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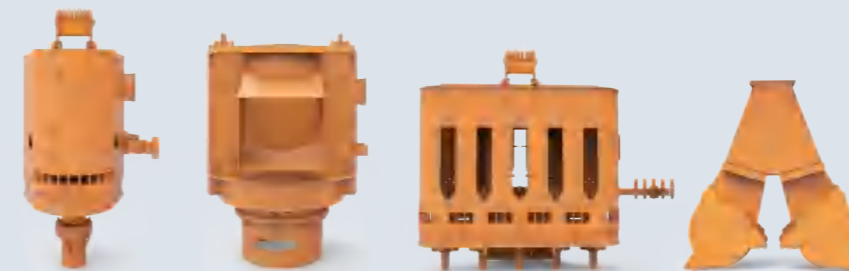
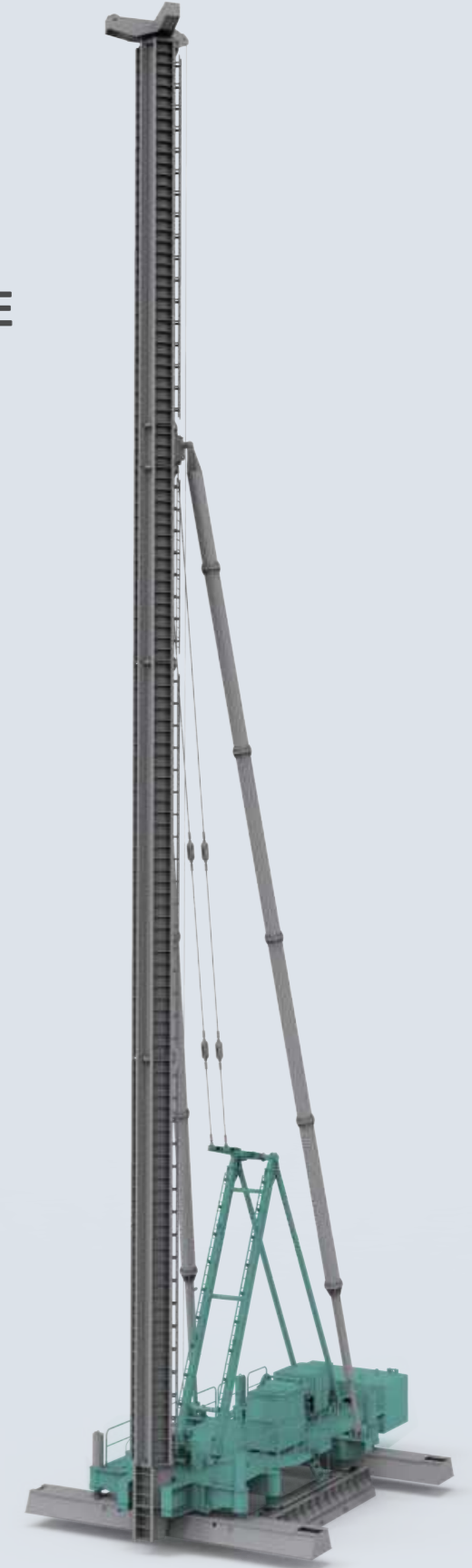
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JZBS 系列双滑道步履式桩架

JZBS SERIES MULTI-FUNCTIONAL DOUBLE RAILS WALKING-TYPE PILE FRAME



企业愿景：
铸就百年桩工精品企业

企业使命：
以优质的产品和服务赢得客户的尊重与青睐

企业价值观：
爱心 正直 协作 担当 创新 共赢 崇学 笃行



振中机械



ZHENZHONG PILING EQUIPMENT

振中机械始创于1983年，是一家专业从事于桩工机械研发、制造与销售的科技型国家高新技术企业，坐落于浙江温州市瑞安经济开发区，占地51亩，是中国工程机械行业协会理事单位、中国桩工机械行业协会副理事长单位，同时拥有“中国建筑科学院研究院浙江省基础施工机械研究中心”，业内多位知名专家受聘于该研究中心，主导起草多项产品国家标准和“浙江制造”标准，拥有专利30多项。1987年9月5日公司成立了全国第一个民营企业党支部，扬起了非公企业飘扬的第一面红旗，是浙江省乃至全国非公企业党建探索实践之路的开篇一笔，获得了“温州市党建示范点”、“温州市瓯江先锋基层党组织”、“温州市先进基层党组织”等荣誉称号。

公司早在1987年与1995年分别与中国建筑科学研究院北京建筑机械化研究院、日本建调株式会社建立长期紧密的合作关系，依托这两家合作单位雄厚的技术力量成功开发十八个系列九十多规格的智能、环保桩工产品，参与提供国家特大重点工程桩工设备的选型方案与应用，先后获得多项国家、省部级科技奖励与认定。

近年来公司积极响应国家双碳政策，坚持规范化治理和科技创新，高度重视科研投入，吸引了一批优秀创业团队及研发人员加入公司，先后开发了多轴水泥土搅拌钻机、双回旋潜孔锤多功能钻机、双滑道静钻根植钻机、双轮搅地下连续墙钻机等具有国际领先技术的新型桩工装备，并成功推向市场。

振中机械公司将始终以“铸就百年桩工精品企业”为愿景，以最大的核心竞争力成为我国桩基础施工综合解决方案提供商的领导者。

Zhenzhong was established in 1983, and has been specializing in the pile driving machinery. Our company has two factories. One is in Zhejiang Province, and the other is in Shanghai. Our total is nearly 100000 sqm.

In 1987, our company cooperated with Beijing Construction Machinery Research Institute, one of the best piling machine research institute in China. We cooperated with Kencho Co.,Ltd., a famous piling equipment company in Japan in 1995 and Korea heavy machinery Co.,Ltd. in 2017.

So far, we have developed 80 kinds of piling products, and have become a well-known high-tech enterprise. We have exported hundreds of vibratory hammers and piling equipment to Japan, Southeast Asia, the Middle East and Africa.

We have been devoted to the technical innovation, and won a first prize from China Construction Ministry and High-Tech Enterprise by Zhejiang Province Government.

We always adhere to the policy of quality administration system and are the first to acquire the certificate of ISO9001 in the construction machinery industry of Zhejiang province. And also awarded as Credit Enterprise and "Star Enterprise" by the government for years.

www.zhenzhong.com

A RESPECTABLE ENTERPRISE WITH MISSION

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振中机械

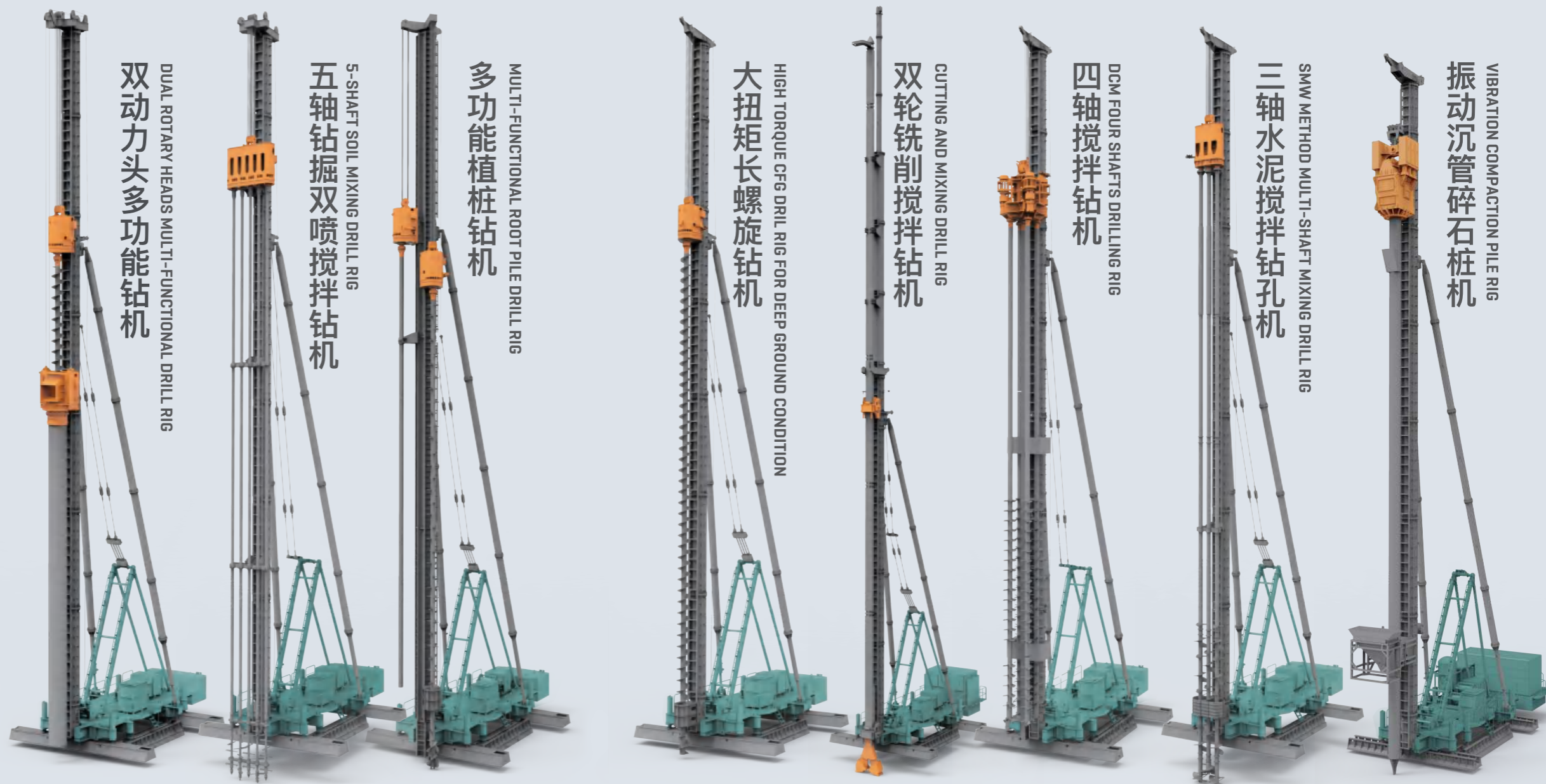
ZHENZHONG PILING EQUIPMENT
Since 1983

TO BE A COMPETITIVE ENTERPRISE
IN THE PILE FOUNDATION CONSTRUCTION

铸就百年桩工精品企业



DZ/EP 系列振动锤 SERIES VIBRO HAMMER



双动力头多功能钻机
DUAL ROTARY HEADS MULTI-FUNCTIONAL DRILL RIG

五轴钻掘双喷搅拌钻机
5-SHAFT SOIL MIXING DRILL RIG

多功能植桩钻机
MULTI-FUNCTIONAL ROOT PILE DRILL RIG

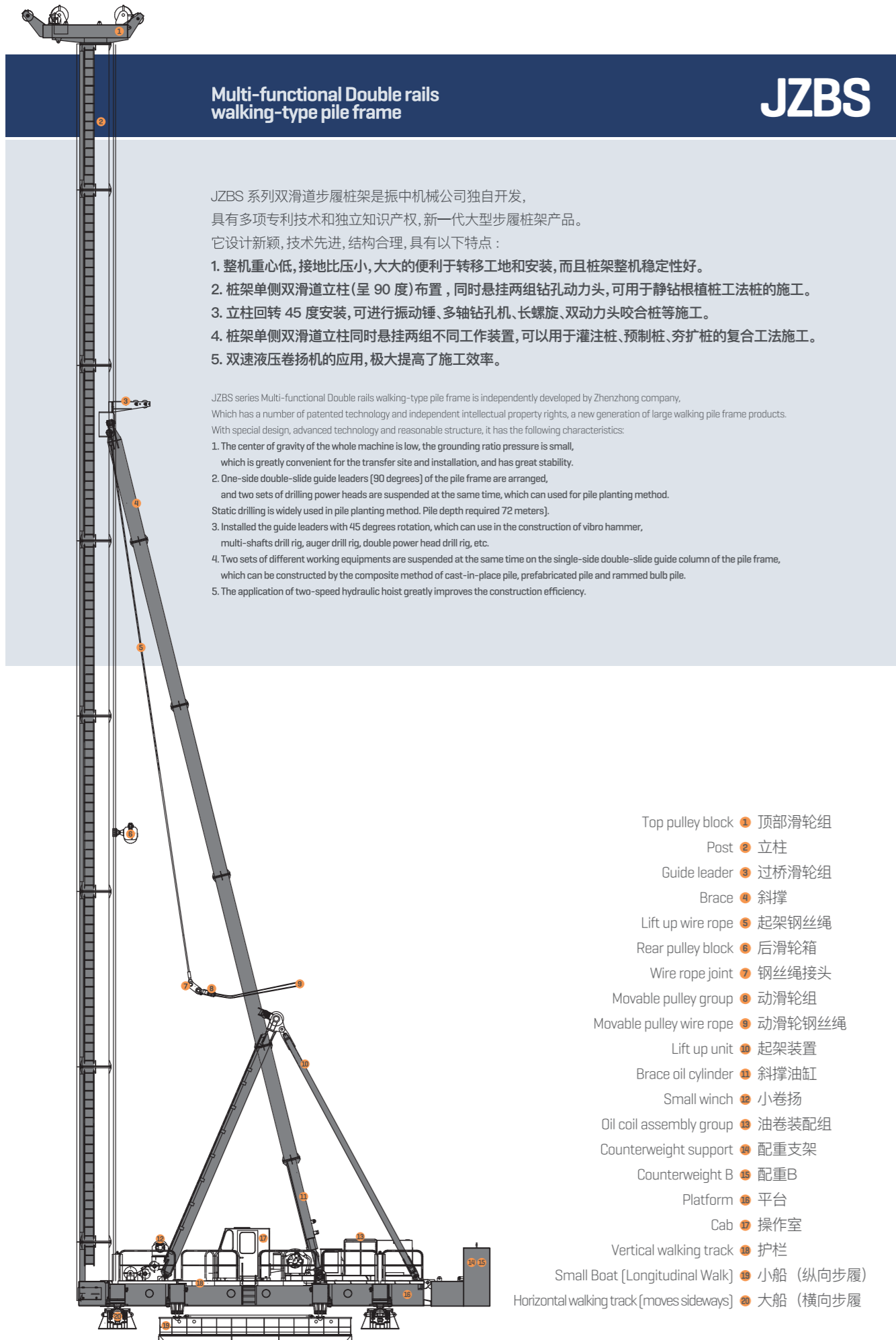
大扭矩长螺旋钻机
HIGH TORQUE CFG DRILL RIG FOR DEEP GROUND CONDITION

