

SUNWARD



SWL/SWTL滑移装载机
SWL/SWTL Skid Steer Loader

山河智能装备股份有限公司 SUNWARD INTELLIGENT EQUIPMENT CO., LTD.

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使用设备时一定要认真阅读操作与保养手册。山河智能遵循不断完善的原则，对产品的部分改进或难以通报阁下，本图册仅作参考，最终解释权属山河智能。
内部资料 请勿外传
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X-II-Z-3 SWL & SWTL CH&EN 2013-12 MCM

领导关怀
Attention from State Leaders



集团简介 Company Introduction

山河智能装备集团创始于1999年，是一家上市公司山河智能装备股份有限公司为核心，以工程机械为主业的国际性装备制造企业集团，总部位于湖南长沙国家级经济技术开发区。

Founded in 1999, Sunward Intelligent Equipment Group is an international equipment manufacturing group focusing on construction machinery, and with its main body a listed company, Sunward Intelligent Equipment Co., Ltd. The headquarters is located in National Economic & Technological Development Zone in Changsha, Hunan, China.

集团在“自主研发、精益制造、诚信经营”方面建立优势，并形成自己的核心竞争力，快速发展，迅速崛起；集团已在大型桩工机械、小型工程机械、全系列挖掘机、现代凿岩设备、工业车辆、煤矿装备、起重机械、路面机械、液压元器件、军用工程机械、通用航空设备、豪华游艇等十多个领域成功开发上百个规格、具有自主知识产权、高性能高品质的装备制造产品。

Sunward rises rapidly by its core competitiveness: independent R&D, lean manufacturing and integrity management. Sunward has developed series of products with independent intellectual property right that offer excellent performance and high quality. These products include large-scale piling machinery, compact construction machinery, full series of excavator, modern rock drilling equipment, industry vehicle, coal mining equipment, hoisting equipment, road equipment, hydraulic component, military construction machinery, general aviation equipment and yacht.

以先导式创新为基础，差异化的竞争优势保证了山河智能产品稳居中国一线品牌、欧洲知名品牌位置。2011年开始进入世界工程机械制造商五十强，世界挖掘机品牌二十强。

Based on pilot innovation, the difference advantage ensures Sunward become one of the top brands in China and a famous brand in Europe. Sunward has been listed among the world top 50 construction machinery manufacturers and top 20 excavator manufacturers since 2011.

产品畅销全国各地，并与国外70多个颇具实力的代理商共同建立了基本覆盖全世界的营销服务网点。目前，山河智能仅在欧洲已拥有代理商近30家，包括德国、意大利、法国、芬兰、瑞典等二十多个国家。SUNWARD品牌在欧洲区域树立了强势品牌形象，在其中几个国家市场占有率保持第一。

Sunward products are not only widely sold in domestic market, but also have expanded in international market by establishing a global sales and service network with 70 professional agents. So far, there are nearly 30 agents in Europe including Germany, Italy, France, Finland and Sweden etc.

集团已通过ISO9001、ISO14001、OHSAS18001、CE、GOST认证。
Certified by ISO 9001, ISO 14001, OHSAS18001, CE and GOST.



2009年3月29日，现任国务院总理李克强视察山河智能
On Mar. 29th, 2009, the present premier Li Keqiang visited SUNWARD



2010年7月2日，时任国务院总理温家宝视察山河智能
On Jul. 2nd, 2010, the ex-premier Wen Jiabao visited SUNWARD

科技研发
R&D and Design



山河技术中心是山河智能装备集团的共享技术平台。中心现有专职研发人员400余人，其中具有博士、硕士学位者100余人，享受国务院特贴专家3人。Sunward R&D Center is the shared technology platform of the group. There are over 400 staff R&D members, including more than 100 members with master's and doctoral degree, and 3 experts enjoys Particular Allowance of the State Council.

