



SWD系列潜孔钻机

SWD series down-the-hole drill rig

SWDH系列全液压露天钻车

SWD Hseries tophammer drill rig

SWDR系列切削钻机

SWDR series rotary cutting drill rig

SWHD系列液压凿岩机

SWDH series hydraulic drill rig

SWDL系列螺旋地桩钻机

SWDL series spiral pile drill rig

SWDT液压凿岩台车

SWDT tunnel drill rig

SWDY牙轮钻机

SWDY rotary blasthole drill rig

凿岩设备产品

Rock Drilling Equipment

山河智能装备股份有限公司

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SWD CH&EN 2018-8



山河智能装备集团是中南大学何清华教授领衔于1999年创办，现已发展为以上市公司山河智能装备股份有限公司（证券代码：002097）为核心，以长沙为总部，以装备制造为主业，在国内外具有一定影响力的国际化企业集团，跻身于全球工程机械企业50强、世界挖掘机企业20强、世界支线飞机租赁前3强。

公司产学研一体化，依靠先导式创新，以差异化产品实现跨越式发展。集团总资产超过108亿元，员工3500余人。响应供给侧改革要求，公司战略业务定位于“一点三线”（“一点”就是聚焦装备制造，“三线”就是工程装备、军用装备、航空装备），已创新研发出200多个规格型号，具有自主知识产权和核心竞争力的高性能产品。

职业化的营销服务团队、遍布全球的营销服务网络使集团产品畅销国内外，出口100多个国家和地区，“SUNWARD”商标在数十个国家注册。

山河智能获得“国家认定企业技术中心”、“国家博士后科研工作站”、“国家创新型企业”、“国家技术创新示范企业”、“国际科技合作基地”、“国家863成果产业化基地”、“国家工程机械动员中心”等称号。党和国家领导人李克强、温家宝等来到山河智能视察、指导，均对集团的自主创新能力给予了充分肯定和高度评价。

企业秉持以“修身、治业，怀天下”为核心价值观。未来的山河智能将继续发挥自主创新优势，为客户创造价值、为人类提高生活品位，不断推出具有世界影响力的产品，成为世界级知名制造企业。

Sunward Intelligent Equipment Group was founded in 1999 led by Central South University Professor Mr. He Qinghua. Today, it has been developed into the Sunward Intelligent Equipment Co., Ltd. (stock short name: Sunward Intelligent; stock code: 002097), which headquartered in Changsha City and focus on equipment manufacturing, owning independent intellectual property and makes global influences, ranking among top 50 global construction machineries manufacturing enterprises and top 20 global excavator brands. World top 3 of rental regional aircraft.

Sunward holds typical feature of industry-university-research-integration, which has achieved leap development depending on its differentiated competitive and leading innovation. The total asset is more than 10.8 billions Yuan and the member of staff is over 3,500 responding to the supply-side reform requirements. Sunward's strategic businesses positioned on the "one point and three aspects" (one point refers to focus on the equipments manufacturing; three aspects refer to engineering equipments, military equipments and aviation equipments). Sunward has researched and developed more than 200 specifications models of products, with high performance of independent intellectual property rights and core competitiveness.

Sunward has a professional marketing and service groups, along with its strong sales networks in the world which makes its products have been actively demanded throughout the country and exported to more than 100 countries and areas around the world. The brand "SUNWARD" has already been registered in dozens of countries worldwide.

Sunward has obtained a number of honors, such as the "National-recognized Enterprise Technology Center", the "National Study and Work Station for Post-doctors", the "National Innovative Enterprise", the "National Innovating Enterprise", the "International Science and Technology Cooperation Base", the "National 863 Base of Industrialized Products", and the "National Mobilizing Center of Engineering Machineries", etc.

Party and state leaders Li Keqiang, Wen Jiabao came to Sunward to inspect and guide. Both of them gave full recognition and high evaluation of the group's independent innovation ability

Sunward holds the core value of "Self-cultivation and enterprising". Sunward will continue the advantage of independent innovation ability, create value for customers and improve human life quality. Sunward will also continue to introduce products with world influence and become to be a world-class manufacturing enterprise.



公司创始人何清华教授从上世纪80年代开始致力凿岩设备的研究，在公司创立之初通过承接国家项目及省部级项目，创造了凿岩设备行业的“三个第一”，第一台纯国产全液压凿岩钻车、第一台露天液压凿岩钻车、国内第一台隧道凿岩机器人；积累了深厚的凿岩理论，形成专业领域内唯一的两本专著《隧道凿岩机器人》、《液压冲击机构研究·设计》，引领中国凿岩设备的发展。

2003年中国第一台自主知识产权的一体化潜孔钻机顺利下线，填补国内空白，技术性能达到国际先进水平，彻底打破国际巨头对高端凿岩设备市场的垄断，逐步替代进口。历时15年开发了门类齐全、岩层适应性广的系列凿岩设备，走出了一条凿岩设备自主创新道路，形成了完善的研发、制造体系。

山河智能系列凿岩设备包括一体化潜孔钻机、全液压露天钻车、多功能切削钻机、螺旋地桩钻机、井下凿岩台车等，广泛应用于水泥、冶金、煤矿、采石场等矿山开采和铁路公路、水利水电、国防建设、房建、新能源等工程建设。

Professor He Qinghua, the founder of the company has been dedicated to the development of rock drilling equipment since the 1980s. Before the establishment of the company, they created “three firsts” of China’s rock drilling equipment industry by undertaking national projects and via university-industry cooperation. The “three firsts” include the first wholly localized all hydraulic drilling rig, the first generation of open-pit hydraulic rock drilling rig, and the first tunnel drilling robot in China. On this basis, they improved his theory and published two books, the Tunnel Rock-Drilling Robot and the Research and Design of Hydraulic Impact Mechanism, which have led the development of rock drilling equipment in China.

In 2003, China’s first Integrated drilling rig with proprietary intellectual property rights successfully went off the assembly line. Its technical performance has reached an advanced level in the world, completely breaking the monopoly of international giants on the high-end rock drilling equipment market in China and gradually replacing imported ones. Over 15 years, Sunward has developed a complete series of rock drilling equipment applicable to a wide range of rock formation conditions, sought out a self-innovation path of rock drilling equipment, and established a complete system of research and development and manufacturing.

Sunward intelligent series of rock drilling equipment contain the integrated down-the-hole rigs, full hydraulic open-pit drilling rigs, multi-function cutting rig, screw-type ground pile drilling rig, underground jumbo and other pieces of equipment. They are widely applied to cement and metallurgical industries, mining activities of coal mine, quarry and other places, and construction of such projects as railway and highway, water conservancy and hydropower, national defense, buildings, and new energy resources.



高效、环保、可靠

Highly efficient, environmentally friendly and reliable

- ◆ 内燃、电力、柴电双动力多种动力单元配置，适应不同矿山选择，最大限度降低了动力消耗。
- ◆ 具备适应大型矿山开采的高钻架结构，又有适应边坡、各类工程建设的多方位臂式结构。
- ◆ 四点液压伸缩支腿底盘或浮动底盘调平，极优的地面适应性。
- ◆ 两级干式除尘系统或高压水雾湿式除尘系统、独有的防顶冲机构，有效降低粉尘，维持了清洁的作业环境。

- ◆ The availability of different power units such as the internal combustion, electricity, and diesel-power power makes them suitable for different mines, and minimizes the power consumption.
- ◆ The company offers both heavy-duty drilling derricks that are suitable for the mining of large mines and multidirectional arm type structures that are suitable for use on slopes and various engineering works.
- ◆ The four-point hydraulic telescopic leg chassis or floating chassis leveling allows for excellent adaptability to the ground.
- ◆ The two-stage dry dedusting system or the high-pressure mist dedusting system, and the unique anti-thrusting mechanism effectively reduce dust and maintain a clean working environment.