双轮铣削搅拌钻机
CUTTING AND MIXING DRILL RIG

四轴搅拌钻机
DCM FOUR SHAFTS DRILLING RIG

三轴水泥搅拌钻孔机
SMW METHOD MULTI-SHAFT MIXING DRILL RIG

振动沉管碎石桩机
VIBRATION COMPACTION PILE RIG



Multi-functional Double rails walking-type pile frame

JZBS

JZBS 系列双滑道步履桩架是振中机械公司独自开发，具有多项专利技术和独立知识产权，新一代大型步履桩架产品。它设计新颖，技术先进，结构合理，具有以下特点：

1. 整机重心低，接地比压小，大大的便于于转移工地和安装，而且桩架整机稳定性好。
2. 桩架单侧双滑道立柱(呈 90 度)布置，同时悬挂两组钻孔动力头，可用于静钻根植桩工法桩的施工。
3. 立柱回转 45 度安装，可进行振动锤、多轴钻孔机、长螺旋、双动力头咬合桩等施工。
4. 桩架单侧双滑道立柱同时悬挂两组不同工作装置，可以用于灌注桩、预制桩、夯扩桩的复合工法施工。
5. 双速液压卷扬机的应用，极大提高了施工效率。

JZBS series Multi-functional Double rails walking-type pile frame is independently developed by Zhenzhong company, which has a number of patented technology and independent intellectual property rights, a new generation of large walking pile frame products. With special design, advanced technology and reasonable structure, it has the following characteristics:

1. The center of gravity of the whole machine is low, the grounding ratio pressure is small, which is greatly convenient for the transfer site and installation, and has great stability.
2. One-side double-slide guide leaders [90 degrees] of the pile frame are arranged, and two sets of drilling power heads are suspended at the same time, which can be used for pile planting method. Static drilling is widely used in pile planting method. Pile depth required 72 meters].
3. Installed the guide leaders with 45 degrees rotation, which can use in the construction of vibro hammer, multi-shafts drill rig, auger drill rig, double power head drill rig, etc.
4. Two sets of different working equipments are suspended at the same time on the single-side double-slide guide column of the pile frame, which can be constructed by the composite method of cast-in-place pile, prefabricated pile and rammed bulb pile.
5. The application of two-speed hydraulic hoist greatly improves the construction efficiency.

- Top pulley block ① 顶部滑轮组
- Post ② 立柱
- Guide leader ③ 过桥滑轮组
- Brace ④ 斜撑
- Lift up wire rope ⑤ 起架钢丝绳
- Rear pulley block ⑥ 后滑轮箱
- Wire rope joint ⑦ 钢丝绳接头
- Movable pulley group ⑧ 动滑轮组
- Movable pulley wire rope ⑨ 动滑轮钢丝绳
- Lift up unit ⑩ 起架装置
- Brace oil cylinder ⑪ 斜撑油缸
- Small winch ⑫ 小卷扬
- Oil coil assembly group ⑬ 油卷装配组
- Counterweight support ⑭ 配重支架
- Counterweight B ⑮ 配重B
- Platform ⑯ 平台
- Cab ⑰ 操作室
- Vertical walking track ⑱ 护栏
- Small Boat [Longitudinal Walk] ⑳ 小船 (纵向步履)
- Horizontal walking track (moves sideways) ㉑ 大船 (横向步履)

Multi-functional Double rails walking-type pile frame				JZB 240S	JZB 270S	JZB 300S
MODEL						
HEIGHT OF LEADER	立柱总长度	m		42	51	60
DIAMETER OF LEADER COLUMN	立柱筒体直径	mm		Φ920	Φ1020	Φ1220
CENTER DISTANCE OF MAST GUIDE RAIL	立柱导轨中心距	mm		2x600xΦ102	2x600xΦ102	2x600xΦ102
ADJUSTABLE ANGLE OF LEADER	立柱角度调整范围 (左右方向)	°		±1.5	±1.5	±1.5
STROKE OF CYLINDER FOR SUPPORT LEADER	斜撑油缸行程	mm		2800	2800	3200
STROKE OF CYLINDER FOR LEADER	立柱微调油缸行程	mm		400	400	410
MAX. EXTRACTION FORCE	最大立柱长度时最大拉拔力	KN		700	800	800
MAIN WINCH I (FOR UPPER POWER HEAD) 液压卷扬机(吊挂上动力头)	单绳拉力	Single rope tension	KN	120	120max	120
	绳速	Line speed	m/min	0-26[0-32]	0-26[0-32]	0-40
	钢丝绳直径	Wire rope diameter	m	Φ22	Φ22	Φ22
	容绳量	Rope capacity	m	550	600	880
MAIN WINCH II (FOR DOWN POWER HEAD) 液压卷扬机(吊挂下动力头)	单绳拉力	Single rope tension	KN	120	100max	120
	绳速	Line speed	m/min	0-26[0-32]	0-26[0-32]	0-40
	钢丝绳直径	Wire rope diameter	m	Φ22	Φ22	Φ22
	容绳量	Rope capacity	m	530	600	800
WINCH FOR LEADER TO STANDING UP 液压卷扬机(起架)	单绳拉力	Single rope tension	KN		100max	110
	绳速	Line speed	m/min		0-18	0-18.3
	钢丝绳直径	Wire rope diameter	m		Φ22	Φ24
	容绳量	Rope capacity	m		320	340
VICE WINCH 副卷扬机	单绳拉力	Single rope tension	KN	40	40	40
	绳速	Line speed	m/min	0-32	0-32	0-30
	钢丝绳直径	Wire rope diameter	m	Φ18	Φ18	Φ18
	容绳量	Rope capacity	m	120	120	120
SWING ANGLE OF PLATFORM	平台回转角度	°		±10	+10	
PILE FRAME CROSSWISE MOVEMENT 桩架横向移动	速度	Speed	m/min	<4.5	<4	<2.7
	步长	Step length	mm	3000	3850	3100
PILE FRAME LENGTH WAYS MOVEMENT 桩架纵向移动	速度	Speed	m/min	<2.7	<2	<2.5
	步长	Step length	mm	800	800	800
PILE FRAME LIFT 桩架顶升	速度	Speed	m/min	<0.63	<0.6	<0.44
	高度	Height	mm	600- -600	600- -600	900- -500
CRAWLER CENTER TO CENTER DISTANCE 履板轨距	工作时	Working	mm	9000	9300	9700
	移位时	Transportation	mm	5000	5500	6000
WHEEL DISTANCE 轮距	工作时	Working	mm	5000	5500	6000
	移位时	Transportation	mm	4900	4900	5000
HORIZONTAL WALKING TRACK 横向履板	长度	Length	mm	10000	12000	11060
	宽度	Width	mm	1300	前1600(后1300)	1800/1200
VERTICAL WALKING TRACK 纵向履板	长度	Length	mm	6600	6600	6900
	宽度	Width	mm	1600	2200	2400
AVERAGE GROUND PRESSURE	接地比压 (不带工作装置)	Mpa		≤0.1	≤0.1	≤0.1
MOTOR POWER	电机功率	kW		45+30	45+30	55/110
NOMINAL PRESSURE	液压系统额定压力	Mpa		25/20	25/18	25/30
TOTAL WEIGHT OF PILE FRAME	桩架总质量	t		145	185	238

多功能双滑道步履桩架

一机多用,可以用来悬挂多种施工装置。

- 长螺旋钻机
- 三轴、五轴等多轴水泥搅拌钻机
- 双动力头钻机
- 双轮铣削搅拌钻机
- 多功能植桩钻机
- 振动锤

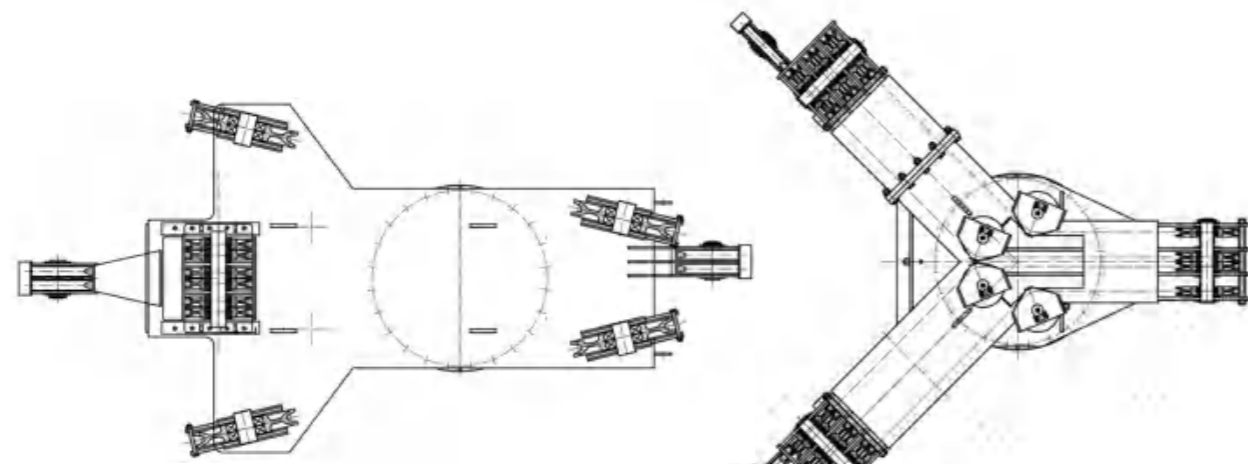
Multi-functional Double rails walking-type pile frame

This pile frame can be used with a variety of construction equipment.

- CFA Drilling rig
- Soil mixing wall drill rig
- Dual power head drill rig
- Cutter soil mixing drill rig
- Multi-functional pile root drill rig
- Vibro hammer

