200\text{mm}$				
R/L	11.9	16.2	20.4	27.3
3	19.1			
4	14.1	13.6	13.3	
5	10.7	10.4	9.9	11.1
6	7.6	7.1	6.8	8
7	5.4	4.9	4.6	5.8
8	3.8	3.4	3.1	4.2
9	2.7	2.2	2	3.1
10		1.4	1.1	2.2
12				0.9
倍率 Parts of line	3	2	2	2
吊钩 Hook capacity (weight)	50 吨钩 (407Kg)			
吊臂仰角° boom angle (°)	18.5~68	43.9~71	56.6~75.8	62~78.3
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%

四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%

表 3-14 吊重行驶作业额定起重量表 (t)

Table 3-14 Rated lifting load for boom with the crane on tires (t)

轮胎支撑作业，配重 0t，正前方作业， $V \leq 2\text{km/h}$ ，重物离地高度 $\leq 200\text{mm}$ With 0t of counterweight, on tires, boom over front, travel speed $\leq 2\text{km/h}$ The height the load above ground is $\leq 200\text{mm}$				
R/L	11.9	16.2	20.4	27.3
3	21.4			
4	11.7	11	10.6	
5	7.2	6.6	6.3	7.6
6	4.6	4.1	3.8	5
7	2.9	2.4	2.1	3.3
8	1.7	1.3	1	2.1
倍率 Parts of line	4	2	2	2
吊钩 Hook capacity (weight)	50 吨钩 (400Kg)			
吊臂仰角° boom angle (°)	33~68	54.1~41	63. ~75.8	71.6~78.3
二节臂 2nd boom section	0%	50%	100%	100%
三节臂 3rd section	0%	0%	0%	26.70%
四节臂 4th section	0%	0%	0%	26.70%
五节臂 5th section	0%	0%	0%	26.70%



工 作 幅 度
起 升 高 度 曲 线