先进可靠的控制系统

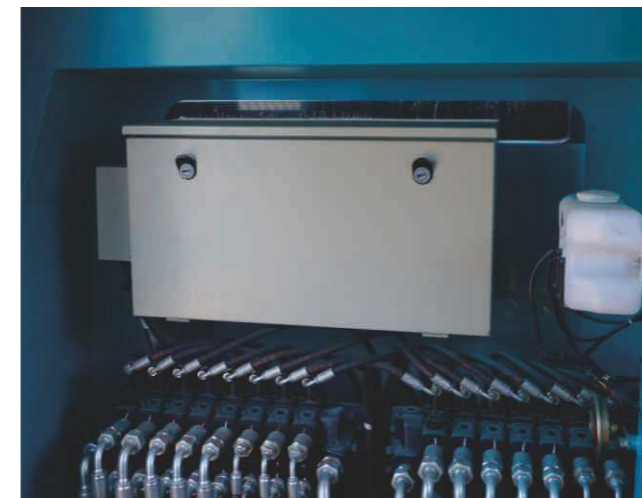
Advanced and reliable control system

凿岩自适应控制技术，回转压力自动电液控制推进，有效预防卡钻；凿岩作业与调整、行走作业液压先导操控互锁，确保作业安全可靠。

应用先进的智能控制技术、CANBUS技术，采用高可靠性的嵌入式工程机械控制器和真彩LED显示屏，自主开发高度集成电控系统，液压系统、空压机系统工作参数集成仪表显示。

The adaptive control technology for rock drilling and the rotation pressure auto EHC feed effectively protects the rig from jamming; and the interlock of the drilling operation with the hydraulic pilot control for adjusting and traveling operations ensures safe and reliable operation.

Advanced and intelligent control technology and the CANBUS technology, high-reliability embedded engineering machinery controller and true color LED display, highly integrated electronic control system independently developed by the company, and integrated instrument display for hydraulic system and air compressor system operating parameters are used in the control system.





卓越的操作性能

Excellent operational performance

司机室为操作人员提供安全的操作环境，钻孔操作视野良好，电控按钮和液压手柄集约化设计，精致布局。

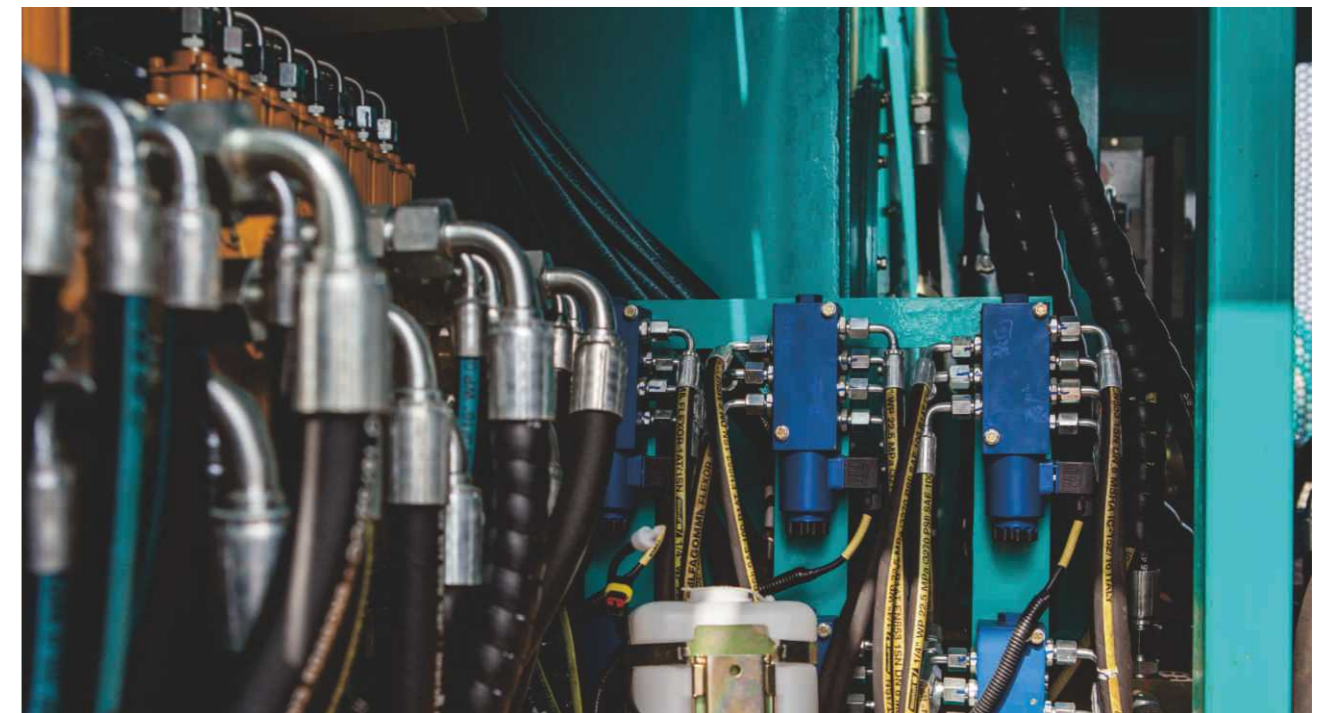
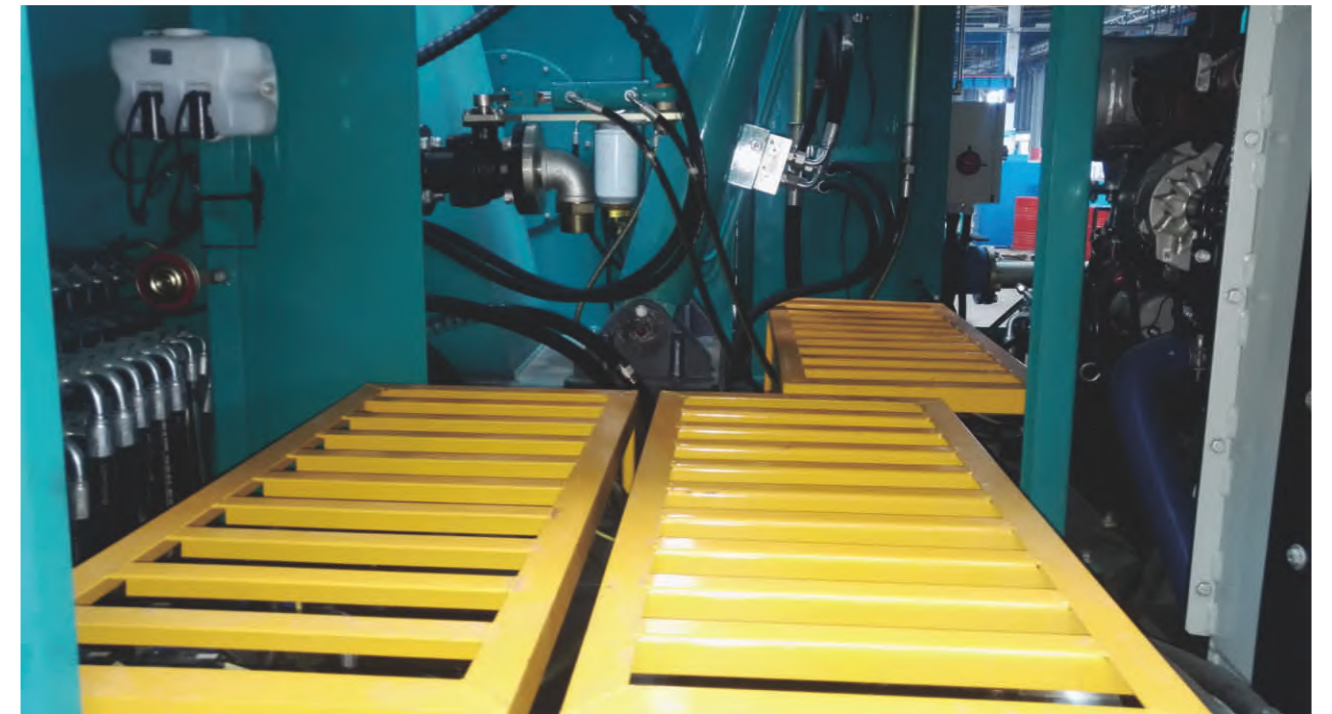
The cab provides the operators with a safe operating environment that allows for good vision and offers an integrated design of electrical control buttons and a hydraulic handle, which are carefully arranged.



