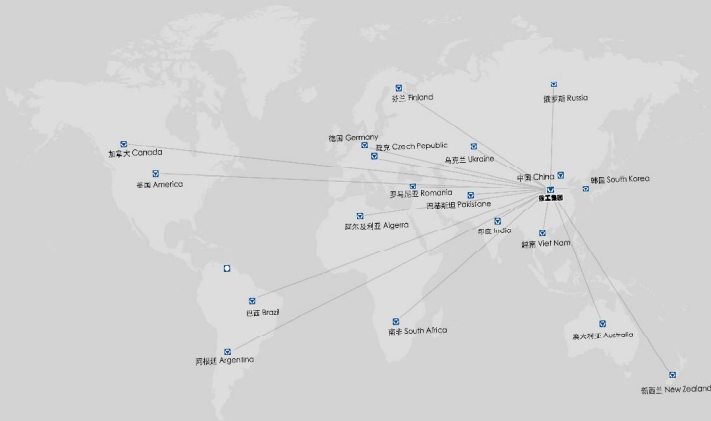


厚积薄发 超越精典

Make Full Preparation and Surpass Classics



## 小型液压挖掘机系列

Small Hydraulic Excavator Series



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徐工徐工 助您成功

XCMG FOR YOUR SUCCESS

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Materials and specifications are subject to change without notice

2013年1版1次印刷

徐工集团挖掘机机械事业部

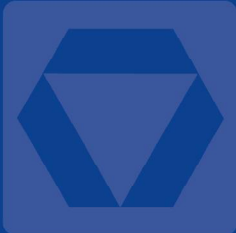
XCMG EXCAVATOR MACHINERY BUSINESS DEPARTMENT

■ 徐工小挖全系列产品，采用国际领先的设计理念及方法，融合世界前沿技术，凭借专业的现代化生产加工工艺，保证每台产品将以卓越的施工质量，超凡的工作效率和优良的操控性能，为每位顾客带来丰厚的回报。

■ 徐工小型液压挖掘机，小巧灵活，具有良好的通过性，在狭小的场地工作自如，可用于市政建设、园林、农田水利等工况施工。

■ Products of XCMG small excavator collection adopt international advanced design philosophy and method, as well as integrate the world cutting-edge technologies. By virtue of its professional and modernized production & machining process, XCMG makes sure that each XCMG product can bring every customer handsome economic return by virtue of prominent construction quality, extraordinary working efficiency, and excellent handling performance.

■ XCMG small hydraulic excavator boasts small size, flexible operation, and favorable trafficability, and it can work freely at small and narrow place. Usually, the excavator is applied in urban construction, landscaping, and irrigation and water conservancy etc.



# 一、性能卓越，动力高效

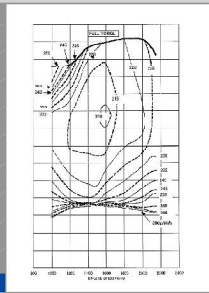
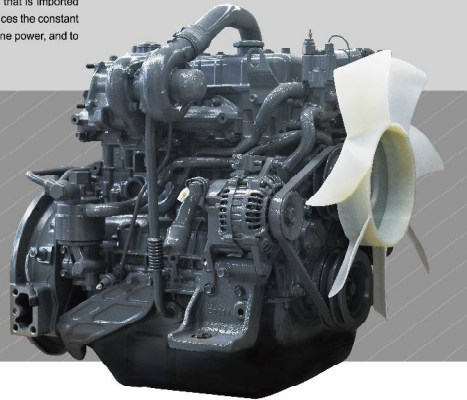


## Superexcellent performance and high-efficiency power

### 强劲高效 Strong Power and High Efficiency

整机采用国际知名品牌原装进口发动机，采用恒功率控制系统，充分发挥发动机功率，为挖掘机提供强劲动力。

The complete vehicle adopts original engine that is imported from international renowned brand. Also, it introduces the constant power control system to give full swing to the engine power, and to provide the excavator with strong power.