公司研发条件优越，拥有1万平米的专用研发大楼，设备配套齐全，研发手段先进，动态模拟、三维仿真、工程分析、虚拟设计等走在设计技术的前沿；并凭借独具特色的“先导式创新”模式，结合“原始创新、集成创新、开放创新、持续创新”组成的创新体系实践，积累了深厚的技术底蕴，取得了多项创新成果，成功获得专利技术400余项。

Sunward R&D Center is equipped with complete equipment and advanced research method including dynamic modeling, 3-D simulation, engineering analysis software and virtual design etc. The innovation system is based on the four principles: original innovation, integrated innovation, open innovation, sustainable innovation. Driven by this system, Sunward has won years of technology accumulation and series of application achievements including over 400 Chinese patents.

公司荣获“国家认定企业技术中心”、“国家创新型企业”、“国际科技合作基地”、“国家工程机械动员中心”、“中国驰名商标”、“国家博士后科研工作站”、“国家863成果产业化基地”、“湖南省岩土施工装备与控制工程技术研究中心”、“现代工程装备节能关键技术湖南省重点实验室”等光荣称号。

SUNWARD is awarded as State Accredited Enterprise R&D Center, State Innovative Corporation, International Scientific and Technological Base, National Mobilization Center of Construction Machinery, Chinese Well-known Trademark, National Post-doctoral Study Center and Industrialization Base of National 863 Project etc.

Science
Technology



以精益思想和JIT生产技术为核心，结合山河智能生产实际中积累的经验，建立一种思想、一个平台、多种生产模式并存，满足不同的客户群体需要的生产模式。公司拥有确保产品质量的先进设备，建立了CNC数控机床网络管理系统，拥有一支经验丰富的工艺技术团队作为精益化生产的坚强后盾。规范工艺管理，严肃工艺纪律并对工艺纪律作定期督促与检查。

Based on SUNWARD's core value - lean thinking and JIT production technology, and experience from practical manufacturing, SUNWARD has formed a culture and a platform where different production modes can coexist to meet the different needs of specific customer groups. Quality products are ensured by our advanced facilities. Lean manufacturing is strongly backed by CNC NC Machine Tool Network Management System and an experienced technology contingent. We have standardized processing management and rigid disciplines, and there is regular check on the obedience to those rules.



高精度数控激光切割 High Precision NC Laser Cutter

焊接机器人 Welding Robot



数控双面镗铣中心 NC Double-side Boring and Milling Center



五轴联动车铣加工中心 Five-axis Cooperating Turn and Milling Center



数控深孔镗床 NC Deep Hole Boring Machine



卧式加工中心 Horizontal Machining Center

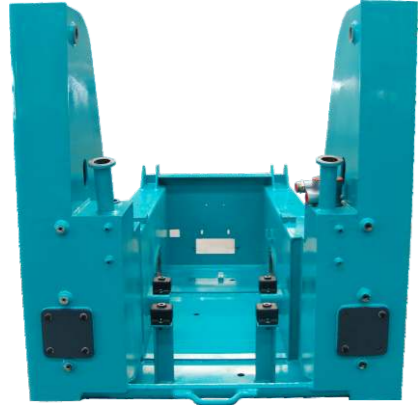




SWL/SWTL滑移装载机是山河智能自主研发的新一代机、电、液一体化小型多功能设备，其各项性能指标达到国际先进水平。该机器结构紧凑、动作灵活、操作方便、工作高效、功能强大、维护简单。特别适用于城市基础设施、道路或建筑工地、厂房间、仓库、码头、轮船甲板，甚至船舱内等场地狭窄、作业内容频繁变换的场合。通过更换不同的工作装置，实现铲运、起重、挖掘、钻孔、破碎、抓取、松土、道路清扫和路面压实等作业。

SUNWARD developed SWL/SWTL Skid Steer Loader autonomously. It's a new generation machine with compact structure. Its main features include flexible operations, high efficiency, multifunction and easy maintenance. It's particularly suitable for urban infrastructure, construction of road and building, workshop, warehouse, dock, ship deck and narrow space like vessel cabin. By changing work attachment, Skid Steel Loader can execute various task such as loading, lifting, digging, boring, breaking, grapping, earth loosening, road cleaning and pavement works.