维修保养便捷 Easy maintenance

模块化设计，结构紧凑，布局合理，维护方便。

The modular design, compact structure, and proper arrangement allow for easy maintenance.



选装配置 Optional configuration

精确的角度检测，满足特殊角度钻孔需求，智能钻深显示，钻深累计，避免超钻，潜孔切削一体，实现软岩、硬岩全覆盖。

Accurate angle detecting that enables the drilling at special angles, intelligent drilling depth display, accumulation of drilling depth, over-drilling prevention and integrated down-the-hole cutting can cover the drilling of both soft and hard rocks.

SWDA/B系列潜孔钻机

SWDA/B Series Down-the-hole Drill Rig



技术参数 Technical Data

主要参数 MAIN DATA		SWDB120A	SWDB138	SWDA165A	SWDA165C	SWDB165A	
作业参数 (Operation parameter)							
钻孔范围 (Drilling range)	mm	90~138	138-152	138~180	138~180	138~180	
冲击器 (Impactor)		3.5"、4"	4"、5"	5"、6"	5"、6"	5"、6"	
钻杆直径 (Drill rod diameter)	mm	89	110	110、133	110、133	110、133	
钻杆长度 (Drill rod length)	m	7.5m×3	8.5m×3	8.5m×3	8.5m×3	8.5m×3	
最大孔深 (Hole depth,max)	m	22	25	25	25	25	
除尘装置 (Dust collection device)		干式 (标配) / 湿式 (选配) Dry (standard) / Wet (optional)					
空压机 (Air compressor)							
制造商 (Manufacturer)		SULLAIR	SULLAIR	SULLAIR	SULLAIR		SULLAIR
型号 (Model)		550RH	D660RH	E750XH	E750XH	ELQ1000RH	DLQ825XH
工作压力 (Working pressure)	MPa	0.65~1.7	2	1.38	1.38	2.07	1.38
排量 (Displacement)	m³/min	15.5	18.5	21.2	21.2	28.3	23.4
功率 (Power)	kW/rpm	179/1800	194/1800	185	185	250	216/2200
发动机 (Engine)							
制造商 (Manufacturer)		CUMMINS	CUMMINS	/	CUMMINS	CUMMINS	
型号 (Model)		QSB4.5	QSB4.5	Y200-4	QSB4.5+Y200-4		QSB4.5
功率 (Power)	kW/rpm	82/2200	82/2200	60	82/2200+60		82/2200
燃油箱 (Fuel tank capacity)	L	360	600	/	200		600
推进 (Feed)							
推进梁总长 (Feed beam length)	mm	10500	11500	11500	11500	11500	
推进行程 (Feed Stroke)	mm	8000	9000	9000	9000	9000	
补偿行程 (Feed extension)	mm	1200	1800	1800	1800	1800	
推进最大速率 (Feed rate, max)	m/s	0.5	0.8	0.8	0.8	0.8	
最大推进力 (Feed force, max)	kN	32	40	40	40	40	
前倾角度 (Forward tilting angle)	°	90	90	90	90	90	
行走能力 (Travel capability)							
行走速度 (Traveling speed)	km/h	2	2	2	2	2	
最大牵引力 (Traction force, max)	kN	100	125	125	125	125	
爬坡能力 (Gradeability)	°	25	25	25	25	25	
离地间隙 (Ground clearance)	mm	440	480	480	480	480	
回转 (Rotary)							
回转速度 (Rotary speed)	rpm	70	60	60	60	60	
回转扭矩 (Rotary torque)	Nm	3000	4000	4000	4000	4000	
外型尺寸 (Dimension)							
重量 (Gross weight)	T	14.5	22	24	28	23	
长×宽×高(工作) (L×W×H Working)	m	6.65×4.1×10.8	7.5×4.2×12	7.2×4.3×12	8.1×4.65×12	7.5×4.5×12	
长×宽×高(运输) (L×W×H Transportation)	m	10.8×3.2×3.55	12×3×3.2	12×3.2×3.14	12×3.4×3.14	12×3.2×3.4	

主要参数 MAIN DATA		SWDA200A	SWDA200C	SWDB200A	SWDA250C	SWDB250	
作业参数 (Operation parameter)							
钻孔范围 (Drilling range)	mm	180~255	180~255	180~255	230~270	230~270	
冲击器 (Impactor)		6"、8"	6"、8"	6"、8"	8"、9"	8"、9"	
钻杆直径 (Drill rod diameter)	mm	146	146	146	146	146	
钻杆长度 (Drill rod length)	m	10m×3	10m×3	10m×3	10m×3	10m×3	
最大孔深 (Hole depth,max)	m	30	30	30	30	30	
除尘装置 (Dust collection device)		干式 (标配) / 湿式 (选配) Dry (standard) / Wet (optional)					
空压机 (Air compressor)							
制造商 (Manufacturer)		SULLAIR	SULLAIR	SULLAIR	SULLAIR	SULLAIR	
型号 (Model)		ELQ1000RH	ELQ1000RH	DLQ1070RH	ELQ1150RH	DLQ1200RH	
工作压力 (Working pressure)	MPa	20.7	20.7	2.07	20.7	2.07	
排量 (Displacement)	m³/min	28.3	28.3	30.3	32.6	34	
功率 (Power)	kW/rpm	250	250	328/1800	280	336/1850	
发动机 (Engine)							
制造商 (Manufacturer)		/	CUMMINS	CUMMINS	CUMMINS	CUMMINS	
型号 (Model)		Y2-225S-4	QSB4.5+Y2-225S-4	QSB4.5	QSB4.5+Y2-225S-4	QSB4.5	
功率 (Power)	kW/rpm	74	82/2200+74	97/2200	97/2200+74	97/2200	
燃油箱 (Fuel tank capacity)	L	/	200	700	200	700	
推进 (Feed)							
推进梁总长 (Feed beam length)	mm	13200	13200	13200	13200	13200	
推进行程 (Feed Stroke)	mm	10500	10500	10500	10500	10500	
补偿行程 (Feed extension)	mm	1800	1800	1800	1800	1800	
推进最大速率 (Feed rate, max)	m/s	0.8	0.8	0.8	0.8	0.8	
最大推进力 (Feed force, max)	kN	75	75	75	75	75	
前倾角度 (Forward tilting angle)	°	90	90	90	90	90	
行走能力 (Travel capability)							
行走速度 (Traveling speed)	km/h	2	2	2	2	2	
最大牵引力 (Traction force, max)	kN	175	175	175	175	175	
爬坡能力 (Gradeability)	°	25	25	25	25	25	
离地间隙 (Ground clearance)	mm	480	480	480	480	480	
回转 (Rotary)							
回转速度 (Rotary speed)	rpm	50	50	50	50	50	
回转扭矩 (Rotary torque)	Nm	6000	6000	6000	6000	6500	
外型尺寸 (Dimension)							
重量 (Gross weight)	T	30	30	30	32	32	
长×宽×高(工作) (L×W×H Working)	m	8.3×4.15×13.9	8.5×4.68×13.9	8.3×4.68×13.9	8.3×4.15×13.9	8.3×4.15×13.9	
长×宽×高(运输) (L×W×H Transportation)	m	13.9×3.35×3.45	13.9×3.35×3.45	13.9×3.35×3.45	13.9×3.35×3.45	13.9×3.35×3.45	

