PVD Mast

HLS ENGINEERING

2025



PVD Mast manufacturer for Soil Improvement



Guangdong HLS Foundation Engineering Co., Ltd. is a professional manufactureris strive for supplying the solution for various kinds of Ground Improvement machine.

With the worldwide Airport Projects, Seaport Projects, Link Road Projects, Railway Projects, Real Estate Building Project, Dredging Projects, Power Plant Projects rapidly development. Vertical Wick Drain is popular applied in ground improvement projects. So that, PVD Mast will be widely applied in the above projects.

HLS can design the PVD Mast to encounter various kinds of soil condition.

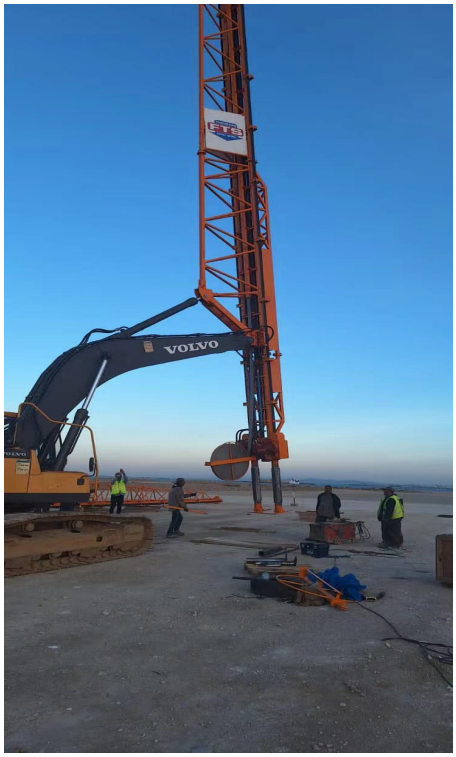




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CHAIN TYPE PVD Mast

♦Soil improvement using Vertical Wick Drain Mast can shorten the path of the pore water in the impermeable soil, accelerate the settlement and reduce the construction period of a project and avoid post-construction differential settlements.



♦ Performance

Trapezoidal Tear Strength (Index>100N)

High Discharge Capacity

High Grab Tear Strength

♦ Advantage

Max Depth to -55

Easy to lift up & down/ Continent to Operation

Available to install various kind of Excavators by design

High Efficiency Wick Drain Installation, High Driven Pressure

High Pressure Hydraulic Motor

Available install Jumbo Roll

Mast Detail	MPST-22	MPST-32	MPST-42	MPST-55
Material	Leader Steel Type: Q235 Mast Steel Type: Q345			
Mast system	Chain			
Max mandrel speed/second	1m-2m/Second			
Hydraulic motor model detail				
Motor model	STAFFA	STAFFA	STAFFA	STAFFA
Rated torque (Kgf. m)	470	975	975	975
Rated pressure (Mpa)	25	25	25	25
Maximum pressure (Mpa)	31.5	31.5	31.5	31.5
Option machine bracket height	<35 m	< 55m	< 55m	< 55m
Wick Drain Mast working speed(m/r)	0.72	0.72	0.72	0.72
Output force	10 Tons	12 Tons	12 Tons	12 Tons
Oil flow in Lit./Min	320 × 2 L/Min	>320 × 2 L/Min	>320 × 2 L/Min	>320 × 2 L/Min
Mandrel Detail				
Weight	78.6kg/pcs(3 meters /Section)			
Reel specification	Fit for 200m-300m/roll			
Production capacity of the Wick Drain Mast	10000m-15000m/8h			

