



TRD

链刀式地下连续墙成墙机

Trench Cutting Re-mixing Deep Wall Machine

CSM

双轮搅拌钻机

Cutter Soil Mixing Machine

徐州景安重工机械制造有限公司

Xuzhou JingAn Heavy Industry Manufacture Co.,Ltd.



Company Profile

企业简介

徐州景安重工机械制造有限公司，位于徐州经济技术开发区大庙街道，公司及前身成立于2010年7月1日，是一家专业从事特种桩工机械的研发、制造、销售、服务及帮助客户施工管理的高新技术企业。公司以创新为发展动力，突破发达国家技术、零部件封锁，坚持独立自主，成功制造出国内第一台全回转钻机并形成系列化，产品性能达到国际先进水平，是目前国内产量最大，技术实力最强的全回转钻机制造企业。

公司经过多年的工法推广及产品升级，产品先后在国内多个城市及重点工程得到应用，并出口东南亚、日本等多个国家和澳门、台湾等地区，为多个特殊环境、复杂地层的基础施工提供了环保安全的施工解决方案。公司先后获得“江苏省高新技术企业”、“江苏省民营科技企业”、“江苏省专精特新企业”等称号。

景安重工时刻关注市场需求，致力于研制适应市场需求的特种桩基施工设备，公司产品有JAR/JSP系列全全套管全回转钻机、JRD系列气举反循环钻机、TRD链刀式地下连续墙成墙机、CSM双轮深搅设备等地下施工装备，并可根据客户施工需求，量身定制专业施工设备，为安全、环保施工贡献企业的力量。

Xuzhou Jing'an Heavy Industry Machinery Manufacturing Co., Ltd., located in Damiao Street, Xuzhou Economic and Technological Development Zone, and its predecessor was founded on July 1, 2010, is a high-tech enterprise specializing in the research and development, manufacturing, sales, service and construction management of special piling machinery. Taking innovation as the driving force for development, the company has broken through the blockade of technology and parts in developed countries, adhered to independence, successfully manufactured and serialized the first full rotary drilling rig in China, and its product performance has reached the international advanced level. It is currently the largest full rotary drilling rig manufacturer in China with the strongest technical strength.

After years of construction method promotion and product upgrading, the company's products have been applied in many cities and key projects in China, and exported to Southeast Asia, Japan and other countries. After years of construction method promotion and product upgrading, the company's products have been applied in many cities and key projects in China, and exported to Southeast Asia, Japan and other countries

and Macao, Taiwan and other regions, providing environmental protection and safe construction solutions for the foundation construction of multiple special environments and complex strata. The company has successively won the titles of "Jiangsu High-tech Enterprise", "Jiangsu Private Science and Technology Enterprise", and "Jiangsu Specialized Special New Enterprise".

Jing'an Heavy Industry always pays attention to the market demand and is committed to developing special pile foundation construction equipment to meet the market demand. The company's products include JAR/JSP series full casing rotary drilling rig, JRD series air-lift reverse circulation drilling rig, TRD trench cutting re-mixing deep wall machine, CSM cutter soil mixing machine, and can customize professional construction equipment according to customers' construction needs to contribute to the safety and environmental protection construction.





TRD工法技术——工艺原理

- 1、原理：链刀式切割刀具垂直切削连续至设计深度后，横向推进并注入水泥浆液，形成连续、等厚、无缝的水泥土墙体；
- 2、在等厚度水泥土搅拌墙内插入芯材（H型钢等）形成复合挡土止水结构。