创新的整体结构 Innovative monolithic structure

液压油箱、燃油箱与底盘融为一体，节省空间，机器更为强健。
Hydraulic oil tank, fuel tank and chassis was designed as an integral structure that made the machine more compact and durable.



强劲的动力系统 Strong power system

采用国际著名的发动机，确保机器能胜任各种工作。
World famous engine generates enough power for all jobs.



垂直举升机构 Vertical lifting mechanism

独创的举升机构使机器具有更远的卸载距离。
Unique lifting mechanism to unload the machine with a longer distance.



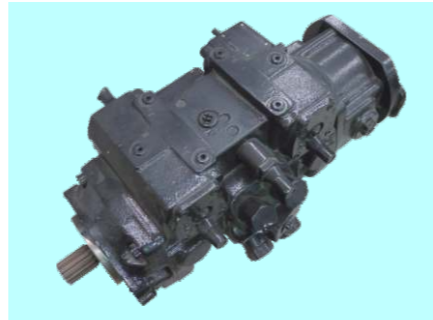
安全舒适的工作环境 Safe and comfortable working condition for operator

司机室空间宽敞，视野良好，符合ROPS/FOPS。所有仪表都布置在前方容易观察的地方，所有的按钮开关都触手可及，安全扶手可以防止人意外离开座椅。

The cab gets lots of space and good view. All instruments and operating buttons are within the reach of the operator. It is in line with ROPS/FOPS regulation. Ergonomically designed armrest prevents the operator from falling off the chair accidentally.

液压闭式系统 Hydraulic closed system

采用闭式回路的行走液压系统，结构紧凑，控制灵敏，发热少。
Traveling hydraulic system adopts closed loop circuit with features of compact structure, good maneuverability and lower heat emission.



更大的举升高度 Bigger larger lifting height

优化的结构设计使得机器具有同类机型中更大的举升高度。
Optimum design makes the SSL able to reach bigger lifting height comparing with similar model of other brands.



双重油门控制 Double Accelerograph-control

发动机的油门有手动控制与脚踏控制两种形式，极大地方便了操作。
Accelerograph can be controlled easily by hand or foot.



维护方便 Convenient maintenance

充分考虑维护的方便性，打开后罩就可完成日常维护。司机室可以大角度前翻。
All daily maintenance can be completed when open the rear cover. The cabin can be turned forward in large-angle.



自动调平衡系统 Auto-levelling system

动臂上升时，铲斗能保持平举状态。
When lifting the boom, the bucket automatically keeps levelling.



简便的操作方式 Easy operation

比例控制的先导手柄容易操作，省力，使得操作者能够很快的熟练操作机器，不易疲劳。
Operators may enjoy the Proportional controlled pilot joystick by getting familiar with the machine quickly with less fatigue.



标准通用的快换装置 Standard quick coupler

采用国际通用的快换装置，能够快速方便的更换各种附件。管路的快速接头也是标准的，绝大多数其它厂商的附件都能在该滑移装载机上使用。
International standard quick coupler fits various attachments in the world.

- 山河智能滑移装载机可以更换多种附件，包括大流量系统。
The machine works with a wide range of attachments, including high flow system.

货叉 Fork



功能：搬运大块水泥板等，叉齿的间距可以调整，适应不同的物料和货盘叉架。
Function: Handling large concrete slabs, etc. Fork tooth distance can be adjusted to suit different materials and the pallet fork frame.

四合一铲斗 4 in 1 Bucket

功能：用于搬运物料、滑坡、开辟交通等。多种工作模式，可以进行推、平、装、夹等作业。

Function: Used to moving materials, processing crater backfill, landslides, open up traffic, etc. Multi-mode, can be pushed, flat, armored, folders and other operations.



夹装斗 Clamping Bucket



功能：抓取不规则散料、木材和钢筋等杂货，拖带建筑垃圾等清理现场工作，开辟交通作用突出。
Function: Snatch at irregular bulk, timber and steel such as groceries, towing construction waste, especially on opening up traffic.