可选不同的顶部滑轮组

DIFFERENT TOP PULLEY OPTION

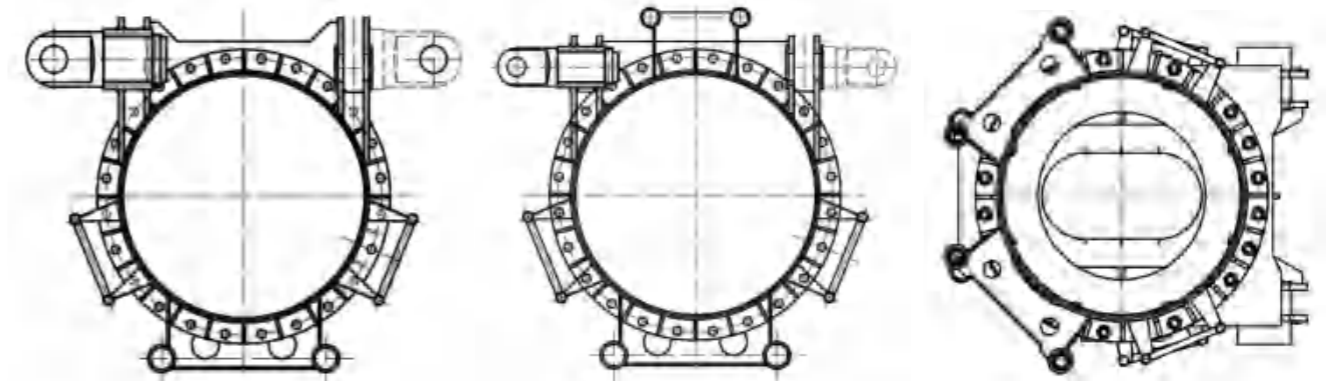


▲ 可适用于长螺旋, 双动力头, 多轴钻机
FOR CFG/ DUAL POWER HEAD DRILL RIG/MULTI-SHAFT DRILL RIG

▲ 可适用于静钻根植工法钻机
FOR ROOT PILE DRILL RIG

可选不同立柱

DIFFERENT GUIDE LEADER OPTION



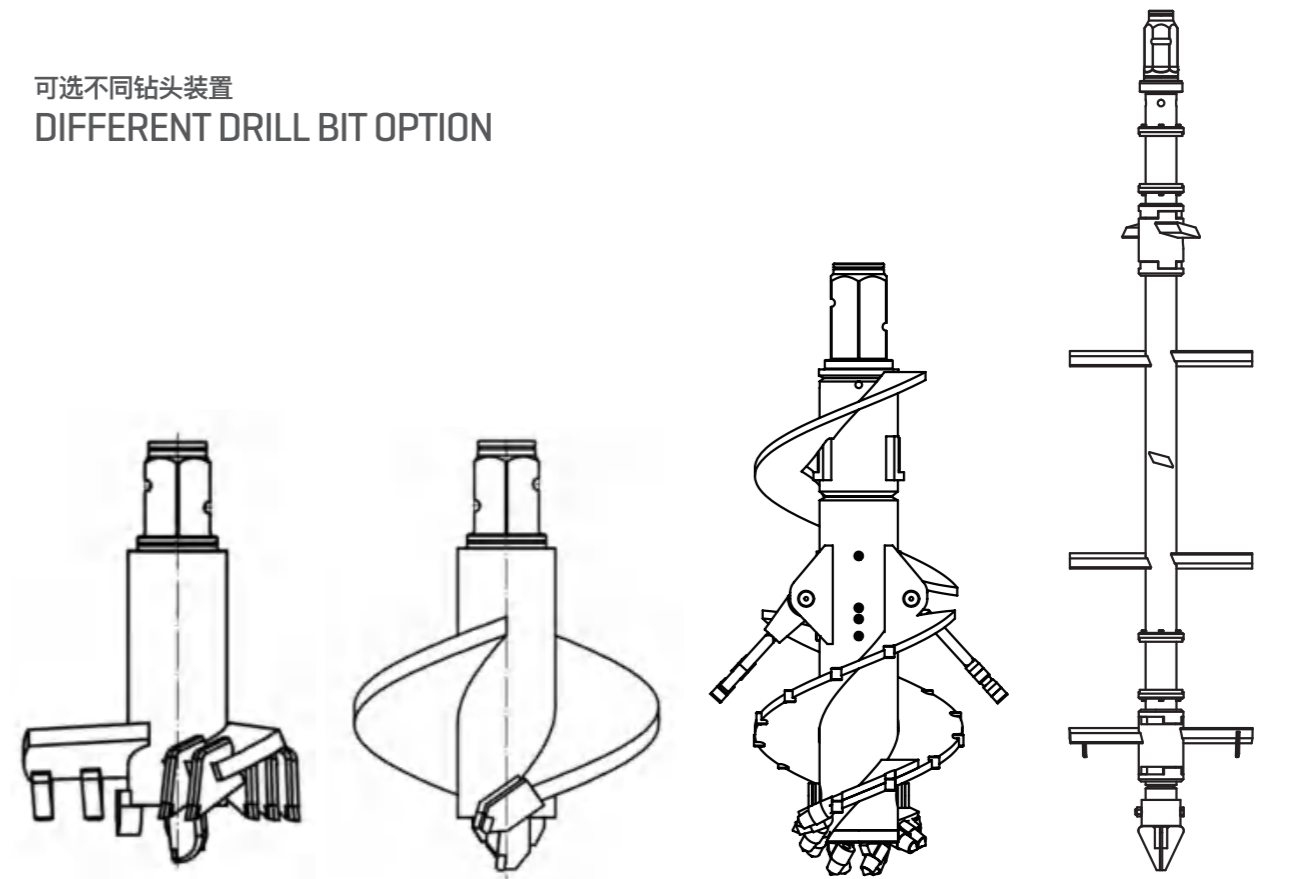
▲ 单滑道立柱
适合多轴动力头
SINGLE LEADER RAIL
FOR MULTI-SHAFT DRILL RIG

▲ 前后双滑道
适合长螺旋、双动力头钻机
FRONT AND BACK LEADER RAIL
FOR CFG AND DUAL
POWER HEAD DRILL RIG

▲ 90°布置
适合静钻根植工法钻机
90°LEADER RAIL
FOR ROOT PILE DRILL RIG

可选不同钻头装置

DIFFERENT DRILL BIT OPTION



▲ 适用于三轴钻头
FOR 3-SHAFT
DRILL BIT

▲ 适用于长螺旋钻头
FOR CFG
DRILL BIT

▲ 适用于扩大头钻头
FOR PILE ENLARGED
DRILL BIT

▲ 适用于上下喷浆五轴钻头
FOR 5-SHAFT
DRILL BIT



DUAL ROTARY HEADS MULTI-FUNCTIONAL DRILL RIG 双动力头多功能钻机

产品简介 PRODUCT BRIEF

双动力头多功能钻机是我公司引进（株）韩国重机械先进技术，结合自主创新研发的一种高效环保基础施工设备。可在土层、砂层、卵石层、岩层流沙层、流塑性淤泥层、溶洞、易坍塌、地下水位高等复杂地质条件下快速钻孔形成大承载力嵌岩（入岩）桩、抗滑桩、咬合桩等。

Dual power head multifunctional drilling rig is a kind of high efficiency environmental protection basic construction equipment. It can be rapidly drilled to form large -bearing rock (rock entering) piles, anti-sliding piles, and bite piles under complex Geological conditions such as soil layer, sand layer, gravel layer, rock formation, stream sand layer, flow plastic silt layer, cave dissolution, easy collapse, and high groundwater level.

优势与特点 ADVANTAGES AND CHARACTERISTICS

一、可实现大直径桩高效“入岩”施工，能在卵石漂石层及坚硬岩层等特殊复杂地层成孔，成桩质量好，施工效率高。

二、施工不需泥浆护壁、无泥浆制作及排放污染、现场整洁，符合国家节能减排的政策要求，具有良好的经济社会效益和广阔的市场应用前景。

三、上下动力头逆向旋转钻进，潜孔锤冲击频率高，低振幅高频率碎岩，全护筒跟进护壁，避免坍塌危险，消除混凝土浇筑过程中夹泥通病。

四、广范适用于复杂特殊地质的桩基础施工，极大的提高了工程进度和施工质量。

五、一机多能，具有单机多功能、多用途、多样化的施工的特点，可减少设备投资、提高设备的利用率。

1.It can do the construction of drilling the large-diameter into the rock efficiently, and can form holes in special complex layers such as pebble boulders and hard rock layers. It is with good pile quality and high efficiency.

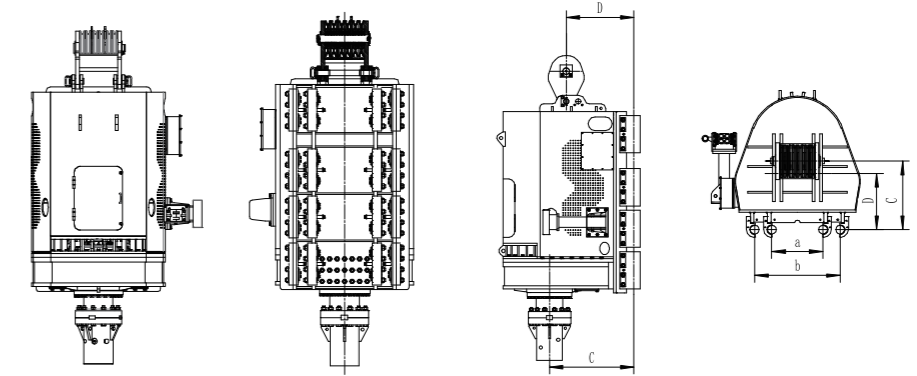
2.The construction process does not require mud wall protection, no mud production and pollution, clean and tidy on site. It is in line with the national energy conservation and emission reduction policy requirements, and it has good economic and social benefits and broad market application prospects.

3.The dual rotary heads are reverse in drilling,when it works with the DTH hammer, which is high-impact -frequency and low-amplitude, which will easily crush the rock, and the whole casing is followed by the protection wall to avoid the danger of collapse and eliminate the common problem of mud in the concrete pouring process.

4. It has widely application in the complex and special ground condition, such as fine sand layer, gravel layer, quicksand, dark river, flow plastic sludge, karst cave, hard rock formation, and also can do the construction in the high-level-groundwater situation, which greatly improves the project schedule and quality.

5.One machine multi- functions, which can reduce equipment investment and improve equipment utilization.

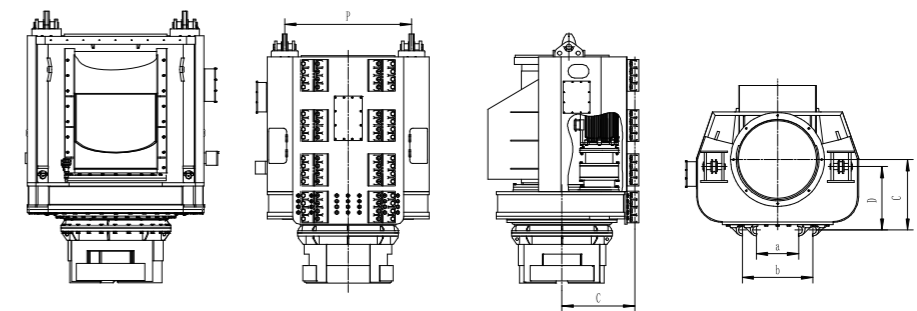
The technical parameters of Inner rotary head 内侧动力头技术参数



MODEL			ZSD06/12-850	ZSD25-1000	ZSD41-1000
Motor	电机	kW	55kW×4/8P-2EA	55kW×2	75kW×2
Screw rotation speed	额定转速	rpm	17.4/8.7 [0-34.8]	0-8.4	0-7
Related Torque	额定扭矩	kg.m	6037/12074	25012	40929
Weight	重量	kg.m	7500	9500	9700
C		mm	850/1000	1000	1000
D		mm	785	800	800
a		mm		600	
b		mm		1000	

注：额定转速为 50Hz 未经变频调速的双速输出速度，括弧内为变频调速后的转速。 * 由于产品改进，上表中规格参数可能有所改进，恕不预先通知。

The technical parameters of Outer rotary head 外侧动力头技术参数



MODEL			ZXD 40-1000	ZXD 49-1000	ZXD 58-1200
Motor	电机	kW	75kW×2	90kW×2	90kW×2
Screw rotation speed	额定转速	rpm	0-5	0-5	0-6
Related Torque	额定扭矩	T.m	0-40	0-49	0-57.3
Pile diameter	桩径	mm	Φ1000	Φ1000	Φ1200
Weight	重量	kg	13800	14100	14600
C		mm	1000	1000	1000
D		mm	900	900	900
P		mm	1800	1800	1800
a		mm	600	600	
b		mm	1000	1000	

TECHNICAL CHARACTERISTICS

技术特性



一、分离式双动力头

——同轴逆向旋转、上下任意分离、恒功率、大转矩

可分离式双动力头配置，进行复合双回转驱动，内侧钻杆与外侧钻套可同时或分别进行同轴逆向旋转；根据施工工艺需要，内侧动力头与外侧动力头可上下任意分离、相对运动。采用电动机驱动，变频控制，根据负载调整转速，动力头在不同转速下也具有相同的功率，动力性能优异、输出转矩大、过载能力强。

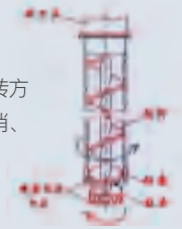
1. SEPARATE DUAL POWER HEAD

——Coaxial reverse rotation, up and down arbitrary separation, constant power, large torque
The detachable dual power head configuration is used for compound double rotary drive. The inner drill pipe and the outer drill sleeve can rotate in the same direction or in the opposite direction; According to the needs of construction technology, the inner power head and the outer power head can be separated up and down at will and move relative. Motor drive, frequency conversion control, speed adjustment according to load, power head has the same power at different speeds, excellent power performance, large output torque, and strong overload capacity.

二、独特的钻孔方式

——同轴逆向旋转、转矩自平衡

在双动力头驱动下，采用内侧钻杆与外侧钻套同轴逆向旋转方式钻削；钻杆与外钻套产生的钻削转矩方向相反、相互抵消、自行平衡，使钻孔过程稳定、无噪声振动。



2. UNIQUE DRILLING METHOD

——Coaxial reverse rotation, torque self-balancing
Under the driving of double power heads, the drilling is conducted by the coaxial reverse rotation of the inner drill pipe and the outer drill sleeve; The drilling torque produced by the drill pipe and the outer drill sleeve is in the opposite direction, cancels each other and balances itself, making the drilling process stable and noise-free.

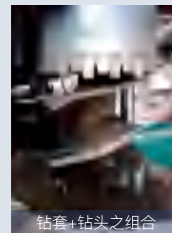
三、新式组合钻具、组合潜孔锤

——刚性强、精度高、不怕硬、能“入岩”

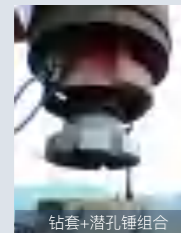
钻杆钻头与外钻套双重组合钻孔，外钻套护壁，钻杆连续排土，整体刚性强、钻削力大、成孔精度高，施工速度快，可应对各种复杂地层强力钻削。此外，还可配置外钻套和潜孔锤的组合（配置相应的空压机供气系统），实现高效率打孔“入岩”。

3. NEW COMBINED DRILLING TOOL AND COMBINED DOWN-THE-HOLE HAMMER

——Strong rigidity, high precision, not afraid of hardness, and able to "enter the rock"
The drill pipe drill bit and the outer drill sleeve are combined to drill holes, the outer drill sleeve protects the wall, and the drill pipe is continuously dumped. The overall rigidity is strong, the drilling force is large, the hole forming accuracy is high, and the construction speed is fast. It can deal with the strong drilling of various complex formations. In addition, the combination of external drill sleeve and down-the-hole hammer (equipped with corresponding air compressor gas supply system) can also be configured to achieve high efficiency drilling "into rock".



钻套+钻头之组合



钻套+潜孔锤组合

四、双动力头电驱动、变频控制

——运行平稳、扭矩大、重量轻、体积小

——国内首创

4. DUAL POWER HEAD ELECTRIC DRIVE, FREQUENCY CONVERSION CONTROL

——Stable operation, large torque, light weight and small volume
——First in China

五、整机采用电驱动

——动力性能优异、绿色、环保、无污染的现场施工

5. THE WHOLE MACHINE IS ELECTRICALLY DRIVEN
——Site construction with excellent power performance, green, environmental protection and pollution-free

六、可适配步履底盘

——稳定性高、安全可靠

——国内外同类机型稳定性第一

6. ADAPTIVE WALKING CHASSIS

——High stability, safety and reliability
——The stability of similar models at home and abroad ranks first

七、先进的控制系统

应用先进的智能控制技术、采用高可靠性的嵌入式工程机械控制器和真彩LCD显示屏、智能控制系统，其集成度高，控制平稳、快速、精确。简化了操作手柄和操作动作，全中文人机界面、操作简便、使用可靠。

7. ADVANCED CONTROL SYSTEM

Advanced intelligent control technology, embedded construction machinery controller with high reliability, true color LCD display screen and intelligent control system are applied, with high integration, stable, fast and accurate control. The operation handle and operation action are simplified, and the man-machine interface in Chinese is complete, easy to operate and reliable to use.