SWDE系列潜孔钻机

SWDE Series Down-the-hole Drill Rig



技术参数 Technical Data

主要参数 MAIN DATA		SWDE120A	SWDE120B	SWDE138
作业参数 (Operation parameter)				
钻孔范围 (Drilling range)	mm	90~138	90~138	138~152
冲击器 (Impactor)		3.5"、4"、5"	3.5"、4"、5"	5"
钻杆直径 (Drill rod diameter)	mm	83	83	102
钻杆长度 (Drill rod length)	m	4m×6	4m×6	5m×6
最大孔深 (Hole depth,max)	m	24	24	30
除尘装置 (Dust collection device)		干式 (标配) / 湿式 (选配) Dry (standard) / Wet (optional)		
空压机 (Air compressor)				
制造商 (Manufacturer)		SULLAIR	GHH	SULLAIR
型号 (Model)		DLQ550RH	CF128	DLQ660RH
工作压力 (Working pressure)	MPa	1.7	1.7	2
排量 (Displacement)	m³/min	15.5	16	18.5
功率 (Power)	kW/rpm	179/1800		194/1800
发动机(Engine)				
制造商 (Manufacturer)		CUMMINS	CUMMINS	CUMMINS
型号 (Model)		QSB4.5	QSL8.9-C325	QSB4.5
功率 (Power)	kW/rpm	82/2200	242	82/2200
燃油箱 (Fuel tank capacity)	L	530	520	530
推进 (Feed)				
推进梁总长 (Feed beam length)	mm	8000	6920	8200
推进行程 (Feed Stroke)	mm	4380	4380	5400
补偿行程 (Feed extension)	mm	1200	1200	1300
推进最大速率 (Feed rate, max)	m/s	0.8	0.8	0.6
最大推进力 (Feed force, max)	kN	32	30	35
前倾角度 (Forward tilting angle)	°	140	140	140
翻转角度 (Overturning angle)	°	-20~90	-20~90	-20~90
臂 (Boom)				
全长 (Full length)	mm	2800	2800	3200
举升角度 (Lifting angle)	°	50~-30	50~-30	50~-30
摆动角度 (Oscillating angle)	°	L15 R45	L15 R45	L15 R45
行走能力 (Travel capability)				
行走速度 (Traveling speed)	km/h	3.2	3.2	3.2
最大牵引力 (Traction force, max)	kN	100	100	125
爬坡能力 (Gradeability)	°	25	25	25
履带架摆角 (Track tilt angle)	°	±10	±10	±10
离地间隙 (Ground clearance)	mm	480	480	480
回转 (Rotary)				
回转速度 (Rotary speed)	rpm	70	70	70
回转扭矩 (Rotary torque)	Nm	3000	2800	3000
外型尺寸 (Dimension)				
重量 (Gross weight)	T	15.5	14.5	22
长×宽×高(工作) (L×W×H Working)	m	8.2×3.62×8.0	8.5×3.4×7.3	8.2×3.62×8.0
长×宽×高(运输) (L×W×H Transportation)	m	9.8×3.1×3.5	10.5×3.4×3.5	11.6×3.4×3.6

主要参数 MAIN DATA		SWDE165A	SWDE200A	SWDF138A	SWDF200A
作业参数 (Operation parameter)					
钻孔范围 (Drilling range)	mm	138~180	178	90-152	180~255
冲击器 (Impactor)		5"、6"	6"、8"	3.5"、4"、5"	6"、8"
钻杆直径 (Drill rod diameter)	mm	110	146	83	146
钻杆长度 (Drill rod length)	m	6m×6	4m×6、6m×3	3m×6	4m×6
最大孔深 (Hole depth,max)	m	36	18	18	24
除尘装置 (Dust collection device)		干式 (标配) / 湿式 (选配) Dry (standard) / Wet (optional)		湿式 Wet	湿式 Wet
空压机 (Air compressor)					
制造商 (Manufacturer)		SULLAIR		ATLAS	/
型号 (Model)		DLQ825XH	DLQ980RH	XRVS1050	
工作压力 (Working pressure)	MPa	1.38	2.41	2.5	1.38~1.9
排量 (Displacement)	m³/min	23.4	27.9	29.8	12~21.2
功率 (Power)	kW/rpm	216/2200	280/1800	328/1800	
发动机(Engine)					
制造商 (Manufacturer)		CUMMINS	CUMMINS	CUMMINS	CUMMINS
型号 (Model)		QSB4.5	QSB4.5	QSB4.5	QSB4.5
功率 (Power)	kW/rpm	82/2200	97/2200	82/2200	82/2200
燃油箱 (Fuel tank capacity)	L	800	300+796	140	500
推进 (Feed)					
推进梁总长 (Feed beam length)	mm	9230	9800	5920	6920
推进行程 (Feed Stroke)	mm	6500	6500	3800	4380
补偿行程 (Feed extension)	mm	1300	1300	800	1200
推进最大速率 (Feed rate, max)	m/s	0.5	0.5	0.8	0.4
最大推进力 (Feed force, max)	kN	40	75	32	75
前倾角度 (Forward tilting angle)	°	140	140	140	140
翻转角度 (Overturning angle)	°	-20~90	-20~90	-20~90	-20~90
臂 (Boom)					
全长 (Full length)	mm	3200	2600	2200	2200
举升角度 (Lifting angle)	°	50~-30	50~-30	50~-30	50~-30
摆动角度 (Oscillating angle)	°	L15 R45	L15 R45	L15 R45	L15 R45
行走能力 (Travel capability)					
行走速度 (Traveling speed)	km/h	2	3.2	3.2	3.2
最大牵引力 (Traction force, max)	kN	125	175	100	100
爬坡能力 (Gradeability)	°	25	25	25	25
履带架摆角 (Track tilt angle)	°	±10		±10	±10
离地间隙 (Ground clearance)	mm	480	480	480	480
回转 (Rotary)					
回转速度 (Rotary speed)	rpm	60	50	70	50
回转扭矩 (Rotary torque)	Nm	4000	6000	3000	6000
外型尺寸 (Dimension)					
重量 (Gross weight)	T	23	30	12	17
长×宽×高(工作) (L×W×H Working)	m	9.8×4.35×9.6	9.2×4.68×9.8	6.3×2.5×6.2	7.8×2.95×7.8
长×宽×高(运输) (L×W×H Transportation)	m	12×3.4×3.6	12.6×3.4×3.6	8.2×2.5×3.2	9.05×2.95×3.4

SWDH系列露天液压钻车

SWDH Series Hydraulic Drilling Rig



越野能力强 Powerful off-road capacity

浮动铰接底盘，可实现 $\pm 10^\circ$ 自适应浮动，最大爬坡能力达到 30° ，越野性能极佳。

The floating hinged chassis allows for $\pm 10^\circ$ adaptive floating, and a maximum gradeability of up to 30° give them extremely good off-road capacity.