推土铲 Dozer Blade

功能：装配上推土铲，把你的装载机变成一小型推土机。

Function: Assemble dozer blade on your loaders to become a mini-bulldozer.



破碎锤 Breaker

功能：破碎巨石、岩土层、炸弹袭击造成的大块混凝土块，以利于挖掘机、装载机等进行物料清除。

Function: Broken rock, rock layer, caused by a bomb attack on large concrete blocks in order to remove the materials by excavators or skid steer loaders.



吹雪器 Snow Blower



功能：该液压驱动附件是清除人行道、车道和停车场厚厚积雪的理想工具。

Function: The hydraulic drive attachment is to remove sidewalks, driveways and parking lots, it's an ideal tool for a thick snow.

铣刨机 Planer

功能：清除和剥离沥青路面车辙、龟裂及油包；铣削马路标线以及铣削水泥路面板块之间的错台和路面的拉毛处理。

Function: Cleaning and stripping asphalt pavement rutting, cracking and oil package; milling, milling, cement, road markings, as well as the fault of the road section between the stations and road nap processing.



清扫收集器 Sweeper



功能：能有效清除路面灰尘、垃圾，并能同时收集，是环卫工作的好帮手。

Function: Can effectively remove the road dust, garbage, and can be collected at the same time, it's a good helper for sanitation work.

挖掘器 Delver

功能：应用于边沟、边渠工程，及有特殊要求的工地作业，拓展了机器的应用范围。

Function: Applied for side channel, side ditch projects, as well as other specific work sites, extended the range of application.



通过配备各种属具，凭借着其小巧灵活的机身，活跃于各种场所，是您工作的好帮手！

Equipped with a variety of attachments, active in a variety of places by virtue of the flexibility, a good helper for your work!



在意大利施工 Construction In Italy



在中东施工 Construction In Middle East



在伊朗施工 Construction In Iran



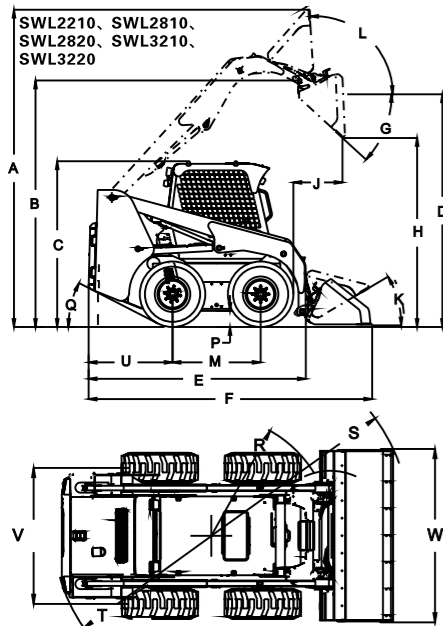
四川抗震救灾 Sichuan Earthquake Relief

参数 Datas		型号 Model	SWL2210	SWL2810	SWL2820	SWL3210	SWL3220	SWTL4210	SWTL4510	SWTL4518		
外形尺寸 Dimension (LxBxH)		mm	3071x1530x1948	3261x1600x2018	3590x1830x2100	3660x2010x2130						
作业参数 OPERATING PARAMETERS	A 最大操作高度 Max. operating altitude	mm	3068	3850	4020	4025						
	B 至铲斗销的高度 Height to bucket hinge pin	mm	2831	3002	3123	3125						
	C 至司机室的高度 Height to top of cab	mm	1948	2018	2100	2130						
	D 铲斗水平时其底部的最大高度 Height to bottom of level bucket	mm	2646	2834	2950	2950						
	E 不带附件时的长度 Overall length without attachment	mm	2385	2475	2750	2889						
	F 带标准铲斗的长度 Overall length with standard bucket	mm	3071	3261	3590	3660						
	G 最大高度时的卸载角 Max. height of the unloaded angle	°	42		43	42						
	H 卸载高度 Dumping height	mm	2174	2320	2395	2398						
	J 卸载距离 Dumping reach	mm	465	475	625	686						
	K 铲斗在地面的翻转角 Bucket on the ground of the flip angle	°	30									
	L 铲斗在最高时的翻转角 Bucket at the highest flip angle	°	95	97	93	92						
	M 轴距 Wheelbase	mm	948	987	1116	1600						
	P 离地间隙 Ground clearance	mm	205	190	205	235						
	Q 起始角 Angle of departure	°	26	25	27	36						
	R 不带附件的前转弯半径 Without the attachments before turning radius	mm	1211	1168	1300	1458						
	S 前转弯半径 Before turning radius	mm	1911	1954	2180	2297						
	T 后转弯半径 After turning radius	mm	1440	1534	1700	1678						
	U 尾部长度 Tail length (rear axle to bumper)	mm	873	960	1062	802						
V 两轮(履带)中心距离 Two tires (track) center distance	mm	1205	1293	1475	1530							
W 铲斗宽度 Bucket width	mm	1530	1600	1830	2010							