TRD工法技术——特点及范围

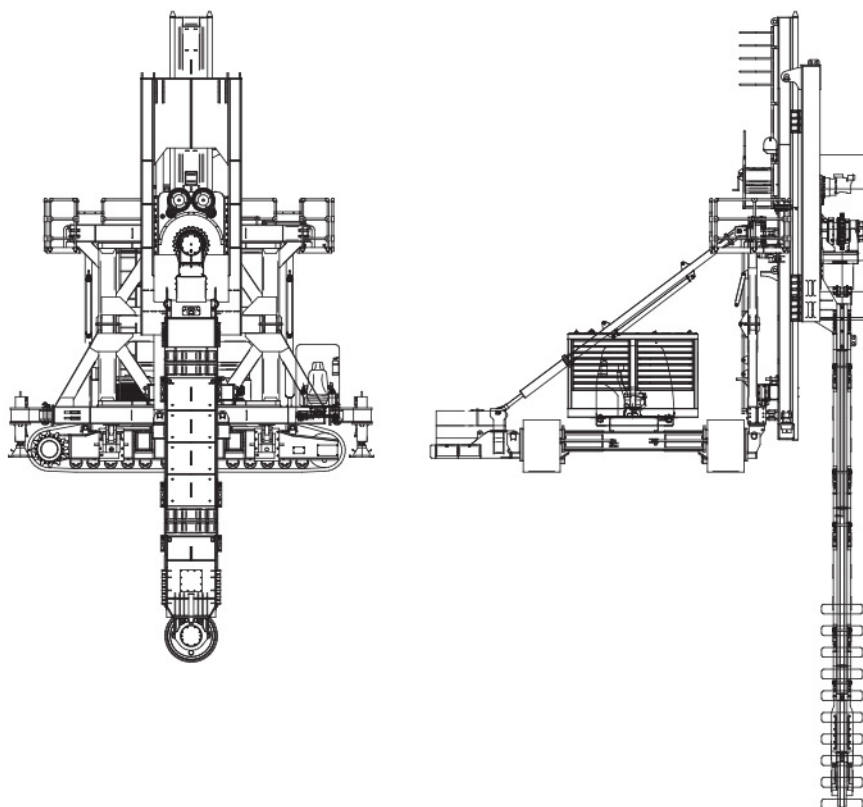
- 1、适用于粘性土、砂土、砂砾及砾石层，在30~60击标贯值的密实砂层以及饱和单轴抗压强度不超过10MPa的软岩中也具有良好的适用性；
- 2、成墙深度可达70m，垂直度偏差不大于1/250（作为地墙内、外侧槽壁加固时，TRD垂直度偏差要求不大于1/300）；
- 3、墙体厚度550~950mm；
- 4、水泥土搅拌均匀，无侧限抗压强度0.5~2.5MPa；
- 5、墙体隔水性能好，渗透系数在砂性土可达 $1 \times 10^{-6} \text{cm/s} \sim 10^{-7} \text{cm/s}$ ；
- 6、内插芯材间距可等间距均匀布置，围护体刚度更加均匀；
- 7、施工机械最大高度一般不超过12m，施工机架重心低、稳定性好。

TRD Method - Process Principle

- 1、Principle: After the chain-blade cutting tool is cut vertically and continuously to the design depth, it is pushed horizontally and injected with cement slurry to form a continuous, equal thickness and seamless cement wall ;
- 2、Insert core material (H-shaped steel, etc.) into the cement mixing wall of equal thickness to form a composite retaining and water stop structure.

TRD Method - Features and Scope

1. It is applicable to clay, sand, gravel and gravel layers, and also has good applicability in dense sand layer with 30-60 standard penetration value and soft rock with saturated uniaxial compressive strength not exceeding 10 MPa;
2. The depth of the finished wall can reach 70 meters, and the verticality deviation shall not be greater than 1/250 (when the TRD verticality deviation is not greater than 1/300 when it is used as the reinforcement of the inner and outer trench walls of the ground wall);
3. Wall thickness 550-950 mm
4. The cement is evenly mixed, and the unconfined compressive strength is 0.5-2.5MPa;
5. The wall has good water resistance, and the permeability coefficient can reach $1 \times 10^{-6} \text{ cm/s}$ to $1 \times 10^{-7} \text{ cm/s}$ in sandy soil;
6. The spacing of the interpolated profiles can be evenly arranged with equal spacing, and the rigidity of the enclosure is more uniform;
7. The maximum height of construction machinery is generally not more than 12 meters, and the center of gravity of construction frame is low, with good stability.