操作智能 Intelligent operations

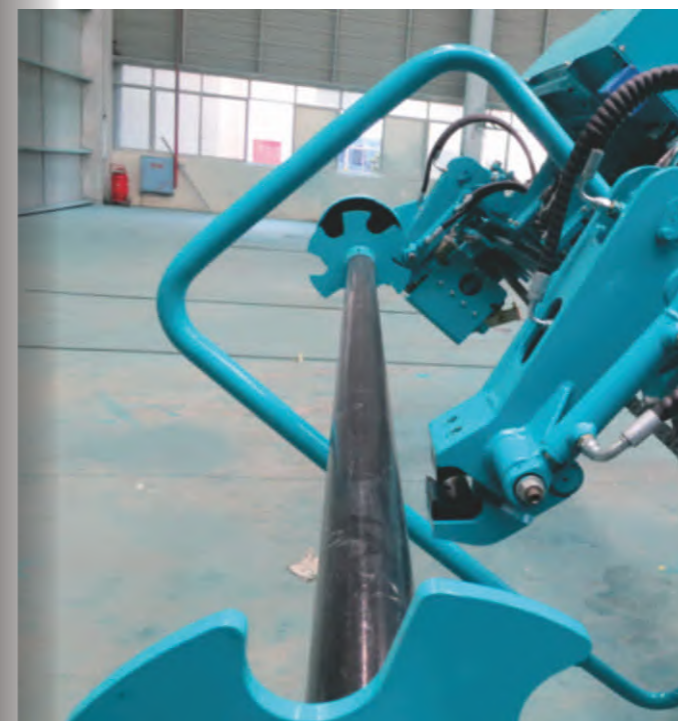
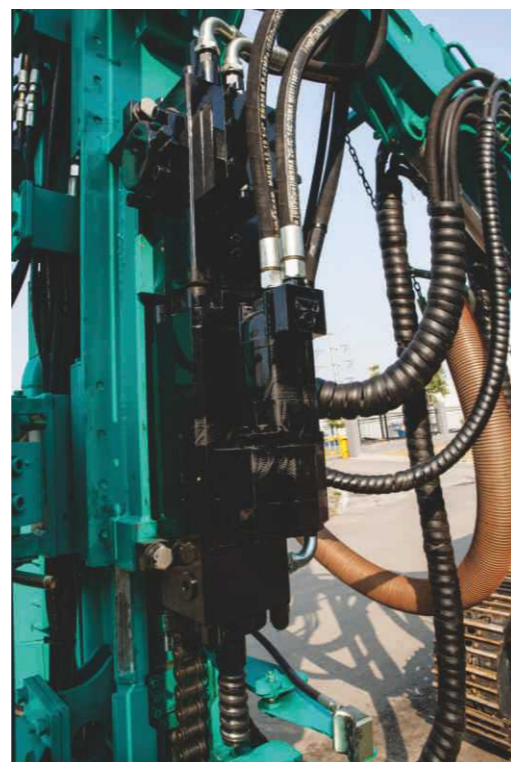
自动钻杆库，配有仿生学机械手，转盘式巡回排列钻杆库，一个手柄即可完成装卸杆工作，大大降低了操作难度，高效可靠；接卸钎回转推进液压自适应控制，减少钎具螺纹磨损，提高钎具寿命。

An automated drill rod chamber equipped with bionic manipulator, where the drill rods are arranged like a turntable when the rig rotates, enabling the extension and removal of drill rigs through a mere handle, which greatly reduces the operating difficulty and improves the efficiency and reliability; the rotation and feed in the extension and removal of drill rods are adaptively controlled through hydraulic pressure, which reduces the wear of threads on the drill rods and thus improves their service life.

核心部件 Core components

山河自主知识产权的液压凿岩机，具备钎尾反弹能量吸收装置，钎具寿命得到保障；可靠性经受了司内强化试验和工地应用的考验。

Sunward hydraulic rock drill with independent intellectual property rights own the shanks rebound energy absorption device. The working life of drilling tools can be guaranteed; machine reliability has stood the company strengthened test and jobsite application ordeal.





PLC中央集成控制，实时监测作业参数，直观了解设备运行状况；作业参数可远程保存在服务器，可远程进行故障分析。

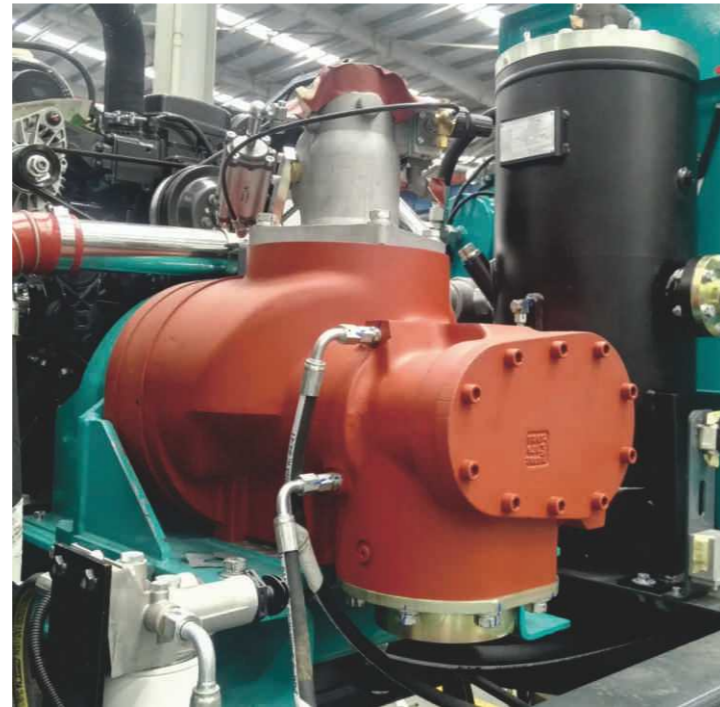
The PLC integrated central control allows for real-time monitoring of operating parameters, and a direct understanding of the equipment's operating conditions; operating parameters can be remotely stored in the server, so failure analysis can be performed remotely.



钻进过程液压自适应控制，自动监测岩层属性，并自动输出对应的钻进参数。岩层通过性好，钻进效率高，钎具寿命长。开孔弱推弱冲，成孔率高。

The hydraulic adaptive control for the drilling monitors the rock properties and output corresponding drilling parameters automatically. The rigs get through the rocks well, drill effectively and efficiently, and enable long service life of drill rods. The gentle push and punch at the opening improves the probability of pore formation.