DUAL POWER MULTI-FUNCTION DRILL RIG DRILLING PILE METHOD

双动力多功能钻机 -- 常规钻孔桩工法

适用于复杂地质（砂层、卵砾石层、暗河及溶洞等）及硬岩或坚硬岩层的施工效率更高。施工时边钻进边下护筒，干成孔、无需泥浆护壁，可穿透各种复杂地层至强风化或中风化层，确保孔壁稳定及成桩质量。

It is applicable to complex geology (sand layer, gravel layer, underground river and karst cave, etc.) and hard rock or hard rock stratum with higher construction efficiency. During construction, the pile casing is drilled while drilling, and the dry hole is formed without mud wall protection. It can penetrate all kinds of complex strata to strongly weathered or moderately weathered layers to ensure hole wall stability and pile quality.

DOUBLE-POWER MULTI-FUNCTION DRILL RIG (DTH HAMMER) -- ROCK DRILLING METHOD

双动力多功能钻机(潜孔锤)-- 入岩工法

- 1、潜孔锤高负压实 实现了排渣彻底孔底干净，大幅提升钻进功效。
- 2、上下动力头逆向 旋转钻进，潜孔锤冲击频率高，低振幅高频率碎岩，避免坍塌危 险，消除混凝土 浇筑过程中夹泥 通病。
- 3、目前最大输出扭矩可达103TM， 解决长螺旋钻机在特殊地层施工扭矩不足的情况。
- 4、钻机干成孔、噪音小、无泥浆污染、施工场地整洁有序，满足了基础施工的环保要求。
- 5、地下含有大量不可预测的障碍物，常见施工手段成本高、效率低，大直径潜 孔锤加双动力头钻机有着其它施工工 艺无法替代的优越性。

1. The high negative pressure of DTH hammer realizes complete slag removal and clean hole bottom, greatly improving drilling efficiency.
2. Reverse rotation drilling of upper and lower power heads, high impact frequency of down-the-hole hammer, low amplitude and high frequency rock fragmentation, avoiding the risk of collapse, and eliminating the common problem of mud inclusion during concrete pouring.
3. At present, the maximum output torque can reach 103Tm, which can solve the problem of insufficient torque in the construction of long auger in special formations.
4. The drilling rig has dry hole forming, low noise, no mud pollution, and the construction site is clean and orderly, which meets the environmental protection requirements of foundation construction.
5. There are a lot of unpredictable obstacles in the ground, and the common construction methods are high cost and low efficiency. The large-diameter down-the-hole hammer and double-power head drill have advantages that other construction technologies cannot replace.



PILE WITH ROOT ENLARGED AND SOLIDIFIED PREBORED PRECAST PILING RIG



杭州工地



杭州工地



福建筲箕桥污水处理厂



厦门绿发新时代广场(福建第一高楼)



福建厦门金沙书院



福建漳州核电项目



SMW MULTI-SHAFTS SOIL MIXING DRILL RIG 多轴水泥搅拌钻孔机

产品简介 PRODUCT BRIEF

SMW 多轴水泥搅拌钻孔机是北京建筑机械化研究院与浙江振中工程机械有限公司共同开发,具有自主知识产权的新一代大型步履产品。该产品设计新颖,结构合理,技术先进,性能优越,工作稳定可靠。能适用于多种桩基础施工,尤其能满足深基础施工中广泛采用的SMW工法地下连续墙施工工艺。是高速公路、桥梁港口、码头、地铁站和高层建筑中地下桩基础施工的理想、高效设备。

SMW Multi-shafts soil mixing drill rig, jointly developed by Beijing Construction Machinery Comprehensive Research Institute and Zhejiang Zhenzhong Construction Machinery Co., Ltd., is a new generation large-scale walking piling frame. The product features innovative design, rational structure, advanced technology, superior performance and stable and reliable application. It can be applied to a variety of foundation construction, especially to meet the Soil Mixing Wall Method. It is the ideal and efficient equipment for the foundation construction of highways, bridges, ports, docks, subway stations and high-rise buildings.

优势与特点 ADVANTAGES AND CHARACTERISTICS

- 一、稳定、高效的主机系统
- 二、动力头、钻杆、钻具、水泥自动搅拌配料系统
- 三、贴心舒适的驾驶室,方便、简单的单人操纵系统
- 四、便捷的安装及便利的运输
- 五、提供有利于操作及施工管理的电感载荷角度监测仪(选购件),
深层搅拌桩监测仪(选购件)

- 1.Stable And Efficient Piling Frame System
- 2.Power Head, Jackrod, Drilling Too and Cement mixing system
- 3.Comfortable Cab, Convenient and Simple Operating System for Single Person
- 4.Convenient Installation and Transportation
- 5.Provide Inductive Load Angle Monitor (Optional Accessories)
and Deep Mixing Pile Monitor (Optional Accessories)
Which Are Conducive to Conduct Operation and Construction Management



MODEL		ZLD 110 650-3	ZLD 150 650-3	ZLD 180 850-3	ZLD 220 850-3	ZLD 225 850-3	ZLD 270 1000-3	ZLD 180 650-5	ZLD 220 850-5	
Motor power	电机功率	kW	55X2	75X2	90X2	110X2	75X3	90X3	90X2	110X2
Rated revolution speed[outer]	钻杆转速(外)	rpm	20	20	16.6	17.5	20	16	16.5	28
Rated revolution speed[middle]	钻杆转速(中)	rpm	18.9	18.9	14.9	15.7	16.7	16	16.5	25
Output torque	钻杆总扭矩	kN.m	53.6	73.08	107.7	127	114.9	162	100	85.3
Diameter of borehole	钻孔直径	mm	Φ 650X3	Φ 650X3	Φ 850X3	Φ 850X3	Φ 850X3	Φ 1000X3	Φ 650X5	Φ 850×5
Center distance of drill stem	钻杆中心距	mm	450X450	450X450	600X600	600X600	600X600	750X750	450X450X450X450	600X600X600X600
Maximum rod length	最大钻杆长度	m	35	35	35	35/55	35/55	35	30	36
Maximum drilling depth	最大钻孔深度	m	30	30	30	30/50	30/50	30	24	30
Center distance of guide axis	导轨中心距	mm	600	600	600	600	600	600	600	600
Distance from guide axis to drill stem center	导轨与钻杆中心距	mm	935	935	975	975	975	975	655	960
Distance from guide axis to sling center	导轨与起吊中心距	mm	920/780	920/780	920/780	920/780	920/780	920/780	920/780	920
Max.extraction force	最大拔桩力	kN	600	600	700	700	700	700	700	700
Power head weight	动力头重量	t	7.2	8.5	11.5	11.8	11	13.8	12	12
Weight	总重量	t	25	25	37	37/46	37/46	43	33	38

注:上表中钻杆长度为标配,客户可根据所需钻孔深度,选配增加钻杆长度。*由于产品不断改善,上表中规格参数可能有所改进,恕不另行通知。

TECHNICAL CHARACTERISTICS

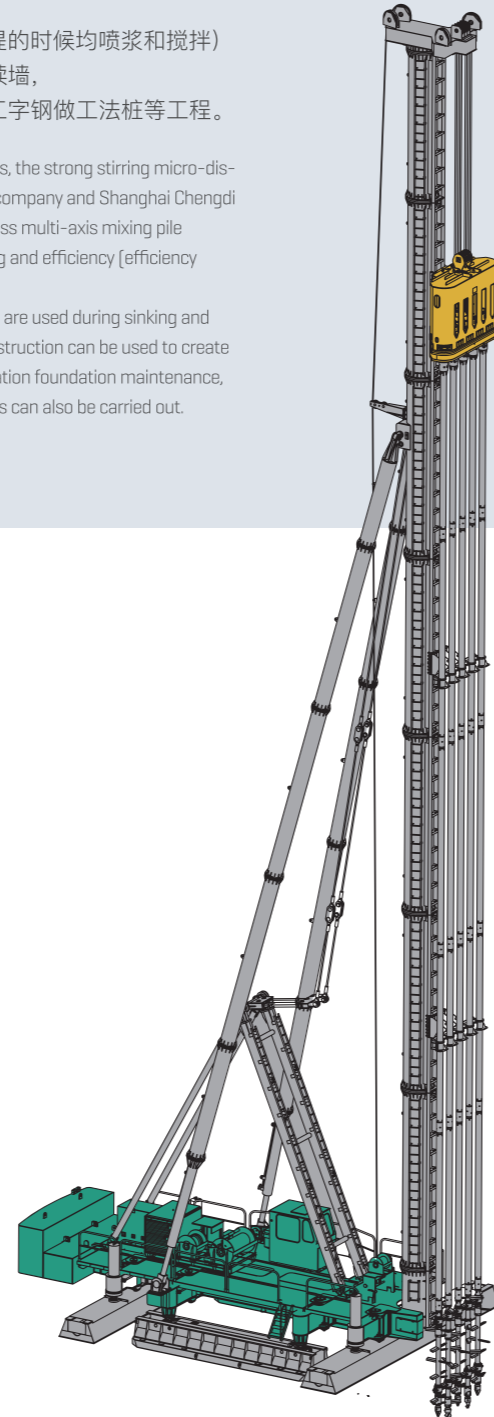
技术特性



ZF系列FCW工法五轴钻掘双喷搅拌钻机
 即强搅微扰无土多轴搅拌桩机，是我公司与上海城地公司合作的产品。
 相比于传统的搅拌桩机，该强搅微扰无土多轴搅拌桩机相当于5根MJS（高压旋喷工法机），具有省水泥（可省50%）、无置换渣土产生、节能高效（效率提升100%）等特点，是一种绿色节能的施工设备。
 施工流程基本上与三轴类似，按照“二喷二搅”施工工艺（即下沉和上提的时候均喷浆和搅拌）进行施工，连接采用整圆套打法施工顺序，连续施工即可做成地下连续墙，同时根据不同需要，作深开挖基础维护、止水、地基加固、也可插入工字钢做工法桩等工程。

ZF series FCW construction method five-axis drilling and digging double-jet mixing drill That is, the strong stirring micro-disturbant soilless multi-axis mixing pile machine, It is the product of cooperation between our company and Shanghai Chengdi Company. Compared with the traditional mixing rig, The strong stirring micro-disturbant soilless multi-axis mixing pile machine is equivalent to 5 MJS, It can save cement (50%), no replacement slag Energy saving and efficiency (efficiency increase of 100%), It is a green and energy-saving construction equipment.

The construction process is similar to that of a three-axis system, where grouting and mixing are used during sinking and lifting. The connection is constructed using the full circle drilling method, and continuous construction can be used to create an underground continuous wall. At the same time, according to different needs, deep excavation foundation maintenance, water sealing, foundation reinforcement, and the insertion of I-shaped steel construction piles can also be carried out.