#### ● 强化型工作装置，保障强劲挖掘力

工作装置强化升级，特别针对中国用户使用特点，通过优化受力结构，对动臂斗杆和铲斗等部件进行了加强；优质的液压元件及管路能够承受液压系统提升后增强的工作压力，挖掘力得到有效保障。

#### ● Reinforced operation unit ensures the strong digging force

After being upgraded, the operation unit is more tailored to Chinese users. Optimized load-carrying structure helps reinforce such parts as boom, arm, and bucket. Moreover, high-quality hydraulic elements and pipelines are able to bear the enhanced working pressure resulting from improvement of the hydraulic system, and thus the digging force can be ensured efficiently.

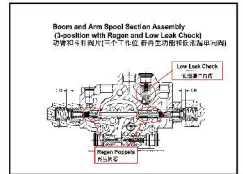


#### ● 快速再生功能，工作速度迅速提高

特别设计了快速再生回路液压系统，斗杆油缸推出时回路油路被切断，液压油通过单向阀快速从回油路进入油缸，斗杆油缸小腔液压油不用回油箱而直接进入油缸大腔，实现了更快的斗杆速度。

#### ● Quick reproduction function. Working speed increases at a fast rate

The excavator is especially equipped with quick reproduction circuit hydraulic system. In the system, the return circuit will be cut off when the arm cylinder is pushed out, and the hydraulic oil will pass through the one-way valve to quickly enter the cylinder from the return circuit. Simultaneously, hydraulic oil in the small cavity of arm cylinder will bypass the oil return tank to directly enter the cylinder's major cavity so as to realize the faster arm speed.



### 节约成本 Save Cost

#### ● 降背压设计，节约能耗

合理的背压设计，在保证回马达补油充分的同时，降低了回油能量损失和液压系统的发热，降低能耗的同时改善液压元件的使用效果，延长了液压件和发动机的使用寿命，系统可靠性更为提高。

#### ● Backpressure decline design and high energy efficiency

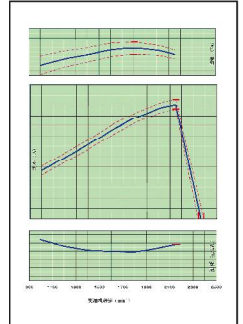
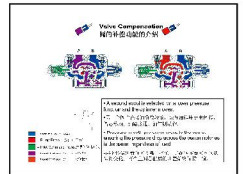
Reasonable backpressure design helps reduce the return oil's energy loss and the hydraulic system's heat production while ensuring the rotary motor's sufficient oil replenishment. In addition to reducing the energy consumption, such design can improve the hydraulic elements' operating effect, prolong the hydraulic parts and engine's service life, and raise the system reliability.

#### ● 最佳的功率匹配，节能最大化

通过合理匹配发动机和液压泵的功率特性，使小型挖掘机在常用的工作转速区域内最大效率的吸收发动机功率，用户可以简单的通过油门转速获得最经济的作业效率和最佳的燃油消耗。配备的怠速功能还可以帮助使用者自动减少因空载造成的发动机磨损和燃油消耗，避免了能源的浪费。

#### ● Optimal power configuration, and maximized energy efficiency

By reasonably integrating the engine and hydraulic pump's power factors, XCMG enables the small excavator to assimilate the engine power at the maximum efficiency in the frequent service speed zone, and users can acquire the most economical operating efficiency and the optimal fuel consumption by the accelerator rotating speed. Also, the idling speed function can assist the operator in reducing the engine wear and fuel consumption resulting from empty load, as a way to avoid the energy waste.



## 二、坚固可靠，持久耐用

Firm, Reliable, Durable



### ● 负载敏感系统，系统流量“所得即所需”，节约能耗并可防止发动机过载

负载敏感控制的液压系统，其特点就是主泵功率与工作装置负载压力信号成正比。工作装置负载的压力通过主阀反馈至主泵，主泵根据反馈信号的变化对泵功率进行实时调节，从而实现了系统功率流量的实时匹配，达到“所得即所需”。当负载压力过大，泵功率进入全功率区间后，主泵降低流量以获得负载需要的工作压力，从而保护发动机，避免过载情况的发生。挖掘机的电子控制模块与发动机机油、燃油、冷却液和进气系统传感器高度集成，对系统状况实时监控，保证了挖掘机在满负荷工作时的可靠性。