世界一流配套体系 World-class supporting systems



选用美国康明斯QSB系列电喷发动机，涡轮增压，欧Ⅲ排放，空压机、液压泵与发动机直连，确保功率的最大化传递，减少能量损失。

Commins (U.S) QSB series EFI engine, turbo charger, Euro III emission are selected and applied, and the air compressor and hydraulic pump are directly connected to the engine to ensure maximum transmission of power and minimization of energy loss.

高效除尘，维持清洁的作业环境

A working environment enabled by efficient dedusting and cleanness maintenance

高效率的旋风+层流两级除尘装置，减少了凿岩时的粉尘量，创造更舒适的工作环境。

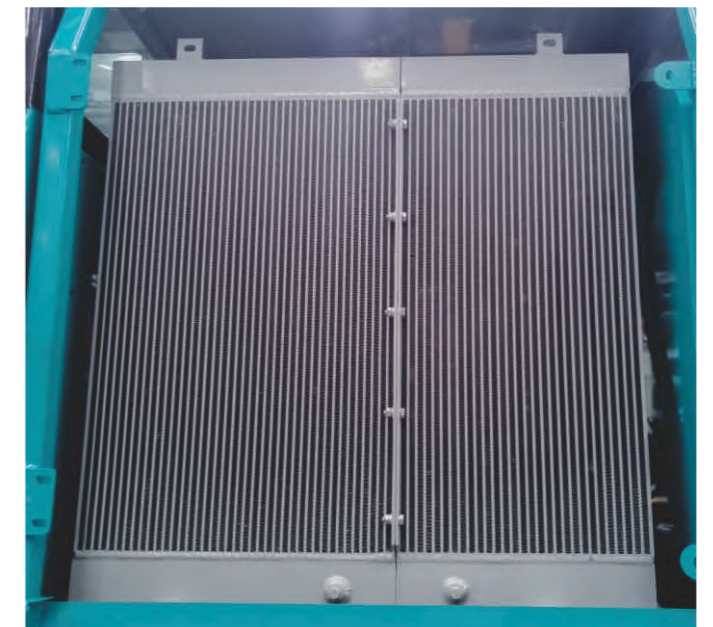
The highly efficient cyclone + laminar two-stage dedusting device reduces the dust generation during the rock drilling and creates more comfortable working environment.



热带适应性强 Good tropical suitability

冷却系统双散热器设计，空压机和液压油单独散热，即使在老挝接近50°的气温下，液压油温在50°C左右；全密封司机室，配置日本Densoo原装空调，不惧酷热炎暑，保证操作手的舒适性；

The cooling system has two radiators, which enable the air conditioner and the hydraulic oil to dissipate heat separately, even at a temperature close to 50°C in Laos, and an oil temperature of 50°C; The fully sealed cab is equipped with original Densoo (Japan) air conditioner, which makes the operator fear no heat and ensures their comfort;





技术参数 Technical Data

主要参数 MAIN DATA		SWDH89A	SWDH102A	SWDH115A
作业参数 (Operation parameter)				
钻孔范围 (Drilling range)	mm	64-89	76-115	89-127
钻杆直径 (Drill rod diameter)	mm	T38、T45	T51	T51
钻杆长度 (Drill rod length)	m	3.66m×7	3.66m×7	3.66m×7
最大孔深 (Hole depth,max)	m	20	25	25
空压机 (Air compressor)				
型号 (Model)		OS110R	CF128R	SCA19DR
品牌 (Trademark)		德国 GHH	德国 GHH	意大利TMC
工作压力 (Working pressure)	MPa	0.8	0.8	0.8
排量 (Displacement)	m ³ /min	6	8.3	10.5
发动机 (Engine)				
型号 (Model)		QSB6.7	QSB6.7	QSC8.3
功率 (Power)	kW/rpm	142/2200	164/2200	194/2200
燃油箱 (Fuel tank capacity)	L	350	350	450
推进 (Feed)				
推进梁总长 (Feed beam length)	mm	8000	8000	8000
推进行程 (Feed Stroke)	mm	5000	5000	5000
补偿行程 (Feed extension)	mm	1200	1200	1200
前倾角度 (Forward tilting angle)	°	140	140	140
翻转角度 (Overturning angle)	°	-20 ~ +90	-20 ~ +90	-20 ~ +90
推进最大速率 (Feed rate, max)	m/s	0.8	0.8	0.8
最大推进力 (Feed force, max)	kN	25	25	25
最大提升力 (Lifting force ,max)	kN	35	35	35
臂 (Boom)				
全长 (Full length)	mm	2800	2800	2800
举升角度 (Lifting angle)		+45 ~ -30	+45 ~ -30	+45 ~ -30
摆动角度 (Oscillating angle)		L15 R55	L15 R55	L15 R55
行走能力 (Travel capability)				
行走速度 (Traveling speed)	km/h	3.5/2.0	3.5/2.0	3.5/2.0
最大牵引力 (Traction force, max)	kN	100	100	100
爬坡能力 (Gradeability)	°	25	25	25
履带架摆角 (Track tilt angle)	°	±10	±10	±10
离地间隙 (Ground clearance)	mm	400	400	400
液压凿岩机 (Hydraulic drill rig)				
型号 (Model)		SWHD220/YYG14L	SWHD220/YYG18H	SWHD250/HC170RP
品牌 (Trademark)		Sunward/Atlas	Sunward/Atlas	Sunward/Montabelt
冲击功率 (Impact power)	kW	20/14.7	20/18	25/23.4
回转速度 (Rotary speed)	rpm	200	200/90 ~ 180	150/130
回转扭矩 (Rotary torque)	Nm	1200/1000	1200/1300	1800/1590
外型尺寸 (Dimension)				
重量 (Gross weight)	T	14	15	16
长×宽×高(运输) (L×W×H Transportation)	m	11×2.92×3.35	11×2.92×3.35	11×2.92×3.35
长×宽×高(工作) (L×W×H Working)	m	8.4×2.92×9.15	8.4×2.92×9.15	8.4×2.92×9.15

SWDR系列切削钻机

SWDR Series Rotary Cutting Drill Rig



SWDR138切削钻机基于成熟挖掘机平台二次开发，配置高效推进、回转、除尘装置、螺杆空压机、实现高速切削或冲击凿岩；配置挖掘装置，即是一台完整挖掘机，实现一机三用。SWDR138切削钻机应用于工程建设、煤矿等钻爆施工。全面取代分体机作业，工作效率成倍提高，运行成本大副降低。

Based on the secondary development of the established excavator platform, SWDR138 cutting rig is equipped with effective and efficient propelling, rotation, dedusting devices, and screw-type air compressor, achieving fast cutting or impacting of the rock; when provided with an excavation device, it would be a complete excavator, and thus the same machine can be used for three purposes. SWDR138 cutting rigs are used for drilling and blasting in engineering and mining. It fully replaces a combination of separate machines, which increases working efficiency by times and greatly reduces the operation cost.

产品优势 Product advantages

- ◆ 高速、大扭矩回转切削；高风压、大风量螺杆空压机冲击凿岩，钻进动力强劲。
- ◆ 自动接卸杆，实现深孔钻进，大大提高作业效率。
- ◆ 两级干式除尘系统、独有的防顶冲机构，有效降低粉尘，维持了清洁的作业环境。
- ◆ 凿岩回转推进液压自适应于岩层变化，有效提高钻进效率，防止卡钻。
- ◆ Fast and large-torque rotary cutting; screw-type air compressors with high pressure and large air flow provide strong power during the drilling of rocks.
- ◆ Automated extension and removal of drill rods allows for the drilling of deep holes and greatly improves the working efficiency.
- ◆ The two-stage dry dedusting system and the unique anti-thrusting mechanism effectively reduce dust and maintain a clean working environment.
- ◆ The rotation and propelling are adaptive to the change of rock layers through the hydraulic pressure, which effectively improves the drilling efficiency, and prevents the rig from jamming.