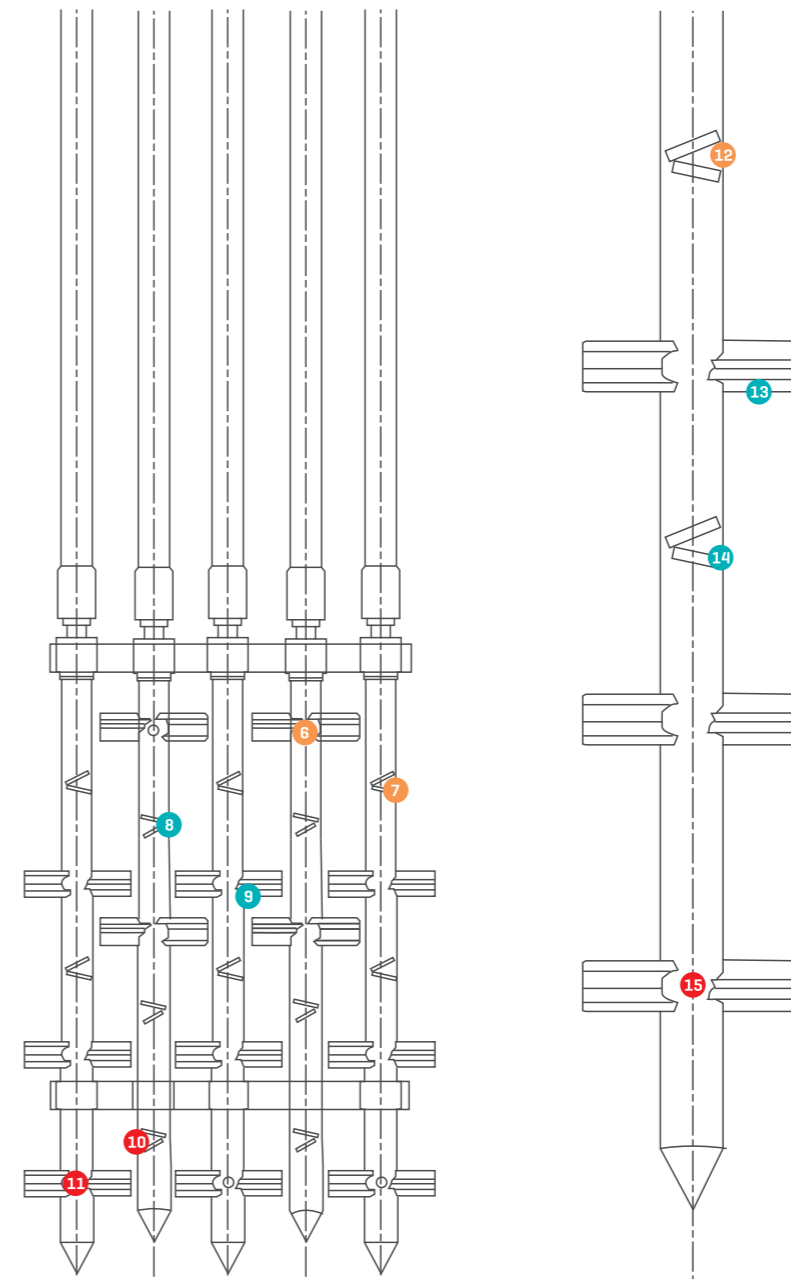


五轴成桩效果图

TECHNICAL CHARACTERISTICS

技术特点

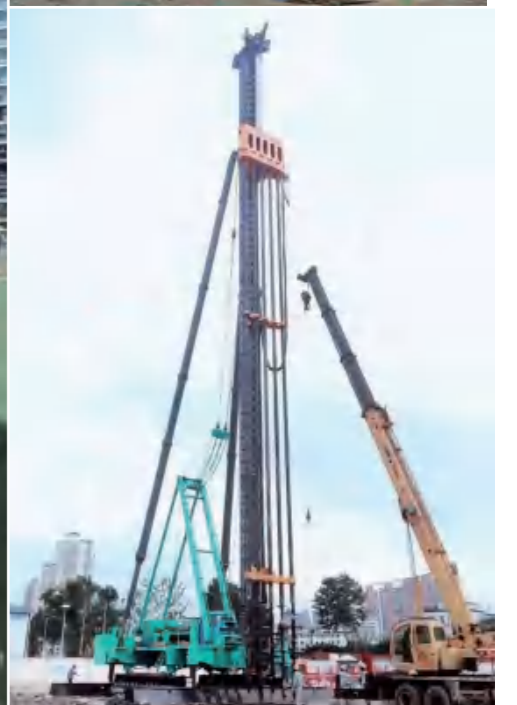
- 上下喷浆（钻头处喷浆口采用上下喷浆模式——专利技术）
- 快速搅拌（五根钻杆并排布置，且钻杆钻速可达28rpm）
- 变频控浆（后台采用变频喷浆方式）
- 无注气施工（不产生泥浆飞溅，无污染）
- 智能化监控系统（选配）
- Up and down gunting [the gunting mouth at the bit adopts up and down gunting mode - patented technology]
- Rapid mixing [five drill pipes are arranged side by side, and the drilling speed of drill pipes can reach 28rpm]
- Frequency conversion slurry control [frequency conversion slurry spraying mode is adopted in the background]
- No gas injection construction [no mud splash, no pollution]
- Intelligent monitoring system [optional]



6.7.12
 上部喷浆口
 UPPER JET POINT

10.11.15
 下部喷浆口
 LOWER JET POINT

8.9.13.14
 搅拌页片
 MIXING BLADES





MULTI-FUNCTIONAL PILE ROOT DRILL RIG

多功能植桩钻机

产品简介 PRODUCT BRIEF

多功能植桩钻机采用低噪音的钻机成孔(静钻)，埋入法完成预制桩(植桩)的桩基础技术，是现代桩基技术的集大成者。其绿色环保、节能减排、高效的显著优势得到了。

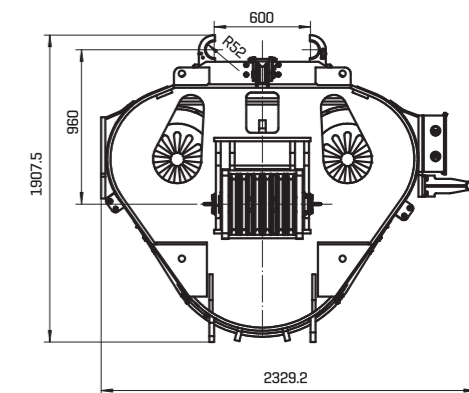
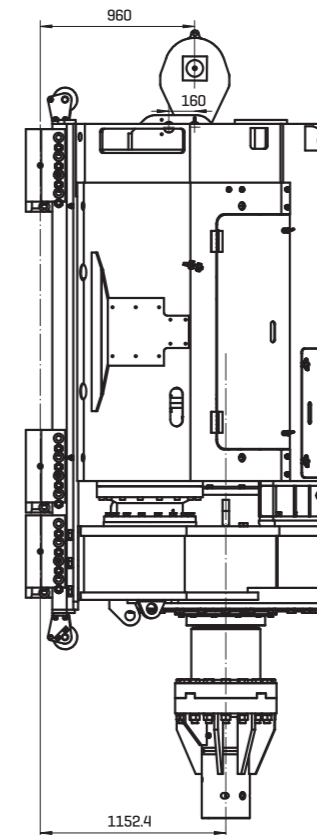
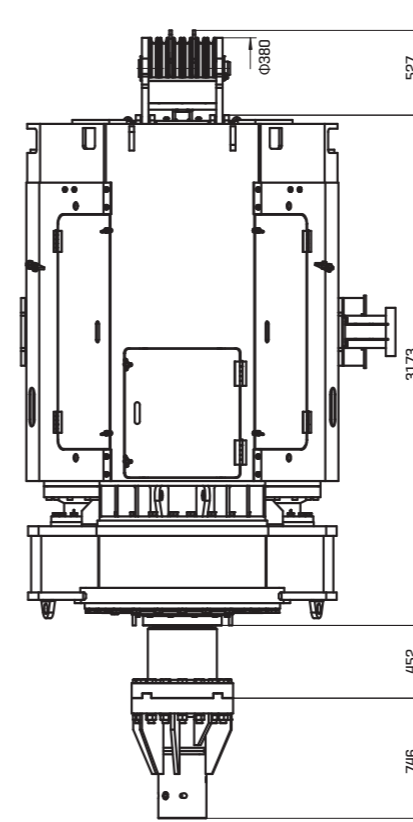
适用范围：适用于粘性土、粉土、砂砾土及地质情况复杂的岩层，扩底直径最大可达钻孔直径的1.6倍，通过注入抗压强度20MPA以上的桩端水泥浆，提高桩基端承受力，控制沉降不均。

通过采用竹节桩等桩型组合及扩底、注浆技术，大幅提高桩基的抗压、抗拔、抗水平承载力。绿色环保，无噪声，从根本上解决了工程建设泥浆排放问题，具有良好的社会效益。施工效率高，单机单日沉桩可达300米以上，经济效率高。

Multi-functional pile root drill rig use low noise drilling machine to form the hole (static drilling), and the embedded method completes the prefabricated pile (pile planting) pile foundation technology, which is the epitome of modern pile foundation technology. Its green environmental protection, energy conservation and emission reduction, high efficiency and remarkable advantages have been obtained

Scope of application: it is suitable for clayey soil, silt, gravel soil and rock stratum with complex geological conditions. The maximum diameter of enlarged bottom can reach 1.6 times of the diameter of drilling hole. The bearing capacity of pile end can be improved and uneven settlement can be controlled by injecting cement slurry with compressive strength above 20MPa.

By adopting the combination of bamboo pile and other pile types, expanding bottom and grouting technology, the compressive, uplift and horizontal bearing capacity of pile foundation are greatly improved. Green environmental protection, no noise, fundamentally solve the problem of mud discharge in engineering construction, with good social benefits. The construction efficiency is high, the single machine single day pile sinking can reach more than 300 meters, and the economic efficiency is high.



MODEL		ZD240	ZD300	ZD360	
Motor power	电机功率	kw	90×2	110×2	132×2
Generator capacity	发电机容量	KVA	400	500	600
Rated speed of drill pipe	钻杆额定转速	r/min	0-20	0-35	0-40
Maximum drill pipe torque	最大钻杆扭矩	t.m	0-14	0-14	0-18
Drill pipe diameter	钻杆直径	mm	299	299	299
Rotary joint device	回转接头装置		两重回转接头装置		
Maximum service pressure of rotary joint	回转接头最高使用压力	Mpa	油压：18 泥浆压力：5MPA		
Drill diameter	钻孔直径		650/750/900	650/750/900	650/750/900
Enlarged diameter	扩大径		975/1125/1350	975/1125/1350	975/1125/1350
Distance between guide rail center and drill pipe center	导轨中心到钻杆中心距离	mm	1152	1152	1152
Distance between guide rail center and pulley center	导轨中心到滑轮中心距离	mm	960	960	960
Center distance of guide rail	导轨中心距	mm	600×102	600×102	600×102
Wire rope diameter	钢丝绳直径	mm	22	22	22
Number of pulleys	滑轮个数	个	6	6	6
Operation mode	操作方式		电气控制	电气控制	电气控制
Total weight (excluding drill pipe)	总重量 (不含钻杆)	T	~12.5	~13	~15.8
Supporting pile frame	配套桩架	T	140	140	140

注：上表中钻杆长度为标配，客户可根据所需钻孔深度，选配增加钻杆长度。* 由于产品不断完善，上表中规格参数可能有所改进，恕不另行通知。

TECHNICAL CHARACTERISTICS

技术特性



一、立柱双滑道90°设计，一机多用，可悬挂两组植入钻机动力头外，还可挂多轴钻机。

The vertical column and double slide way are designed at 90°, and one machine can be used for multiple purposes. In addition to two sets of embedded drill power heads, the multi-axle drill can also be hung.

二、卷扬机具有双速功能，实现负载时提升低速，换杆接杆时实现快速提升下方功能。

The winch has a dual-speed function, which realizes the low-speed lifting when loading, and the rapid lifting function when changing the rod extension.

三、转速可调：通过配置变频器，可实现低负载时快速钻进；钻进困难时，实现大扭矩低速钻机。▶（见右图）

Adjustable speed: fast drilling at low load can be realized by configuring frequency converter; When it is difficult to drill, the high torque and low speed drilling rig shall be realized.

四、模块化产品设计理念，同时满足劲性复合桩和扩底植入桩的应用。▶（见右图）

The modular product design concept meets the application of rigid composite pile and expanded bottom embedded pile at the same time.

五、钻杆采用四通道的设计，通浆、通气、通油的管路避免的避免了浆液堵塞油路的现象。▶（见右图）

The drill pipe is designed with four channels. The slurry, ventilation and oil pipelines avoid the phenomenon of slurry blocking the oil pipeline.

六、通气功能：增加了高压气体，既有利于浆液搅拌均匀，也有利于老粘土护钻头的问题。

Ventilation function: high-pressure gas is added, which is not only conducive to the uniform mixing of slurry, but also conducive to the problem of old clay bit protection.

七、扩底钻头，在吸收现场施工经验和日本技术的基础上做出改进，并已获得专利一项。

可选配：扩底油缸形成监测，使扩孔直径得到有效保障，实现扩底直径的大小和次数都可实现设定。▶（见右图）

The reaming bit has been improved on the basis of absorbing field construction experience and Japanese technology, and has obtained a patent. Optional: bottom-expanding cylinder formation monitoring can effectively guarantee the reaming diameter, and the size and times of bottom-expanding diameter can be set.

八、智能化的施工管理系统

Intelligent construction management system

PHASE I

第一阶段

自动化的泥浆配置搅拌控制，减少人为因素的影响。

根据钻进的速度，自动调节泥浆的供给量。

监控沉桩的垂直度、泥浆供给量、沉桩深度、电流、电压、以及扩孔直径等参数。

施工报表：每延米的搅拌次数、电流与深度曲线等。

GPS桩定位

Automatic mud mixing control reduces the impact of human factors.

Automatically adjust the mud supply according to the drilling speed.

Monitor the verticality of pile sinking, slurry supply, pile sinking depth, current, voltage, and reaming diameter and other parameters.

Construction report: mixing times per linear meter, current and depth curve, etc.

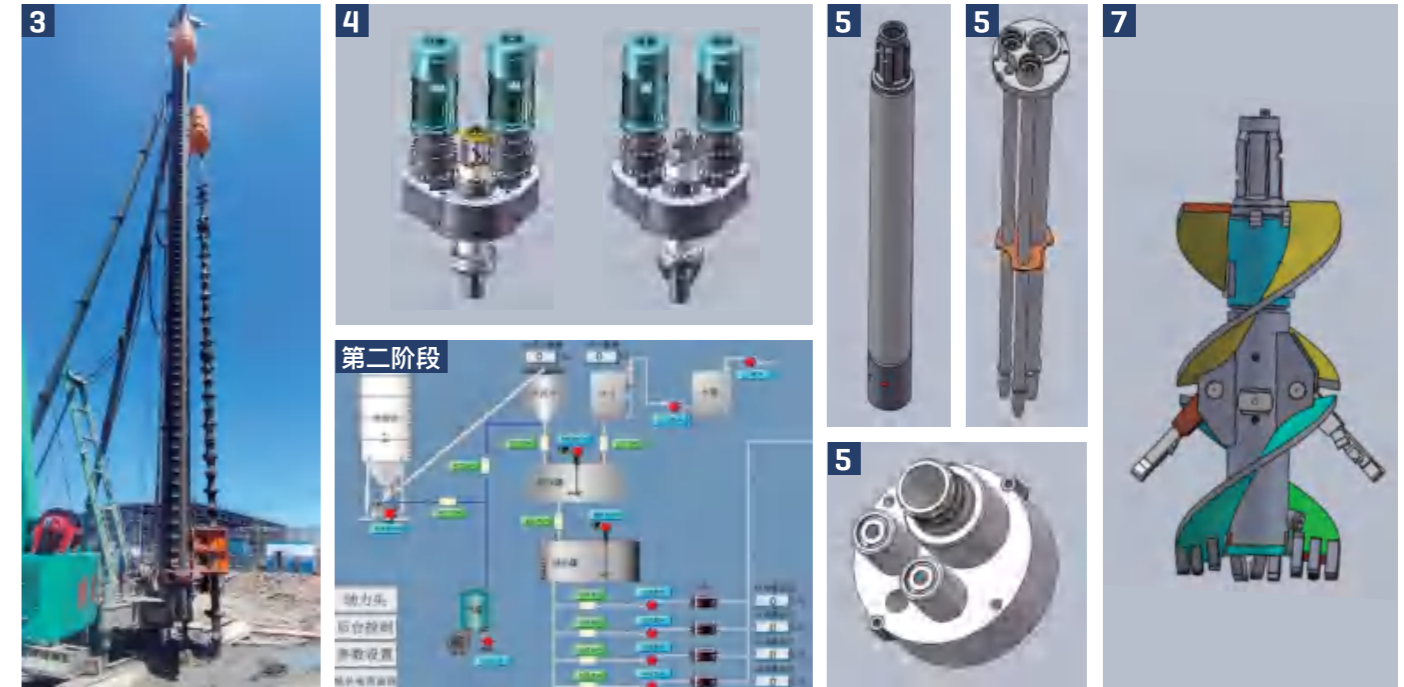
GPS stake positioning

PHASE II

第二阶段

升级后台电控一体化，实现智慧检测平台。▶（见右图）

Upgrade the integration of background electric control and realize the intelligent detection platform.