### ● Load sensitive system, "Acquired and Required" system flow, high energy efficiency, no engine overload

Hydraulic system with load sensitive control features direct proportion between the primary pump power and operation unit's load pressure signal. Through the primary valve, the operation unit's load pressure will be fed back to the primary pump, which will make real-time adjustment to the pump power according to the signal feedback's fluctuation. That will realize the real-time configuration to system power flow and achieve the "acquired and required" power flow. In the event that the load pressure is exorbitant, after the pump power stays in the full power range, the primary pump will reduce the flow to acquire the working pressure needed by the load, so as to protect the engine and avoid overload. It is worth pointing out that the excavator's electronic control module is highly integrated with the engine oil, fuel, coolant, and air intake system sensor, which can realize real-time monitoring to the system and ensure the excavator's reliability in full-load working state.



### ● 抗腐蚀性铝冷却器提供最佳的散热效果

采用全铝并联冷却器，散热效率高，抗腐蚀性和污垢能力强。系统安全储备大，可以满足用户在不同区域的使用。独立的防护网设计，便于用户进行维护保养，减少停机维护时间。

### ● Anti-corrosion and all-aluminum condenser contributes to superior heat-dissipating effect

The excavator adopts the all-aluminum condenser in parallel connection, which boasts high heat-dissipating effect and strong anti-corrosion and anti-fouling ability. Since the system has high safety margin, it can be used in different regions. Needless to say, its independent protective mesh design facilitates users to execute maintenance, as well as helps reduce the maintenance downtime.

### 高品质零部件 High-quality parts

#### ● 四轮一带的强化设计

支重轮、引导轮均采用机油封入式润滑，使用寿命长，润滑脂润滑保证履带销和衬套耐磨，行走噪音低。

拖链轮采用强化型防脱链设计，特别适合国内使用工况。

履带采用合金钢轧制的三齿结构，具有良好的接地特性、稳定性和耐久性；履带链结采用标准规格，但材料及热处理要求均高于国内一般厂家的要求，保证与铸件同时提高强度，能够承受因机器在不平坦区域行走和转向时产生的冲击。



#### ● Four-wheel and one-chain enhanced design

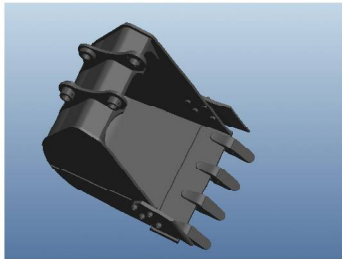
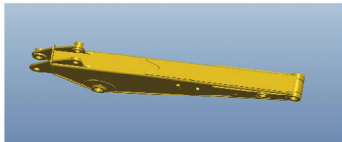
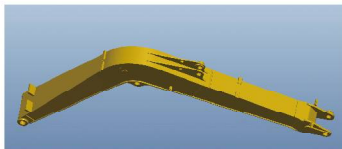
Both support wheel and guide wheel adopt the oil filling type lubrication, making them have long service life. Moreover, lubrication by lubricating grease can ensure the track pin and bushing's wear-resistance performance and mitigate the traveling noise.

Drag sprocket adopts the intensified anti-disengagement design, which is especially tailored to domestic working condition. Moreover, the crawler adopts the three-gear structure rolled by the alloy steel, which features favorable grounding performance, stability, and durability. In addition, the crawler linkage adopts the standard specification, but the material and hot processing requirements are superior to domestic ordinary manufacturers' requirements, in order to ensure the exchangeability and improve the strength. Due to this, the excavator can bear the impact resulting from its driving and steering on uneven places.