技术参数 Technical Data

主要参数 MAIN DATA	单位 UNIT	SWDR138
作业参数(Operation parameter)		
钻孔范围(Drilling range)	mm	105-152
钻杆直径(Drill rod diameter)	mm	83
钻杆长度 (Drill rod length)	m	4
最大孔深 (Hole depth,max)	m	24
上车回转(Upper carriage rotation)	°	360
空压机(Air compressor)		
型号(Model)		DLQ550RH
工作压力(Working pressure)	MPa	1.7
排量(Displacement)	m ³ /min	15.5
功率(Power)	kW/rpm	179/1800
发动机(Engine)		
型号(Model)		QSB6.7-C190
功率 (Power)	kW/rpm	140/2100
燃油箱 (Fuel tank capacity)	L	300
推进(Feed)		
推进梁总长 (Feed beam length)	mm	8200
推进行程(Feed Stroke)	mm	4500
推进最大速率(Feed rate, max)	m/s	0.8
最大推进力 (Feed force, max)	kN	40
最大提升力 (Lifting force ,max)	kN	50
动臂偏摆(Boom deflection)	°	/
行走能力(Travel capability)		
行走速度(Travel speed)	km/h	3.45/5.6
最大牵引力(Traction force, max)	kN	160
爬坡能力(Gradeability)	°	25
离地间隙(Ground clearance)	mm	480
接地比压(Ground pressure)	bar	0.5
履带架摆角(Track tilt angle)	°	/
回转动力头 (Rotary head)		
型号 (Model)		DLT40R
回转速度 (Rotary speed)	rpm	200
回转扭矩(Rotary torque)	Nm	4000
外型尺寸(Dimension)		
重量(Gross weight)	T	24
长×宽×高(工作) (L×W×H) (Working)	m	11×3.4×8.5
长×宽×高(运输) (L×W×H) (Transportation)	m	14.8×3.4×3.5

SWDH系列液压凿岩钻机

SWDH Series Hydraulic Drill Rig



产品优势 Product advantages

SWDH60是一种简易液压凿岩钻机，广泛应用于小孔径中硬或坚硬岩石的钻孔作业。

SWDH60 is a simple hydraulic rock drill widely used for drilling small-diameter holes on medium hard or hard rocks.

- ◆ 配置国际知名品牌凿岩机，岩层破碎能力强，钻进速度快，能耗低。
 - ◆ 关键部件钻架、空压机、平台、驾驶室、钻臂与切削钻机共平台生产，可方便的实现与SWDR80A切削钻机的互相改装。
 - ◆ 变幅调整、上车回转、行走动作同挖掘机一样灵活便捷，且操控习惯同挖掘机。
 - ◆ 配置液压凿岩自适应逻辑控制块，实现凿岩动作自适应于岩层变化。
- ◆ Equipped with internationally renowned rock drills that have powerful rock breaking capacity, drill at a fast speed and cost less energy.
- ◆ Key components such as the derrick, air compressor, platform, cab, arm and cutting rig are produced at the same platform, which makes them easy to be refitted with the SWDR80A cutting rig.
- ◆ Its amplitude adjustment, superstructure rotation, and traveling movements are as flexible and convenient as that of an excavator; moreover, its operating habits are the same as those of an excavator.
- ◆ It is equipped with hydraulic pressure adaptive and logic control module that enables the drilling movements to adapt to the change of rocks.

技术参数 Technical Data

主要参数 MAIN DATA	单位 UNIT	SWDH60
作业参数 (Operation parameter)		
钻孔范围 (Drilling range)	mm	36-60
钻杆直径 (Drill rod diameter)	mm	R32
钻杆长度 (Drill rod length)	m	3.66
最大孔深 (Hole depth,max)	m	3.2
上车回转 (Upper carriage rotation)	°	360
空压机 (Air compressor)		
型号 (Model)		TA-120
工作压力 (Working pressure)	MPa	0.7
排量 (Displacement)	m ³ /min	1.5
功率 (Power)	kW/rpm	11
发动机 (Engine)		
型号 (Model)		V3300-DI
功率 (Power)	kW/rpm	54.9/2600
燃油箱 (Fuel tank capacity)	L	140
推进 (Feed)		
推进梁总长 (Feed beam length)	mm	4800
推进行程 (Feed Stroke)	mm	3500
推进最大速率 (Feed rate, max)	m/s	0.06
最大推进力 (Feed force, max)	kN	7.5-10
行走能力 (Travel capability)		
行走速度 (Travel speed)	km/h	4.5/3.1
最大牵引力 (Traction force, max)	kN	55
爬坡能力 (Gradeability)	°	25
离地间隙 (Ground clearance)	mm	338
接地比压 (Ground pressure)	bar	0.435
凿岩机 (Rock-Drilling rig)		
型号 (Model)		HC25
钎尾规格 (Bit shank specification)		R32
回转速度 (Rotary speed)	rpm	130-230
回转扭矩 (Rotary torque)	Nm	320
冲击压力 (Impact pressure)	bar	150
冲击能 (Impact energy)	J	150
外型尺寸 (Dimension)		
重量 (Gross weight)	T	7.8
长×宽×高(工作) (L×W×H Working)	m	6.1×2.2×5.02
长×宽×高(运输) (L×W×H Transportation)	m	8.5×2.2×3.15

SWDL系列螺旋地桩钻机

SWDL series spiral pile drill rig



产品优势 Product advantages

SWDL系列螺旋地桩钻机是公司自主创新的一款螺旋地桩钻进设备，广泛应用于太阳能电池板、广告牌、路灯、栅栏、旗杆、交通标识、隔离网、简易房屋搭建等地桩施工，其地层适应性强，钻桩效率高、简易便捷。

SWDL series screw-type ground pile drilling rig, is an innovative screw-type ground pile drilling equipment developed by the company, widely used in the ground piles engineering in the erection of solar panels, billboards, street lights, fences, flagpoles, traffic signage, isolation nets, and simple houses, and it has good adaptation to the ground, high drilling efficient and is easy to operate.

- ◆ 大扭矩动力头回转，动力强劲，地层适应性强。
 - ◆ 回转与推进依据作业地层工况精确匹配，易于调节，钻桩效率高。
 - ◆ 配备地桩导向装置，保证钻桩垂直度。
 - ◆ 根据地桩的结构尺寸配备不同的接桩装置，拆装灵活、高效。
 - ◆ 针对不同地层状况，可配备潜孔冲击、切削、短螺旋等多种工具，实现全地层钻进。
- ◆ Large-torque power head rotation, strong power, great ground adaptation.
 - ◆ The rotation can be accurately matched with the propelling based on the operating conditions on the ground, and it is easy to adjust and offers high drilling efficiency.
 - ◆ The pile guide device can ensure the perpendicularity of the piles being drilled.
 - ◆ It is equipped with different pile extension devices, depending on the size of the pile, and they are easy and fast to remove and install.
 - ◆ Multiple tools for down-the-hole impact, cutting, and short screwing can be provided depending on the strata status, achieving all-strata drilling.