TRD主要技术参数:

部位 Part	项目	Project	单位Unit	TRD7095	TRD4585	备注 Remarks
主动力参数 Dynamic Parameters	发动机功率	Engine power	KW	418(1800rpm)	257(1850rpm)	标配 Standard
	电动机功率	Motor power	KW	90X3+6	90X2+55+6	380V,50HZ,选配 Configuration
	系统压力	System pressure	Mpa	34.3	34.3	
切削参数 Cutting Parameters	切削力	Cutting force	KN	355	355	
	标准切削深度	Standard cutting depth	m	70	45	
	切削宽度	Cutting width	mm	550--950	550--850	
	切削速度	Cutting speed	m/min	0--72	0--72	
	升降行程	Lifting stroke	mm	4550	4550	
	提升力	Lifting force	KN	2235	2235	
	横向行程	Lateral travel	mm	1200	1200	
	横向推/拉力	Transverse force	KN	1526	1180	
	斜撑油缸行程	Tilt cylinder stroke	mm	1000	1000	
	立柱左右倾斜角度	Column tilt angle	°	±5	±5	
门架前后倾斜角度	Gantry tilt angle	°	±6	±6		
整机参数 Machine Parameters	整机重量	Operating Weight	t	约120	约105	
	外形尺寸	Overall dimension	mm	10228X7336X10628	9058X7030X10500	



天津北辰，槽宽650，深度55米
Tianjin Beichen, Width 650m, Depth 55m



青岛地铁，槽宽900，深度45米
Qingdao Subway, Width 900m, Depth 45m



青岛地铁，槽宽900，深度45米
Qingdao Subway, Width 900m, Depth 45m

产品简介:

CSM工法 (Cutter Soil Mixing) 也叫双轮搅拌工法, 是一种将双轮铣技术应用于深层搅拌的、新的基础施工工艺。该工艺原理是通过转动双轮搅拌铣头, 对原状土壤进行充分搅拌, 并注入水泥浆, 从而构筑一道具有一定力学性能及防渗效果的墙体。

工法特点:

- 结合了液压铣槽机技术和深层搅拌技术, 可用于地基加固、地下连续墙、防渗墙施工;
- 该工法设备不仅能在淤泥、沙土、较软地层中施工, 还可满足卵石层、密实砂层、风化岩石层等复杂地质条件下施工;
- 根据不同需要, 插入工字钢, 作深开挖基础维护或止水之用。

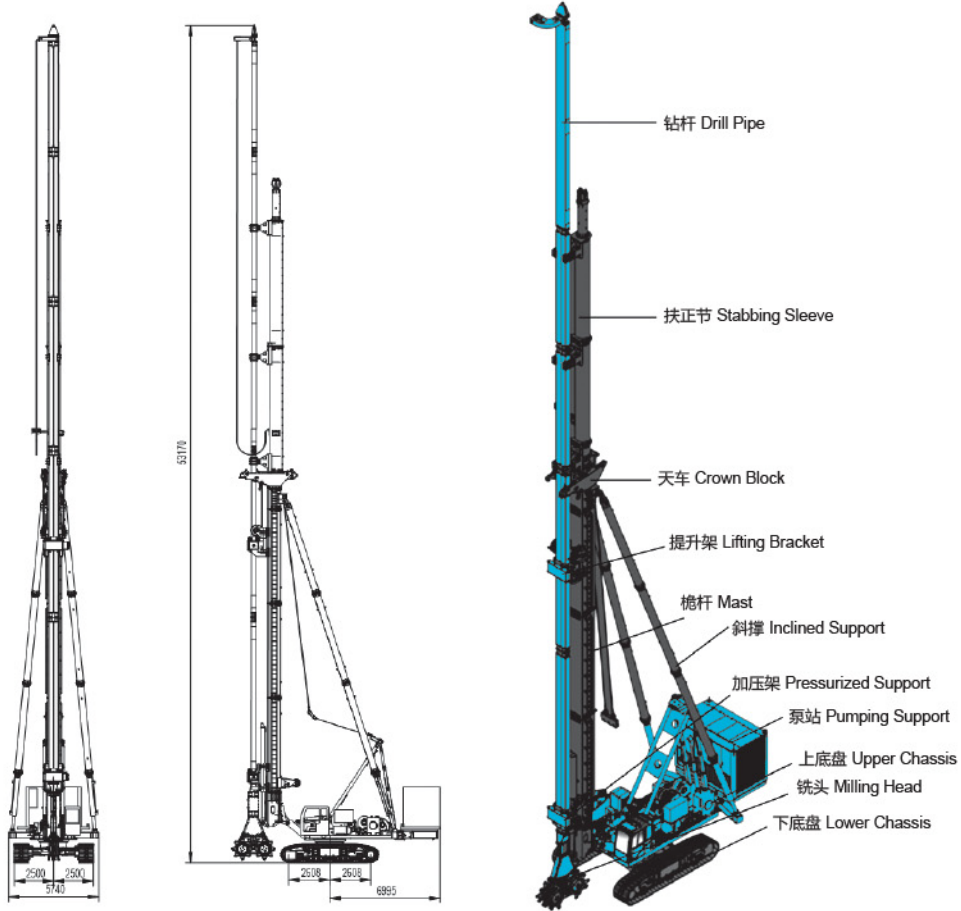
Product Introduction:

CSM construction method is a new foundation construction technology that applies double-wheel milling technology to deep mixing. The principle of this process is to fully mix the original soil and inject cement slurry by rotating the two-wheel mixing head, so as to build a wall with certain mechanical properties and anti-seepage effect.

Method - Features and Scope

- Combined with hydraulic groove-milling machine technology and deep mixing technology, it can be used for foundation reinforcement, underground continuous wall and anti-seepage wall construction;
- This construction method equipment can not only be used for construction in silt, sandy soil and relatively soft stratum, but also meet the construction under complex geological conditions such as pebble layer, dense sand layer and weathered rock layer;
- According to different needs, insert section steel for maintenance of deep excavation foundation or water stop.





CSM45主要技术参数:

名称	Name	单位Unit	型号Model
动力头	Power head		
铣削头型号	Model of milling head		JAM8
最大深度	Maximum depth	m	45
最小厚度	Minimum thickness	mm	700
扭矩	Torque	kN·m	80
旋转速度	Rotation speed	rpm	0~25
主机	Host		
功率	Power	kW	330+75
液压系统压力	Hydraulic system pressure	Mpa	34
回转角度	Swing angle	°	360
立柱	Column		
总长度	Total length	m	37.6
筒体直径	Cylinder diameter	mm	Ø720
拔桩力	Pile pulling force	kN	800
支撑方式	Support mode		三点支撑Three-Point

名称	Name	单位Unit	型号Model
主卷扬	Main winch		
单绳拉力	Max KN	kN	200
绳速	Rope speed	m/min	0~16
钢丝绳直径	Wire rope diameter	mm	26
副卷扬	Auxiliary winch		
单绳拉力	Max KN	kN	80
绳速	Rope speed	m/min	13
钢丝绳直径	Wire rope diameter	mm	20
底盘	Chassis		
履带宽度(扩展/缩回)	Track width	mm	5000/3500
履带板宽	Track shoe width	mm	900
离地间隙	Ground clearance	mm	450
接地比压	Ground pressure ratio	MPa	0.145



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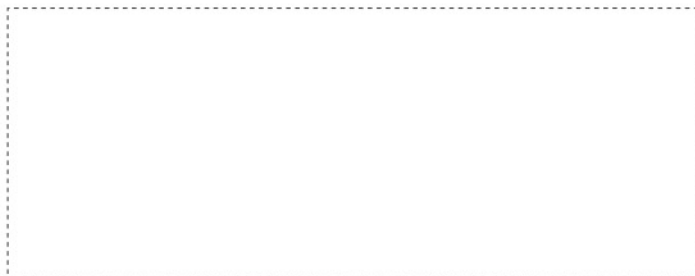


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