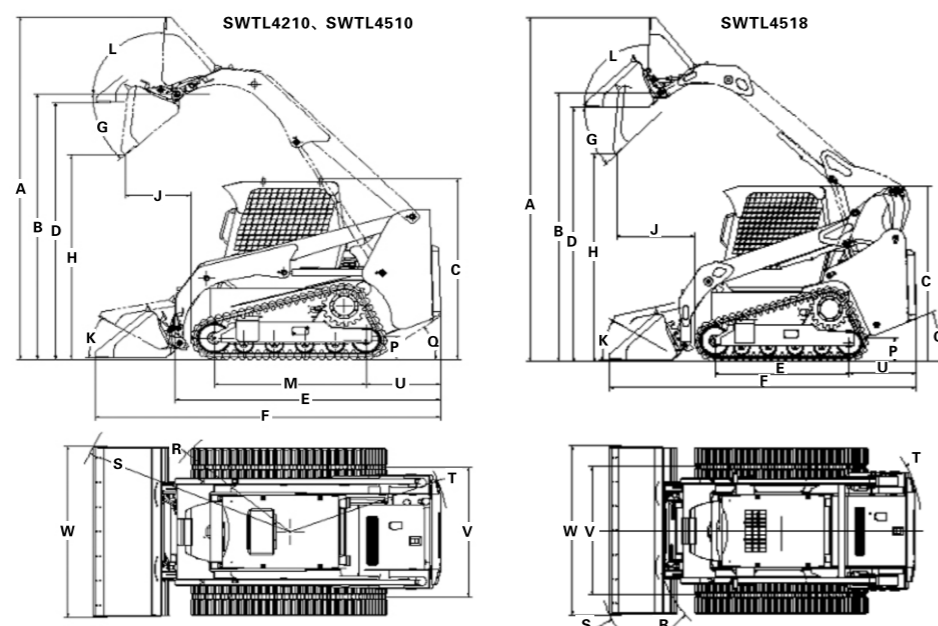
可选属具 OPTIONAL ATTACHMENTS

各种尺寸铲斗 Different size Bucket	推土铲 Bulldozer shovel
4合1铲斗 4 in 1 Bucket	清扫器 Sweeper
货叉 Fork	扫雪机 Snow remover
破碎锤 Breaker hammer	铣刨机 Planer
螺旋钻孔器 Drilling equipment	夹木叉 Pallet fork grapple
其它可选附件 Other optional accessories	