● 动臂斗杆采用大型箱式结构

动臂：大型箱式结构的动臂，重要部分进行了充分的加强，较其他厂家着重提高了前部支撑强度和后部支撑的板材厚度，并在内部加焊抗扭板，外观结构紧凑，坚固耐用，防止挖掘力过大和侧向载荷时发生的动臂变形和开裂。

斗杆：斗杆后支撑进行了特别加强，并在内部加焊抗扭板，保证斗杆在复杂工况下结实耐用不开裂，挖掘力大时不变形。



● Boom and arm adopt the large box-type structure

Boom: the boom in large box-type structure has been reinforced at major parts. As compared to products of other manufacturers, the excavator's frontal supporting strength and rear supporting plate thickness are enhanced, and also the anti-torsion plate is welded inside the boom. Therefore, the boom is compact in structure and firm in application, which can avoid the boom distortion and crack resulting from large digging force and lateral load.

Arm: the arm's rear support is especially reinforced, and the anti-torsion plate is welded inside the arm, which can ensure the arm's firmness and service durability in complicated working condition, and avoid deformation from the large digging force.

● 标准化铲斗设计及多种可选工作辅具

徐工通过长期对土方施工设备的研究，建立了完善精准的挖掘机铲斗设计理论和设计模型，通过对通用性强化铲斗、土铲斗和特殊用途铲斗的不同材料配置，提高了铲斗的使用寿命，减小了挖掘和装载阻力，充分满足用户各种工况的施工需求。提供多种宽度和斗容规格的铲斗供用户选择，同时多路阀标配备用联，方便用户安装多种工作辅具。

● Standardized bucket design and diversified auxiliary tools (optional)

By virtue of its long-term study on the earthwork construction equipments, XCMG has developed consummate and precise excavator bucket design theories & models. By configuring different materials of the general intensified bucket, earthwork bucket, and special-purpose bucket, XCMG has raised its bucket's service life and reduced the excavating and loading resistance, which can fully meet different users' construction demands in different working situations. Aside from providing users with buckets of different widths and capacity specifications, XCMG also offers the "multiple unit valve plus standby link" solution so as to facilitate users to mount a variety of auxiliary tools.

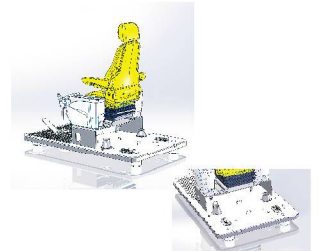
三、高品质人性化舒适性 →

High-quality and people-oriented comfort

高品质驾驶享受 High-quality driving experience

● 新型硅油橡胶减振器

驾驶室底板支撑采用新型硅油橡胶减振器，多点支撑固定于回转平台，使由于路面不平或机器颠簸等对驾驶室产生的振动得到最大限度的减少，大大改善了驾驶室的平稳性，提高了驾驶室的工作舒适性。



● New-type silicon oil rubber damper

The cab's chassis bracket adopts the new-type silicon oil rubber damper, which are supported by multiple points and fastened at the revolving frame. That will greatly alleviate the cab vibration resulting from uneven road or equipment bumping, and in turn raise the cab stability and improve the cab's operating comfort.

● 优良的密封性设计

驾驶室均符合TOPS标准，为操作人员提供更为安全的操作空间。通过对驾驶室的优化设计，改进了传统驾驶室前窗及门边的密封形式，提高了驾驶室的防尘能力，保证驾驶室内部的整洁和安静。



● Excellent sealing performance

The cab accords with TOPS standard and provides operators with safer operation space. By optimizing the cab design, XCMG improves traditional cab's front window and door rim sealing mode, enhances the cab's dust-resistance ability, and ensures its interior neatness and quietness.

● 多功能液晶显示屏

大型多功能液晶监视器可以保证进行安全、精准和平稳的工作。通过采用在各个角度和光线条件时都可以方便阅读的液晶显示，提高了显示屏的可视性。开关布置合理，满足人机工程需求；操作简单，界面简洁易懂。



● Multifunctional LCD Monitor

Large-size multifunctional LCD monitor can ensure the equipment's safe, precise, and stable running.

By adopting the liquid crystal display that facilitates the reading in different angles and different lighting situations, XCMG improves the display screen's visibility. Furthermore, switches are arranged in a reasonable manner, which meets the ergonomic demands. To sum up, the LCD monitor features simple operation and succinct and readable interface.