ATTACHMENT FOR MULTI-FUNCTIONAL PILE ROOT DRILL RIG

多功能植桩钻机产品延伸

A

植入一体机/压桩器

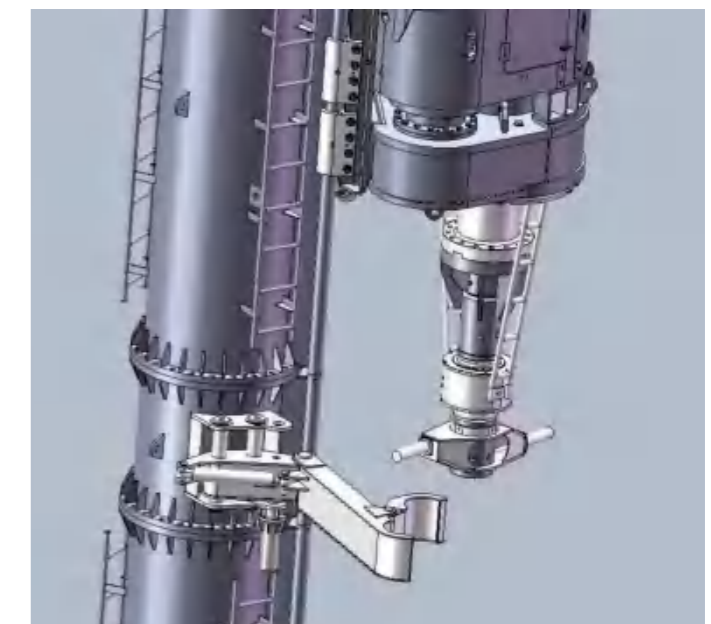
Pile pressing machine



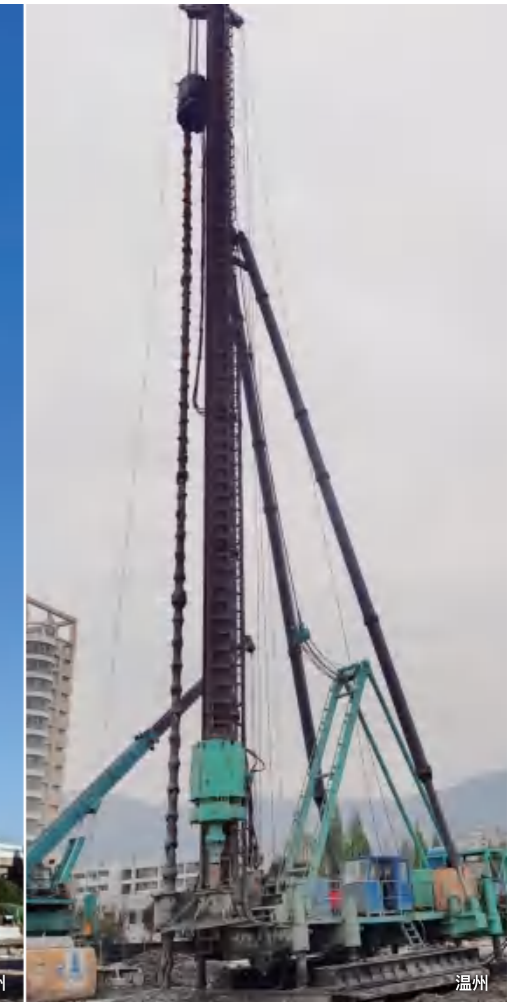
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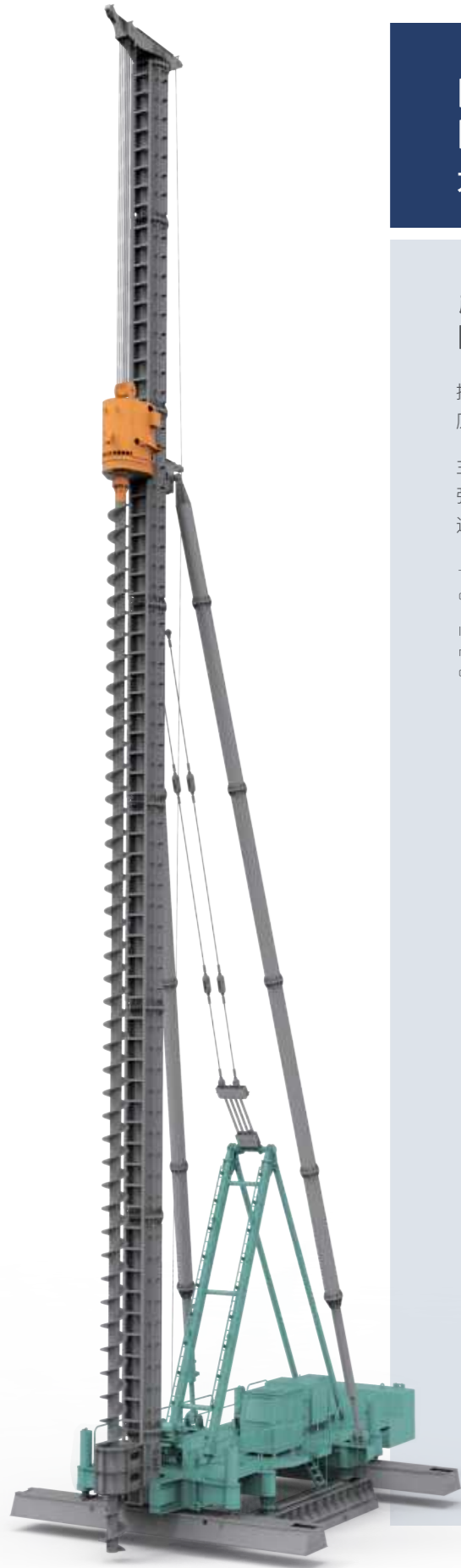
换杆机械臂

Mechanical arm for changing drill rod



MULTI-FUNCTIONAL PILE ROOT DRILL RIG





HIGH TORQUE CFG DRILL RIG FOR DEEP GROUND CONDITION

大扭矩长螺旋钻机

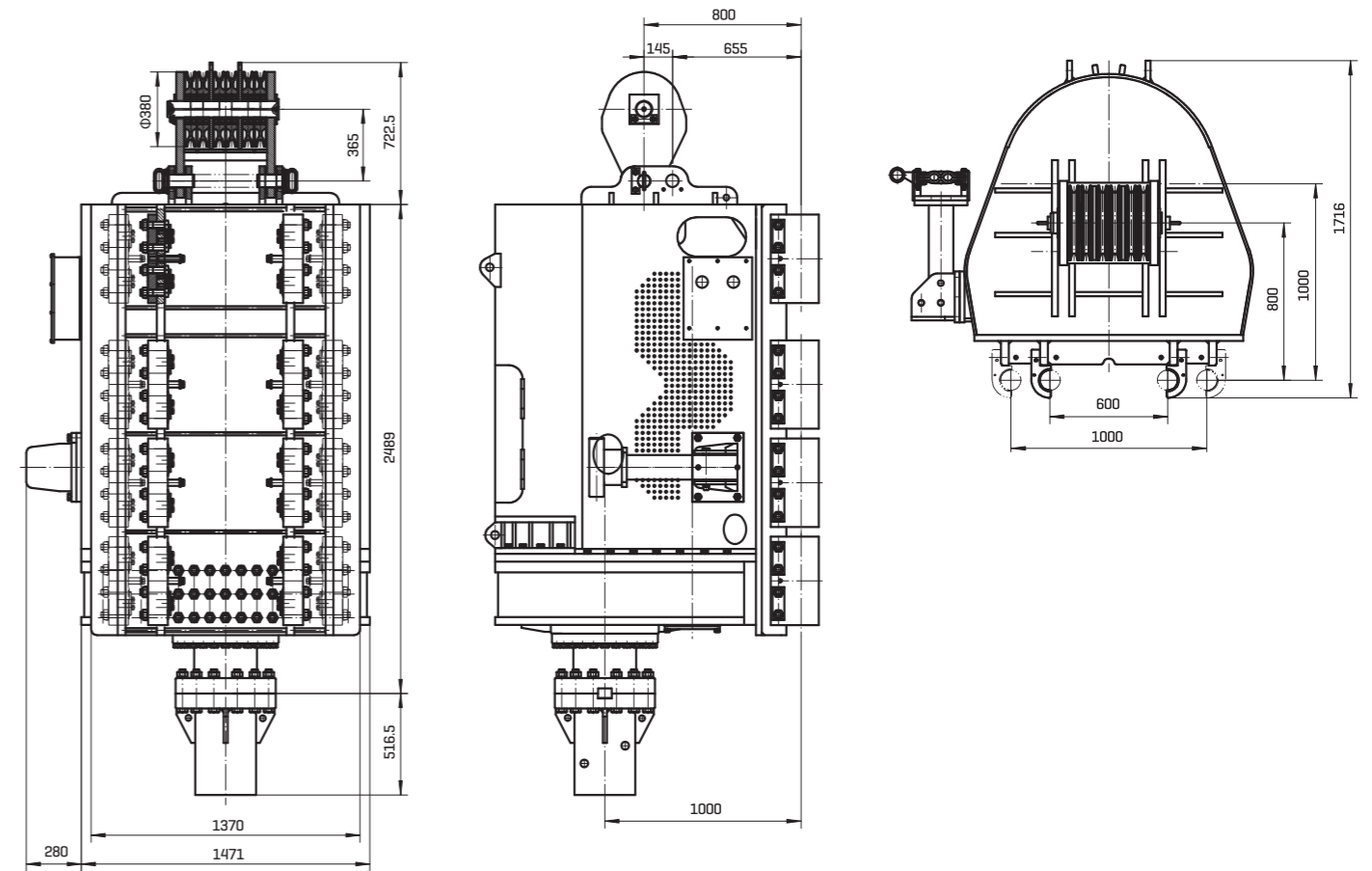
产品简介 PRODUCT BRIEF

振中机械出品的大功率大扭矩长螺旋钻机，是为了适应复杂地层和深度要求，在原有的长螺旋钻机基础上进行的升级。

主要适用于黏土、沙土、沙粒层(卵石层)、鹅卵石这些地层都能打，弱风化、中风化、强风化等复杂地层，这些地层用普通的长螺旋一般很难打，在这种情况下就可以选用大功率大扭矩长螺旋钻机。

The high-power and high torque long screw drill produced by Zhenzhong machinery is an upgrade based on the original long screw drill to adapt to the requirements of complex formation and depth.

It is mainly applicable to clay, sandy soil, sand layer (pebble layer) and cobble, and it can be drilled in weak weathering, medium weathering, strong weathering and other complex strata. These strata are generally difficult to drill with ordinary long spiral. In this case, high-power and high torque long screw drill can be selected.



MODEL	ZL110	ZL180	ZL220		
Motor power	电机功率	kw	55x2	90x2	110x2
Rated speed of drill pipe	钻杆额定转速	r/min	0-20	0-12.5	0-12.5
Maximum drill pipe torque	最大钻杆扭矩	t.m	0-25	0-35	0-45
Drill pipe diameter	钻杆直径	mm	273	299	325
Basic length of drill pipe	钻杆基本长度	m	35	40	45
Distance between guide rail center and drill pipe center	导轨中心到钻杆中心距离	mm	1000	1142.5	1142.5
Distance between guide rail center and pulley center	导轨中心到滑轮中心距离	mm	920	960	960
Center distance of guide rail	导轨中心距	mm	600*102	600/100*102	600/1000*102
Wire rope diameter	钢丝绳直径	mm	22	22	22
Number of pulleys	滑轮个数	个	6	6	6
Operation mode	操作方式		电气控制	电气控制	电气控制
Total weight	总重量	T	~9	~12	~15.4
Supporting pile frame	配套桩架	T	140	170	170

注：上表中钻杆长度为标配，客户可根据所需钻孔深度，选配增加钻杆长度。* 由于产品不断改进，上表中规格参数可能有所改进，恕不另行通知。

HIGH TORQUE CFG DRILL RIG FOR DEEP GROUND CONDITION





CUTTING AND MIXING DRILL RIG

双轮铣削搅拌钻机

产品简介

PRODUCT BRIEF

液压双轮铣削搅拌钻机，运用液压成槽技术与深层搅拌技术的结合，搭载在振中桩架上，可在复杂特殊地质条件下，进行铣削搅拌成槽施工。可在各种地层强力铣削搅拌，在土层、泥层、砂层、板结砂层、卵石层、风化岩土层、中风化岩土层等特殊地质条件下施工。同时，液压铣削搅拌钻机采用步履桩架作为工作平台，“一机两用”，可实现三轴、五轴搅拌钻机功能，性价比高。

- ◎ 铣削、切割、搅拌成槽均匀性好。
- ◎ 底部驱动，成槽效率高。
- ◎ 随铣削搅拌深度增加变化，自动调节铣头内压力平衡。
- ◎ 可靠、稳定的摆刀切割搅拌，提高施工效率。
- ◎ 根据不同地质，可随时加、减压施工。
- ◎ 钻杆采用高性能合金材料制造，确保成槽垂直度。
- ◎ 钻杆夹持机构灵活、方便、可靠，可在任意位置夹持。
- ◎ 独立泵站系统确保铣削、搅拌高效运行。
- ◎ 浆液、铣头、成槽质量监测系统，确保成槽质量的控制
- ◎ 整机重心低、行走及施工稳定性好。

It is mainly applicable to clay, sandy soil, sand layer [pebble layer] and cobble, and it can be drilled in weak weathering, medium weathering, strong weathering and other complex strata. These strata are generally difficult to drill with ordinary long spiral. In this case, high-power and high torque long screw drill can be selected. Meanwhile, the cutting and mixing drill rig use the walking-type pile frame, which can change the drill bit into the 3-axis or 5-axis, to work as the SMW soil mixing drill rig machine.