SWL 系列 Series



SWTL 系列 Series



参数 Datas		型号 Model	SWL2210	SWL2810	SWL2820	SWL3210	SWL3220	SWTL4210	SWTL4510	SWTL4518		
整机重量 Total weight		kg	2310	2780	3350	4360						
性能 PERFORMANCE	装载量 Loading capacity	kg	600	725	1000	1200						
	倾翻载荷 Tipping load	kg	1200	1450	2000	3430						
	铲斗掘起力 Bucket breakout force lift	kg	1570	2000	2480	3000						
	动臂掘起力 Boom breakout force lift	kg	1388	1900	2430	2440						
	最大速度 Max. speed	km/h	12	13.6	12.6	7/11 (双速) (Double speed)						
	品牌 Brand		Xinchai	Yanmar	Kubota							
发动机 ENGINE	型号 Model		A498BAG-14	4TNV84T	V3300-DI	V3307-DI-T	V3300-DI	V3800-DI-T				
	类型 Type		4缸、水冷、柴油发动机 4-cylinder, water-cooled, diesel engine									
	排放标准 Emission standards		EPA Tier4 / EUSage III	EPA Tier2 / EUSage II	EPA Tier4 / EUSage III	EPA Tier2 / EUSage II	EPA Tier4 / EUSage III	EPA Tier2 / EUSage II	EPA Tier3 / EUSage III			
	输出功率 Output power	kW/rpm	36.8 / 2650	39.9 / 2800	54.9 / 2600	55.4 / 2600	54.9 / 2600	74 / 2600				
	最大扭矩 Max. torque	N.m/rpm	186 / 1600	160.5 / 1800	244 / 1400	265 / 1500	244 / 1400	325 / 1600				
传动系统 TRANSMISSION SYSTEM	形式 Type		静液压闭式回路 Hydrostatic closed circuit									
	主泵 Main pump		2x斜盘式轴向柱塞变量泵 2xVariable displacement piston pump									
	马达 Motor		2x摆线马达 Two cycloid motor	2x径向柱塞定量马达 2xRadial piston quantitative motor				2x径向柱塞两档变量马达+减速机 2xDouble speed variable displacement radial piston motor+Reducer				
液压系统 HYDRAULIC SYSTEM	类型 Type		节流系统 Throttling system									
	泵 Pump		齿轮泵 Gear pump									
	最大流量 Max. flow	L/min	62.8	70.0+33.6	83.2+41.6							
	最大压力 Max. pressure	bar	210									
操纵形式 Control mode			机械控制H模式 Mechanical control H mode	先导控制ISO模式 ISO model of pilot control								
	启动马达 Starting motor	V/kW	12 / 3.8	12 / 2.3				12 / 3.0				
电器系统 ELECTRICAL SYSTEM	发电机 Alternator	V/A	14 / 50	12 / 40	12 / 55	12 / 45	12 / 80	12 / 45	12 / 80			
	蓄电池 Battery	Ah	80				100					
	燃油箱 Fuel oil tank	L	65	70	85					90		
加油量 SERVICE REFILL CAPACITIES	液压油箱 Hydraulic oil tank	L	38	50					65			
	链轮油箱 Sprocket oil tank	L	25	30							—	
	机油 Engine oil	L	6	7.4				13.2				
	发动机冷却液 Engine coolant	L	9	7.7				8.5				9.9
行走配置 RUNNING CONFIGURATION	轮胎尺寸 Tire size		10-16.5				12-16.5			—		
	履带尺寸 Track size		—							450x84x57		

可选配置 OPTIONAL CONFIGURATION

大流量系统、侧窗、封闭司机室、暖风机、空调、警示灯、倒车警报、外接电源等
Large flow systems, side windows, closed cab, heater, air conditioning, warning lights, reversing alarm, external power supply, etc.

标准配置 STANDARD CONFIGURATION

防雾工作灯 Front halogen working lights (2 pcs)	顶窗 Top window	调平功能 Auto-levelling
后工作灯 Rear working lights (2 pcs)	后窗 Rear window	标准铲斗 Standard Bucket
喇叭 Horn	司机室 FOPS-ROPS (Level I) canopy	通用快换 Standard quick coupler
带传感器的安全扶手 Safety handrail with sensor	带安全带的可调节座椅 Adjustable seat belts	
集中显示面板, 包括: 时间表、燃油油位表、水温表、报警灯 (机油压力、工作指示灯、停车制动等) Centralized display panel, including: timetable, fuel oil table, water temperature meter, warning lights (oil pressure, working lights, parking brake, etc.)		