技术参数 Technical Data

主要参数 MAIN DATA	单位 UNIT	SWDL150	SWDL600	SWDL800
钻桩参数 (Pile parameters)				
钻桩直径 (Pile diameter)	mm	76	76 ~ 90	76 ~ 200
钻桩深度 (Pile depth)	mm	1800	3000	4000
底盘 (Chassis)				
轮距 (Wheel track)	mm	1430	2240	2745
轨距 (Gauge)	mm	1150	1680	2312
履带宽度 (Crawler width)	mm	250	400	350
离地间隙 (Ground clearance)	mm	280	340	460
推土铲长度 (Bulldozer blade length)	mm	1400	2080	/
行走能力 (Travel capability)				
最大牵引力 (Traction force, max)	kN	19	55	100
行走速度 (Travel speed)	km/h	4.7/2.6	4.5/3.1	3.2/2.0
爬坡能力 (Gradeability)	°	20	25	25
履带架摆角 (Track tilt angle)	°	/		±10
推进 (Feed)				
推进梁长度 (Feed beam length)	mm	3400	4800	6920
推进行程 (Feed Stroke)	mm	2000	3500	4500
推进速度 (Feed speed)	mm	2	3	4
提升速度 (Lifting speed)	m/min	30	24	30
推进能力 (Feed force)	kN	15	30	75
回转 (Rotary)				
回转扭矩 (Rotary torque)	Nm	1500/3000	6000	6000
回转速度 (Rotary speed)	rpm	40	40	40
发动机 (Engine)				
型号 (Model)		3TNV82A-SSU	V3300-DI	4BT3.9
排量 (Displacement)	L	1.331	3.3	3.9
功率/转速 (Power/Rev)	kW/rpm	16/2200	54.9/2600	75/2200
燃油箱容量 (Fuel tank capacity)	L	42.5	140	300
上车回转 (Upper carriage rotation)		360		/
外型尺寸 (L×W×H)	m	5.65×1.4×2.6	8.5×2.2×3.15	9.04×2.95×3.4
整机重量 (Gross weight)	T	3	7.8	16

施工案例
Construction cases

凿五洲之石 钻高山海底

Not only rocks in each continent
but also place in every altitude, We can drill.

山河智能SWD系列凿岩设备，以其先进的技术、可靠的品质和完善的服务体系，深受广大用户的信赖。产品远销欧洲、美洲、亚洲、非洲及独联体等国家和地区，在全球范围爆破钻凿施工项目中发挥了积极作用，经受住了各种矿山及严酷环境的考验，得到行业市场的认可。

Sunward's SWD series down-the-hole rigs are well welcomed and relied on by customers because of their advanced technology, reliable quality and complete service system. The company's products are sold in countries and regions like Europe, America, Asia, Africa and the Commonwealth of the Independent States and play a positive role in blasting and drilling works around the world. They have been challenged by various mines and extreme conditions and are thus recognized by the market.





施工地点：中国西藏；
 工程情况：孔径200mm，孔深13m，矿山类型为铜多金属矿，包含调整时间，单孔耗时20min左右，突破了海拔5300m的潜孔钻机最高施工高度。
 Construction site: Xizang, China.
 Project conditions: hole diameter: 200mm; hole depth: 13m; mine type: copper polymetallic ore; It takes 20 minutes for a hole including adjustment time. It breaks through the construction height elevation of 5300m for down-the-hole drill rig.



施工项目：福建泉州湾深水航道工程；
 工程情况：水深30m，钻孔深度50m，浪涌1.6m，岩石类型为玄武岩，包含调整时间，52min成孔。
 Construction project: Waterway project in Quanzhou Bay of Fujian.
 Project conditions: depth of water: 30m; hole depth: 50m; surge: 1.6m; rock type: basalt; It takes 52 minutes for a hole including adjustment time.



青海施工
 Qinghai construction



俄罗斯煤矿
 Russian coal mine



伊朗金矿
 Iran gold mine



新疆煤矿
 xinjiang coal mine



抚顺煤矿
 Fushun coal mine



缅甸铜矿
Burma copper mine



新疆施工
xinjiang construction



湖南湘乡水泥矿
Hunan cement mine



新疆喀什锰矿
Xinjiang manganese mine



华新水泥宜都矿山
Hubei huaxin cement mine



长江太子矶炸礁工程
Yangtze rock blasting project



印尼石灰石矿
Indonesia limestone mine



伊朗最大的铜矿施工(海拔2800米, 零下15°C)
Construction in Iran's largest copper mine (the altitude of 2800 meters, the temperature of 15 degrees below zero celsius.)



纳米比亚施工
Construction in Namibia



伊朗施工
Construction in Iran



朝鲜镁矿
North Korea magnesium ore



缅甸玉石矿
Burma jade mine

售后服务 After-Service

为客户创造价值 让客户无后顾之忧

Create value for customers and eliminate future troubles for customers



在全国各地设有配件仓库, 形成总部仓库、区域中心仓库、省级仓库和地级市仓库四位一体的配件供应保障体系, 储存了价值上亿元、2万余种零配件。800名一线服务工程师, 200个服务网点, 300台服务车, 上百家服务顾问单位, 保证高效、快捷的售后服务。

The spare parts warehouses are established around the world to form an integrated spare parts supply assurance system composed of headquarter warehouse, regional central warehouse, province-level warehouse, and prefecture-level warehouse and store more than 20,000 types of spare parts worthy of RMB >100 million. 800 frontline service engineers, 200 service stations, 300 service vehicles, and >100 service consultant organizations are available for the customers' services.

服务承诺：一个电话 全程无忧

Service commitment: Whole-process trouble-free with merely one call.

24小时热线 24-Hour Hotline

您有任何需要, 只需拨打24小时售后服务热线:400-887-8230
Please call the 24-hour after-service hotline at 400-887-8230 should you have any need.

一刻钟回复 15min Response

一刻钟内售后服务工程师将主动和您取得联系, 向您了解设备情况和服务需求, 通过电话远程指导处理问题。

Within 15min, our after-service engineer will proactively contact you to understand the equipment situation and your service needs and remotely guide the problem-solving via telephone.

1小时出发 1-Hour Departure

若电话指导无法处理好故障, 服务工程师在1小时内携带维修工具出发前往设备所在现场精心现场维修服务。

If the malfunction can't be solved via telephone guidance, the service engineer will depart with repair tools within one hour for the location of the equipment to provide elaborate field repair services.

2小时到达 2-Hour Arrival

办事处所在市内2小时内, 省内12小时, 省外48小时内到达现场。

Our service engineer will arrive at the site within 2 hours for the cities with established representative office, within 12 hours for the regions within the province, and within 48 hours for the regions outside of the province.

重大情况处理 Handling of major events

重大和特殊情况, 服务体系将启动快速反应机制、专家支持机制和配件绿色通道。

In event of any major or special event, the service system will launch the rapid response mechanism, expert support mechanism, and green spare parts channel.

电话回访 Call-back visit

现场服务完工后, 公司总部呼叫中心对每次服务进行电话回访, 跟踪服务的质量和完成情况, 听取客户的意见和建议并反馈到各职能部门进行落实和改善, 以便为客户提供更优质的服务。

At completion of the field services, our headquarter call center will perform call-back visit for every service to follow up the quality and fulfillment of the service, listen to the customers' opinions and suggestions, and feed back to various functional departments for implementation and improvement, in order to provide the customers with excellent services.