● **大功率冷暖空调**

大功率冷暖空调可以净化驾驶室内空气，保持室内空气清新。优化的风道设计可实现快速制冷和升温，全年保证驾驶室内适宜的温度，操作面板采用性能可靠地机械式旋钮，风格简约，操作方便。

● **Large-power air conditioning**

Large-power air conditioning can purify the air in the cab and ensure the interior air's freshness. Besides, the optimized air duct design is conducive to quick refrigeration and heating, which will ensure the cab inside's moderate temperature all the year. Thanks to adoption of high-performance and reliable mechanical knob, the operation panel boasts concise style and high operation convenience.

● **多自由度可调节座椅与抗污面料**

徐工小型挖掘机使用的座椅具备多自由度可调功能，可以根据不同驾驶员的操作习惯调整座椅和扶手的姿态，座椅面料采用与国际知名品牌联合研制的抗静电、耐磨织物面料，提高座椅透气性，驾乘感舒适。

● **Operating unit tailored to Chinese users' operating habits**

The control lever and operating handle tailored to Asian users are designed according to the ergonomics principle. In addition to its convenient operation and small operating force, the operating unit has reasonable operating button layout, making the driver touch the button easily.



● **内部材料阻尼性能好，吸音效果佳**

新款驾驶室内部材料阻尼性能好，吸音效果佳，海绵可减少噪声的进入，降低发动机噪音对驾驶员的影响，为驾驶员提供一个安静而整洁的驾驶环境。

● **Interior materials feature favorable damping performance and good sound-absorbing effect**

The new-type cab's interior materials feature favorable damping performance and good sound-absorbing effect. To be specific, the sponge will help prevent the noise from entering the cab, as well as mitigate the engine noise's influence on the driver, so as to provide the driver with a quiet and neat driving environment.



● **使用过程的设计安全**

液压操作设计了安全锁定时，当锁定时处于锁定位置时，操纵手柄无效，能够有效防止无意识操作引发的安全事故。

工作装置的回路设计有保持阀，当设备处于停机状态时，可最大限度的减少因重力作用造成的油缸下沉。

推土铲配置液压锁，避免使用推土铲时发生油管爆裂造成的车辆失稳风险。

● **Design Safety during the Application Process**

In hydraulic operation, XCMG has designed the safety lock rod. When the lock rod stays at the lock position, the operating handle is out of function, which can efficiently avoid safety accidents resulting from unconscious operation.

In the operation unit's hydraulic circuit, there is a retaining valve, which can alleviate the cylinder subsidence resulting from the gravity action when the equipment has been stopped.

Dozer blade plus hydraulic lock can help guard against the vehicle rollover risk, resulting from the oil pipe's blowout during the dozer blade application process.

● **符合中国用户使用习惯的操作装置**

按照人机工程学理念设计符合亚洲人使用的操纵杆和操纵手柄，操作起来特别方便，操纵力小，操作按钮布局合理，驾驶员触手可及。

● **Freely adjustable suspending seat and anti-stain fabric**

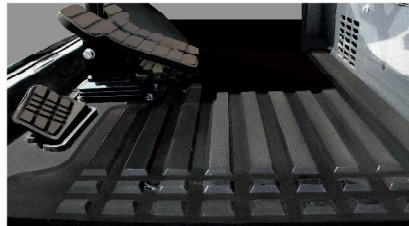
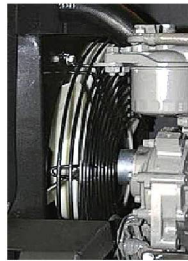
The driver's seat in XCMG small excavator can be adjusted freely, namely, the seat and armrest's postures can be adjusted according to different drivers' operating habits. Particularly, the seat adopts the antistatic and wear-resistant textile fabric that is developed by XCMG in conjunction with international renowned brands. Such fabric can enhance the seat's air permeability, making the driver feel more comfortable during the operating process.

● 维护检修与保养的设计安全

徐工针对小型挖掘机结构紧凑的特点，针对维护检修保养的区域如发动机散热器周边区域设计了专门的防护网和防护罩板进行保护，避免检修时发生危险，并能防止其他物体落入旋转部件损伤风扇、散热器和其他零部件。

● Design Safety for Maintenance, Overhaul, and Service

In view of the small excavator's compact structure, XCMG has designed special protective mesh and protective cover plate to protect the maintenance, overhaul and service zones like engine radiator's surrounding zones, in order to avoid the danger during the overhaul process, and to prevent other objects from falling onto the rotary parts and damaging the fan, radiator, and other components.