- Milling, cutting, mixing wall uniformity is good.
- Bottom drive, high slotting efficiency.
- The pressure balance inside the milling head is automatically adjusted as the milling stirring depth increases.
- Reliable and stable swing knife cutting and mixing, improve the construction efficiency.
- According to different geology, can be added at any time, decompression construction.
- The drill pipe is made of high performance alloy material to ensure the verticality of the groove.
- Drill pipe clamping mechanism is flexible, convenient and reliable, and can be held at any position.
- Independent pumping station system ensures efficient operation of milling and stirring.
- Slurry, milling head, groove quality monitoring system to ensure the quality control of wall
- The whole machine has low center of gravity, good walking and construction stability.



TECHNICAL CHARACTERISTICS

技术特性

SIMULTANEOUS REVERSE ROTATION CUTTING OF LEFT AND RIGHT MILLING WHEELS

左右铣轮同时逆向旋转切削

水平平行轴逆向旋转旋转、同时进给切削、恒功率、大转矩。
左右铣轮同时逆向旋转切削，进行双回转驱动，铣头可同时进行水平平行轴逆向旋转；根据施工工艺需要，调整铣轮的工艺参数。采用电液驱动，根据负载自动调整转速，铣头在不同转速下也具有较大的功率，动力性能优异、输出转矩大、过载能力强。

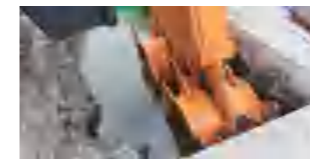
The horizontal parallel axis rotates in reverse direction, simultaneously feeds and cuts, with constant power and large torque. The left and right milling wheels can rotate in reverse direction at the same time to carry out double-rotation drive, and the milling head can rotate in reverse direction with horizontal parallel axis at the same time; Adjust the process parameters of the milling wheel according to the needs of the construction process. Electro-hydraulic drive is adopted to automatically adjust the speed according to the load. The milling head also has large power at different speeds, excellent power performance, large output torque and strong overload capacity.

UNIQUE HOLE MILLING METHOD

独特的铣孔方式

水平平行轴逆向旋转、转矩自平衡
在铣头驱动下，水平平行轴逆向旋转方式铣削；铣头产生的铣削转矩方向相反、相互抵消、自行平衡，使铣孔过程稳定、无噪声振动。

Reverse rotation of horizontal parallel axis, torque self-balancing
Driven by the milling head, the horizontal parallel axis is milled in reverse rotation mode; The milling torque produced by the milling head is in the opposite direction, cancels each other and balances itself, making the hole milling process stable and noise-free.



NEW DIVERSIFIED MILLING CUTTER WHEEL

新式多样化铣刀轮

刚性强、精度高、铣削搅拌效率高
铣头连续铣削搅拌，铣刀轮整体刚性强、钻削力大、成孔精度高，施工速度快，可应对各种复杂地层强力铣削搅拌。此外，还可配置不同的切削刀轮完成不同地质的铣削搅拌，实现高效率施工。

Strong rigidity, high precision, high milling mixing efficiency
The milling head is continuously milled and stirred, the overall rigidity of the milling cutter wheel is strong, the drilling force is large, the hole forming accuracy is high, and the construction speed is fast. It can be used for powerful milling and mixing in various complex formations. In addition, different cutting tool wheels can be configured to complete milling and mixing in different geological conditions to achieve efficient construction.

MAIN STRUCTURE

主要结构

1. 铣头装置
2. 上夹持提升装置
3. 下夹持加压装置
4. 中间滑轮组
5. 喷水装置
6. 保压油箱
7. 长方形钻杆
8. 液动力站
9. 电液控制操作系统
10. 步履或履带式桩架
11. 后台系统

1. Milling head device
2. Upper clamping lifting device
3. Lower clamping pressure device
4. Intermediate pulley block
5. Sprinkler
6. Pressure maintaining oil tank
7. Rectangular drill pipe
8. Hydraulic power station
9. Electro-hydraulic control operating system
10. Walking or crawler pile frame
11. Background system

MODEL		ZDM55	
Maximum cutting depth	最大铣削深度	m	55
Maximum pressure	最大加压力	kN	250
Cutting thickness	铣削厚度	mm	700-1000
Maximum lifting force	最大提升力	kW	960
Torque	扭矩	kN·m	80
Speed	转速	rpm	28
Wall length	成槽长度	mm	2800

注：上表中钻杆长度为标配，客户可根据所需钻孔深度，选配增加钻杆长度。* 由于产品不断改善，上表中规格参数可能有所改进，恕不另行通知。

CUTTING AND MIXING DRILL RIG





VIBRATION COMPACTION PILE RIG

振动沉管碎石桩机

产品简介 PRODUCT BRIEF

振中机械所提供的振动沉管式碎石桩机，是全新制造、性能稳定、安全可靠的成套设备。且经过多年成功运行实践，证明其是成熟可靠并经有关鉴定的产品。振动式沉管碎石桩工法是一种地基处理方法。主要施工机械有免共振大偏心力矩振动锤、料斗、振动沉管及桩架组成的一套振动打桩机。

The vibratory sinking pipe gravel pile machine provided by Zhenzhong Machinery is a complete set of new manufacturing, stable performance, safe and reliable Equipment. After years of successful operation and practice, it has been proved that it is a mature and reliable product with relevant identification. The construction method of vibrating immersed gravel pile is a foundation treatment method. Main construction machinery has resonance free large eccentric moment vibration A set of vibratory pile driver composed of dynamic hammer, hopper, vibratory sinking pipe and pile frame.

FIVE CHARACTERISTICS 五大特点

■ 配套使用大偏心矩可调免共振振动锤，施工效率更高。即可以在机器运行过程中方便自如地调节偏心力矩，以适应不同的土层的沉拔桩要求，从而达到理想的沉拔桩速度和效率。

Equipped with large eccentric moment adjustable resonance free vibration hammer, the construction efficiency is higher. That is, the machine can be operated The eccentric moment can be easily adjusted in the process to meet the requirements of pile driving and pulling in different soil layers, so as to achieve ideal pile driving and pulling speed and efficiency.

■ 采用了先进的加气工艺，双气缸控制气门，具备快速放气功能，通气可加速下料，实现顺利出料，并提升拔桩速度。

Advanced gas filling technology is adopted, and the valve is controlled by two cylinders. It has the function of rapid gas bleeding, and the ventilation can be accelerated Blanking, achieving smooth discharging and improving the pile pulling speed.

■ 可以配套使用双滑道步履桩架，接地面积大，接地比压小，承载力高，小桩架实现大直径超深桩。

Double-slide walking pile frame can be used together, with large grounding area, small grounding specific pressure, high bearing capacity and small piles Large diameter and super-deep piles shall be constructed.

■ 双滑道步履桩架，前后滑道，中心受压，提高立柱承载力；且配备了双速浮动卷扬，载料提升可慢速，空料可快速，有效加快沉桩速度，提高功效。

Double slide walking pile frame, front and rear slide, center compression, improve column bearing capacity; And equipped with two-speed floating With dynamic winch, the load lifting can be slow, and the empty material can be fast, which can effectively speed up the pile sinking speed and improve the efficiency.

■ 配备施工计量管理系统，可显示桩架稳定性，随时检测，为设备安全和施工人员安全保驾护航。能实时检测打桩深度、电流、石料用量、垂直度及各种安全警报灯、报警电铃、数据信息并能打印成文件。

It is equipped with a construction measurement management system, which can display the stability of the pile frame and detect it at any time to ensure the safety and construction of the equipment Personnel safety escort. It can detect the pile driving depth, current, stone consumption, verticality and various The safety alarm light, alarm bell and data information can be printed into documents.

MAIN STRUCTURE

碎石桩机主要结构说明



沉桩管 SINKING TUBE 具备通气加压功能

- A、加压仓气密性高，加压快；
- B、双气缸控制气门；
- B、集成在驾驶室实现气源控制操作；
- C、具备快速放气功能；
- D、平衡土壤压力，实现气压开门；
- E、通气可加速下料，拔桩速度可以提升

- A. The pressurization chamber has high air tightness and fast pressurization;
- B. Double cylinder control valve;
- B. Integrated in the cab to realize air source control operation;
- C. It has the function of rapid deflation;
- D. Balance soil pressure and realize pneumatic door opening;
- E. Ventilation can accelerate the blanking and the pile pulling speed can be improved



桩尖 PILE BIT

- 1.出料开口可设计
- 2.桩尖直径可设计
- 3.控制方式/开门方式：自动
- 4.桩尖(阀门)：双活页/单活页

- 1. The discharge opening can be designed
- 2. Pile tip diameter can be designed
- 3. Control mode/door opening mode: automatic
- 4. Pile tip [valve]: double leaf/single leaf

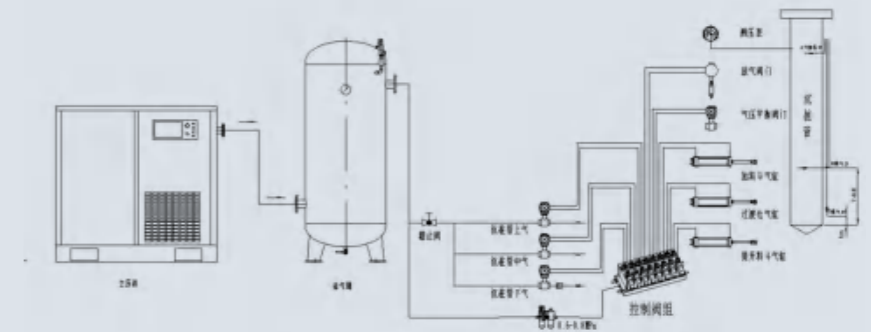


提升料斗 LIFTING HOPPER

采用正面提斗方式，提升采用三点/四点起吊、单绳起吊，采用滑轮、滑轨导向保证轨道通行顺畅

The front bucket lifting method is adopted, Three-point/four-point lifting and single-rope lifting are adopted for lifting, Use pulley and slide guide to ensure smooth track passage

PNEUMATIC CONTROL TECHNOLOGY 气控技术



通过空压机向桩管内通入高压气体，当桩管内的充气气压达到一定压力后，停止充气；随后启动振动锤，提升桩管；在提升的过程中，桩管的出料活门在气压和砂石料重力双重作用下，使得桩尖部分形成空隙形成压力平衡，气压和石料重量实现打开桩尖活门，使得淤泥无法压着活门，石料在气压和振动的作用下流入沉孔。

Inject high-pressure gas into the pile pipe through the air compressor. When the inflation pressure in the pile pipe reaches a certain pressure, stop inflation; Then start the vibratory hammer to lift the pile pipe; In the process of upgrading, Under the double action of air pressure and sand and stone gravity, the discharge valve of the pile pipe forms a gap at the pile tip to form a pressure balance, and the air pressure and stone weight can open the valve at the pile tip to make siltation. The mud cannot press the valve, and the stone flows into the sink hole under the action of air pressure and vibration.

CASE INTRODUCTION

案例介绍

我公司的振动式沉管碎石桩机曾多次与中字头企业进行过多维度合作。

多次参与海外基建，如越南修建海防-河内高速公路、

科威特进行加气复合地基处理施工、四航二公司东帝汶帝巴湾新集装箱码头工程项目（3套砂桩机）等。

Our company's vibratory sinking gravel pile machine has conducted multi-dimensional cooperation with Chinese enterprises for many times.

It has participated in overseas infrastructure construction for many times, such as Vietnam's construction of Haiphong-Hanoi Expressway

Kuwait carried out aerated composite foundation treatment construction The Fourth Harbor Second Company East Timor Diba Bay

New Container Terminal Project (3 sets of sand pile machines), etc



2022年振中机械9台碎石桩机设备参与了中交三航局承建施工的“舟山鼠浪湖岛铁矿石转运码头”项目，

该项目位于浙江省舟山鼠浪湖岛，是为国家大宗物资中转基地和战略物资储备基地项目。

项目采用了EP550B免共振偏心力矩可调振动锤和JZB270C碎石桩架，并采用了振动沉管碎石桩气压平衡工艺。

In 2022, 9 gravel pile machines from Zhenzhong Machinery participated in the construction of the Zhoushan Shulanghu

Island Iron Ore Transfer Terminal project undertaken by China Communications Third Navigation Bureau, using EP550B adjustable eccentric moment vibro hammers and JZB270C gravel pile frames.



OFFSHORE VIBRATION COMPACTION SAND PILE MACHINE

海上振动挤密砂桩机

产品简介 PRODUCT BRIEF

海上振动挤密砂桩机工法是一种地基处理方法。海上挤密砂桩（SCP）工法不同于陆上一般采用的砂桩，它的原理是在软基上用振动锤把套管沉入到要求的深度，填入中粗砂并向下挤压使得砂桩扩径，使其周围地基发生侧向挤压使地基密实的一种加固方法。

该振动式沉管碎石桩机经过多年成功运行实践，先后与中港第三航务工程局宁波分公司、中港第三航务工程局江苏分公司、中交第三航务工程局有限公司江苏分公司携手参与了上海洋山港一期和三期码头建设（共11台大偏心力矩免共振振动锤、3条砂桩船）、与中港第一航务局二公司参与山东烟台码头施工工作（共4台大偏心力矩免共振振动锤）等，并多次参与海外基建，证明其是成熟可靠并经有关鉴定的产品。主要施工机械有大偏心力矩可调免共振振动锤、料斗、振动沉管、气控装置及桩架等。

The offshore vibration compaction sand pile machine construction method is a foundation treatment method. The offshore compaction sand pile (SCP) construction method is different from the sand pile generally used on land. Its principle is to use a vibratory hammer to sink the casing to the required depth on the soft foundation, fill in medium-coarse sand and press downward to expand the diameter of the sand pile, so that the surrounding foundation will be squeezed laterally to make the foundation compact.