● 防滑设计

小型挖掘机驾驶室门及车舱台阶部位，均设计了防滑装置，在使用和保养维护时便人员滑倒摔伤。

● Antiskid design

On the small excavator's cab door and step parts there are antiskid devices, which can avoid the personnel slip and injury during the application and maintenance process.

● 独立泵室设计

液压泵和发动机之间采用隔离设计原则，万一液压系统发生损坏，也不会有液压油喷射至高温的发动机上，避免因此类问题发生火灾的隐患。

● Independent Pump Chamber

Isolated design is adopted between the hydraulic pump and engine, which can prevent the hydraulic oil from spouting onto the high-temperature engine in the event that the hydraulic system is damaged. That will help fend off fire disaster resulting from problems of this kind.



四、便捷的维修保养



Convenient Maintenance and Service

机器设计便于维护 Equipment layout facilitates maintenance

● 机油滤芯及空气滤芯集中布置，维护保养方便

发动机日常检查保养的空气滤芯、机油滤芯等布置符合人机工程要求，只需要打开发动机罩或侧板，即可很容易的接触相关零部件，减少人员作业强度。

● Centralized layout of oil filter element and air filter element facilitates the maintenance and service

Layout of air filter element and oil filter element etc accords with ergonomics principle and facilitates the daily engine maintenance. Relevant components can be easily touched only by opening the engine hood or side board. That helps alleviate the operator's labor intensity.

● 油箱防锈与防腐蚀

徐工挖掘机燃油箱和液压油箱内部全部采用专业防锈和防腐蚀工艺进行处理，能够耐受油液中水分和酸性物质的侵蚀。

● Oil tank's anti-rust and anti-corrosion performance

XCMG excavator's both fuel tank and hydraulic oil tank adopt the professional anti-dust and anti-corrosion process, making them able to resist the erosion by water and acid substances in the oil.



## 2013 年徐工小型挖机产品参数

型号 Model	单位 Unit	XE15	XE40	XE50C	XE60CA	XE65CA	XE80C	XE85C
操作重量 Operation weight	Kg	1640	4050	5030	5960	5960	7460	7700/8100 (带推土铲)
铲斗容量 Bucket capacity	m³	0.044	0.14	0.18	0.09-0.23	0.09-0.25	0.3	0.34
发动机型号 Model	/	3TNV82A	4TNV88	4TNV88-SYY	4TNV94L	4TNV94L	4JG1TPC	4JG1TPC
直喷 Direct injection	/	√	√	√	√	√	√	√
4冲程 Four strokes	/	√	√	√	√	√	√	√
水冷 Water cooling	/	√	√	√	√	√	√	√
涡轮增压 Turbo-charging	/	x	x	x	x	x	√	√
缸数 No. of cylinders	/	3	4	4	4	4	4	4
发动机输出功率 Output power	kw/rpm	16.5/2200	27.6/2200	27.6/2200	39.8/2200	39.8/2200	53.8/2150	53.8/2150
最大扭矩/转速 Max. torque/speed	N.m	86.5/1320	142/1320	142	214/1100	214/1100	255/1800	255/1800
排量 Displacement	L	1.33	2.19	2.19	3.054	3.054	3.059	3.059
行走速度 Traveling speed	km/h	4.4/2.4	4.2/2.6	4.2/2.6	4.2/2.2	4.2/2.2	4.4/2.4	4.9/2.6
回转速度 Rotary speed	r/min	11	13.5	13.5	11	11	11	11
爬坡能力 Gradeability	°	30°	30°	30°	30°	30°	35°	35°
接地比压 Ground pressure	kPa	23.8	36.3	29.5	32.5	32.5	33.5	34.6/36.4 (带推土铲)
铲斗挖掘力 Bucket digging force	kN	13.9	23.2	23.2	48.3	48.3	51.2	51.2
斗杆挖掘力 Arm digging force	kN	8.8	19.3	19.3	32.5	32.5	34.2	34.2
最大牵引力 Maximum traction	kN	12.2	33.9	47.7	50.5	50.5	68.5	60.5
主泵额定流量 The main pump rated flow	L/min	2×19.8, 14.1	1×110, 111	1×110, 111	143	156.2	172	198, 21
主安全阀压力 Main safety valve pressure	MPa	24	21	21	24.5	24.5	27.4	27.4
行走系统压力 Pressure of travel system	MPa	21	21	21	22	22	27.4	27.4
回转系统压力 Pressure of swing system	MPa	18	21	16.7	21	21	20.6	20.6
先导系统压力 Pressure of pilot system	MPa	3.3	3.9	3.9	3.5	3.5	3.5	3.9
燃油箱容积 Fuel tank capacity	L	20	65	65	110	110	130	130
液压油箱容积 Hydraulic tank capacity	L	29	70	70	85	85	115	115
发动机机油容量 Engine oil capacity	L	5.5	7.4	7.4	12	12	9.7	9.7
A 总长 Total length	mm	3760	5455	5475	5860	5860	6144	6144
B 总宽 Total width	mm	1080	1650	1800	1920	1920	2272	2332
C 总高 Total height	mm	2400	2440	2540	2585	2585	2682	2712
D 转台宽度 Width of platform	mm	1080	1500	1500	1780	1780	2250	2250
E 底盘总宽 Total width of chassis	mm	1080	1635	1800	1920	1920	2200	2320
F 履带宽度 Length of crawler	mm	230	300	400	400	400	450	450
G 轮距 Wheel base of crawler	mm	1217	1721	1917	1990	1990	2195	2180
H 轴距 Track gauge	mm	850	1335	1400	1500	1500	1750	1870
I 配重离地间隙 Ground clearance of counterweight	mm	472	578	675	710	710	797	827
J 最低离地间隙 Min. ground clearance	mm	180	350	381	385	385	393	428
推土铲 (宽/高) Dozer (width/height)	mm	1080×225	1650×300	1800×340	1920×340	1920×340	2200×396	2320×416
A 最大挖掘高度 Max. digging height	mm	3616	5320	5412	5630	5630	7135	7165
B 最大卸载高度 Max. dumping height	mm	2478	3700	3788	3945	3945	5030	5060
C 最大挖掘深度 Max. digging depth	mm	2320	3600	3555	3830	3830	4160	4130
D 最大垂直挖掘深度 Max. vertical wall digging depth	mm	1520	2580	3115	2680	2680	3485	3500
E 最大挖掘半径 Max. digging reach	mm	3915	5810	5810	6130	6130	6295	6295
F 最小回转半径 Min. swing radius	mm	2335	2385	2385	2460	2460	1800	1800
G 尾部最小回转半径 Min. tail swing radius	mm	1190	1490	1490	1660	1660	1805	1805
推土铲最大提升高度 Max. dozer lifting height	mm	220	255	718	390	390	363	409
推土铲最大卸地深度 Max. dozer cutting depth	mm	240	375	560	560	560	346	438
动臂长度 Length of boom	mm	1690	2795	2795	3000	3000	3720	3720
斗臂长度 Length of arm	mm	1100	1600	1600	1600	1600	1622	1622
斗容 Bucket capacity	m³	0.044	0.14	0.18	0.23	0.25	0.3	0.34
斗容 Bucket capacity	m³	/	/	/	0.2 加强斗 0.09 窄斗	0.2/0.23 加强斗 0.09 窄斗	0.18 窄斗	0.18 窄斗 0.3 加强斗
标配 Standard configuration								
选配 Optional configuration								
辅具及其他 Auxiliary tools and others	/	破碎锤	破碎锤、橡胶履带块、橡胶履带	破碎锤、橡胶履带块	破碎锤、橡胶履带块、脚踏式破碎开关	破碎锤、橡胶履带块、脚踏式破碎开关	破碎锤、橡胶履带块、快换装置	破碎锤、橡胶履带块、快换装置