After years of successful operation and practice, the vibratory immersed gravel pile machine has successively participated in the construction of Shanghai Yangshan Port, Phase I and Phase III wharfs (a total of 11 large eccentric moment non-resonance vibrators and 3 sand pile ships) with the Ningbo Branch of the Third Harbor Engineering Bureau of China, the Jiangsu Branch of the Third Harbor Engineering Bureau of China, and the Jiangsu Branch of the Third Harbor Engineering Bureau of China Communications Participated in the construction of Yantai Port in Shandong Province with the Second Company of the First Harbor Administration of China (4 sets of large eccentric moment resonance free vibration hammers in total), and participated in overseas infrastructure construction for many times, proving that it is a mature and reliable product with relevant identification.

The main construction machinery includes large eccentric moment adjustable resonance free vibration hammer, hopper, vibration sinking pipe, pneumatic control device and pile frame, etc.



OFFSHORE MIXING PILE

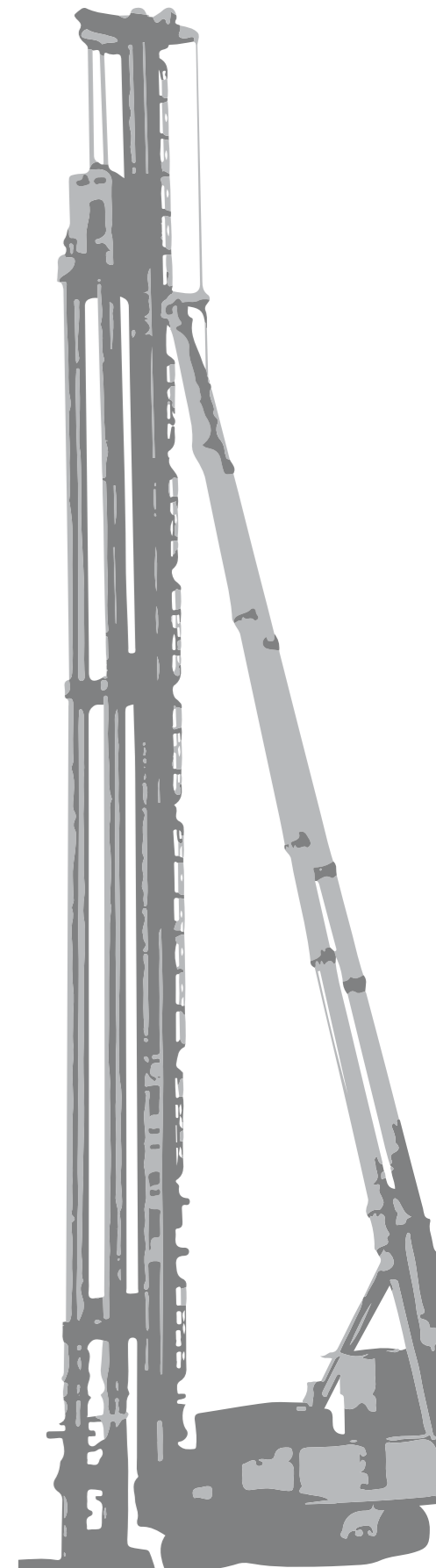
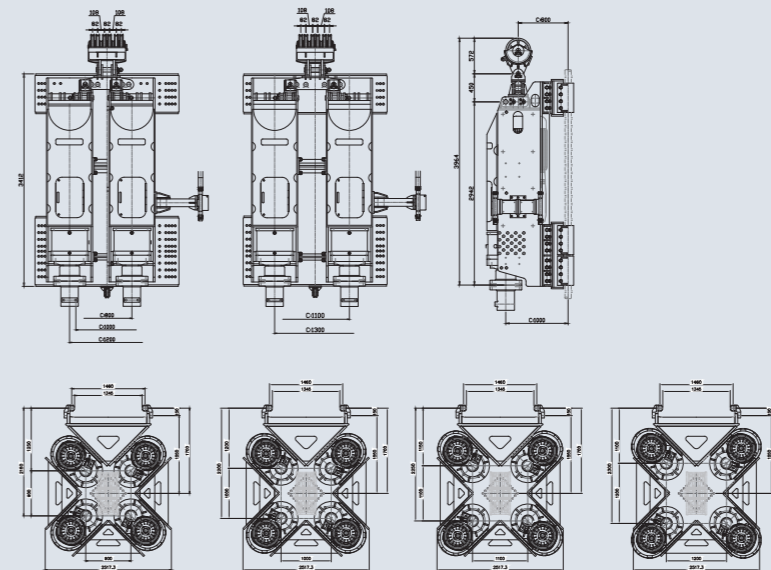
海上搅拌桩

产品简介 PRODUCT BRIEF

DCM工法四轴(二轴)钻孔机是我公司联合北京建筑机械化研究院从(株)韩国重机械引进的新型产品，该产品在韩国、日本、新加坡等东南亚国家已成功运用于海上和陆地基础施工。该设备技术先进，施工效率高，节能环保，特别适用于机场建设、地基加固与支护工程，在施工挡土与防渗墙工程中取得了显著成效。

DCM method for 4-axis [2-axis] auger is the machine from THE KOREA HEAVY MACHINERY CO.,LTD which is introduced by Zhejiang Zhenzhong Construction Machinery Co. Ltd. and Beijing Construction Machinery Research Institute. The products have been successfully in the marine and land use in southeast asian countries like South Korea, Japan, Singapore and so on.

And it has the character of advanced technology and equipment, high cost performance, energy saving and environmental protection. Especially in the airport construction, and foundation reinforcement and support structure. And it has achieved remarkable results in the construction of the retaining wall and the impervious wall project.





专业桩工品牌联盟

Professional Piling Enterprise Alliance

中国桩工陆英会，简称陆英会，于2016年12月在无锡成立，是由泰信机械、振中机械、盾安重工、格雷安环保、北京达夫、北京振冲六家企业联合发起的以客户信息共享、联合市场推广为宗旨的国内专业桩工公司联盟。

陆英会是为响应中国桩工机械行业协会秘书长黄志明、郭传新等领导“融合共享、抱团发展”的号召和鼓励，集合桩工行业各细分产品的领先企业而成立。首次参加2016上海宝马工程机械展会便取得了良好的效果和行业内的广泛关注。

目前12家会员企业分别是：小型旋挖钻机的领先品牌泰信机械公司、三十八年振动锤制造商振中机械公司、打造精品，为振冲人服务的北京振冲公司、泥浆及污泥处理设备专业制造商格雷安环保公司、旋挖钻具（钻斗，钻杆及套管系列产品）制造商北京达夫公司、旋挖钻机的钻具（钻斗）制造商无锡鑫良公司、旋挖钻齿制造商阳谷昊泉机械制造公司、20年地基机械制造及专业施工江西环球岩土科技公司、一站式复杂地质解决方案服务商京久基础公司、国内领先的旋挖钻机动力头专业制造商伏尔加桩工机械公司、挖掘机前端属具制造商宁波瑞基公司、高端柱塞泵和液压马达研发制造专家广东科达公司。

Alliance of Piling Industry Elites of China (APIE for short) was founded in Wuxi in December 2016. APIE was jointly initiated by six enterprises of Tysim Piling Equipment Company,Limited, Wenzhou Zhenzhong Foundation Construction Machinery Technology Co.,Ltd., Xuzhou DunAn Heavy Industry Machinery Manufacture Co., Ltd., Xuzhou Greenan Environmental Equipment Co.,Ltd., Beijing Tuff Equipment And Technology Co., Ltd., and Beijing

Vibroflotation Engineering Machinery Limited Company. At present, the APIE is a corporate alliance for professional pile works within China and focuses on customer information sharing and joint marketing.

The APIE was founded through gathering leading enterprises in segmentation products of pile works industry as a result of responding to encouragement and inspiration from "Fusion Shared and Unified Development" put forward by leaders such as Huang Zhiming and Guo Chuanxin etc. of Branch Association of Pile Works under China Construction Machinery Association. The APIE received good effects and wide attention from the industry when it participated in Bauma Shanghai 2016 for Construction Machinery for the first time.

The 12 members of APIE are as follow: Tysim Piling Equipment Co., Ltd-Leading brand of small and medium sized piling equipment,Zhenzhong Piling Equipment Co., Ltd-38 years of experience in Vibro hammer,Beijing Vibroflotation Engineering Machinery Co., Ltd-Outperform to serve the vibroflotation sector,Xuzhou Greenan Environmental Equipment Co.,Ltd-Professional Manufacturer for mud and sewage disposal equipment,Beijing Tuff Equipment And Technology Co., Ltd-Manufacturer of drilling tools for rotary drilling rigs (Drilling bucket, Kelly bar and Casing series),Wuxi XinLiang Mechanical Equipment Manufacturing Co. Ltd-Manufacturer of drilling tools for rotary drilling rigs (drilling bucket),Yanggu HaoQuan Rock Tools Co. Ltd -Manufacturer of Drilling teeth,JiangXi Global Geotechnical Technology Co. Ltd-20 years of experience in professional construction and Foundation machinery manufacturing,Wenzhou KingJiu Foundation Engineering Co., Ltd-One-stop Service provider for Complex geological solutions,Hunan Volga Piling Machinery Equipment Co. , Ltd-Leading manufacturer for rotary drilling rigs power Head,Auger Torque China Co., Ltd-Manufacturer for Excavator front-end attachments,Guangdong KEDA Hydraulic Technology Co., Ltd-High-end plunger pump and hydraulic motor R&D manufacturing specialist.

北京达夫-嵌岩捞砂斗 BJTUFF-Rock Drilling Bucket

切割直径 (mm) Cutting Dia	筒体高度 (mm) Shell HIT	筒体壁厚 (mm) Shell THK	齿数 Teeth No	重量 (kg) Weight
φ800	1200	16	9	950
φ1500	1200	20	16	2250
φ2500	800	20	27	5600

振中机械-JZB240多轴钻孔机 Zhenzhong piling equipment -JZB240 multi-shafts drill rig

桩架高度 (mm) Height of pile frame	立柱导轨中心距 (mm) Center distance of mast guide rail	最大拔桩力 (kN) Max. Pulling force	平台回转角度 (°) Swing angle of platform	桩架总质量 (t) Total weight of pile frame
42000	600/φ102	700	±10°	138

泰信机械-全液压式旋挖钻机 Tysim Piling Equipment-Rotary Drilling Rig

型号 Type	最大输出扭矩 (kN.m) Max.torque	最大钻孔直径 (mm) Max.drilling diameter	最大钻孔深度 (m) Max.drilling depth	主卷扬最大提升力 (kN) Main winch pull force
KR50A	50	1200	10/12/16/20/24	45
KR60A	60	1200	20	65
KR125A	125	1300/1500	43/37	110
KR220C	220	1800/2000	64/51	230
KR300ES低净空	320	2000	31.2	230

振冲机械-振冲器 BVEM-Vibroflot

型号 Type	功率 (kW) Power	额定电流 (A) Rated Current	最大转速 Max rotation speed	振动力 (kN) Vibration power
BJV75E-426	75	148	1450	180
BJV180E-426	180	350	1450	276
BJV260E-450	260	500	1450	520

格雷安环保-RMT250D泥浆净化装置 Greenan Environmental-RMT250D Desander

最大泥浆处理量 (m3/h) Max. capacity	装机总功率 (kW) Total power	主泵电机功率 (kW) Main pump motor power	振动电机功率(单台) (kW) Vibration motor power	设备运输尺寸(L×B×H) (m) Transportation dimension
250	58	55	1.5x2	4.16×2.29×2.52

无锡海锐特-桩工旋挖截齿 Highrate-Piling rotary cutter bits

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| 特点 1、合金：超粗颗粒低压烧结硬质合金；
2、耐磨层：超硬耐磨层 HRC:60-65
3、专利设计，加速齿体旋转，延长使用寿命；
4、高强度卡簧，坚固耐用不易脱落；
5、专利号：ZL 2010 2 0196489.1 | 1.carbide :coarse particle low pressure cemented carbide;
2.wearing layer:Superhard wear layer;
3.Patented Design,Accelerate tooth rotation,increase of service life;
4.High strength clamp spring,Strong and durable, not easy to fall off;
5.patent number:ZL 2010 2 0196489.1. |
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鑫良-旋挖钻头，截齿，护筒及全套管 Xinliang-Rotary drill bit, pick, casing and full casing

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| 特点 1、采用高强度管线钢，耐磨钢及其他特种材料；
2、钢材屈服强度在500-1200之间，抗扭能力强；
3、95%数控下料，精度高；
4、可以根据不同地层设计钻具，从而提高施工效率。 | 1.High-strength pipeline steel, wear-resistant steel and other special materials are used;
2.The yield strength of the steel is between 500-1200, and the torsion resistance is strong;
3.CNC makes 95% processing, achieving high precision;
4.Drilling tools can be designed according to different strata to improve construction efficiency. |
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环球岩土-专业地基全方位建设 Global Geotechnical-All-round professional foundation construction

名称：长螺旋式打桩机
 规格型号：JZL-III (45、60、90、120)
 可完成最大桩径1200mm
 可完成最大桩深36m

Name: CFG auger drill rig
 Specification: JZL-III (45、60、90、120)
 Max. drilling diameter:1200mm
 Max. drilling depth: 36m

桩工陆英会
 Alliance of Piling Industry Elites