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WINCH TYPE PVD MAST

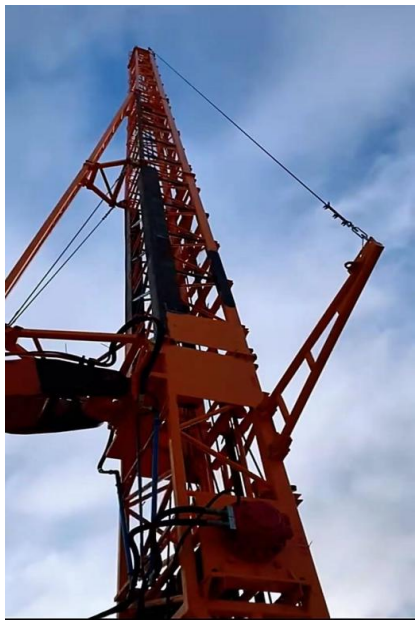
♦The Winch Type Vertical Wick Drain Mast is the advanced invention of our company, which replace the traditional mechanical use of the chain transmission.

This innovation product apply the principle of static friction force and winch, which solves the problems about the weight, difficulty on lifting, and also the selection of the excavator. It is available to fit in various of Excavator, which applied in various of soil condition

- ♦ Performance
- ♦ High Efficiency

  70 meters Max Design Depth （Winch Type）

  Encounter Various Kind of soil condition by design



Mast Detail	WTM-22	WTM-32	WM-42	WTM-55
Material	Leader Steel Type: Q235 Mast Steel Type: Q345			
Mast system	Multi-function integration transmission			
Max mandrel speed/second	1m-2m/Second			
Hydraulic motor model detail				
Motor model	STAFFA	STAFFA	STAFFA	STAFFA
Rated torque (Kgf. m)	470	975	1500	1500
Rated pressure (Mpa)	25	25	75	75
Maximum pressure (Mpa)	31.5	31.5	120	120
Option machine bracket height	< 70m			
Wick Drain Mast working speed(m/r)	1	1	1.2	1.5
Output force	15Tons	15Tons	20 Tons	20Tons
Oil flow in Lit./Min	320 × 2 L/Min	>320 × 2 L/Min	>1020 × 2 L/Min	>1020 × 2 L/Min
Mandrel Detail				
Weight	78.6kg/pcs(3 meters /Section)			
Reel specification	Fit for 200m-300m/roll			
Production capacity of the Wick Drain Mast	10000m-15000m/8h			
Option to install or not	Jumbo Roll （10 Rolls Wick Drain）			

VIRBO-HAMMER PVD Mast



- The Vibro-hammer PVD Mast is the Year 2020 new invention, which Is designed by famous Virbo-Hammer designer ---(John White) The Original Founder of the Antaeus. This kind of machine is included the **Dynamic and Static** force function, and have been updated the Installation speed and PVD Mechanical scissors for cutting.

- Performance

  High Efficiency

  70 meters Max Design Depth

  Encounter Various Kind of hard rock soil condition

  Available to design to fit in with various kind of Excavator



Item	VH 20	VH 40
Specification	Data	Data
Static (Crowd) Force	30T	30T
Dynamic Force	25T	58T
Combined Static/Dynamic Force	53T	85 T
Operating Frequency	1800vpm	1800vpm
Suspended Weight	4200 kg	5120 kg
Maximum Pressure	5500psi	5600 psi
Max Height	70 m	70m

Performance

♦ The Package-9 of N-8 highway improvement project in Bangladesh (Year 2018)

Project Background:

On May 29, 2017, CCECC successfully signed the package 9 of the N8 highway expansion project. The project was obtained through the negotiation of tenders and was the government 's own funds. The owner was the Bangladesh Army Engineering Office. The main project was the construction of a 466-meter-long prestressed T-beam bridge and related ancillary works. The duration is 16 months.

The N-8 highway is the main route from Dhaka, the capital of Bangladesh, to the southwestern region. It is the main national highway in Bangladesh and an important part of the Pan-Asian highway network in Bangladesh. The owner divided the N-8 highway expansion project into thirteen tenders, and CCECC is the only Chinese-funded contractor to obtain two tenders.

The implementation of the package-9 of the N-8 highway expansion project is of great significance for our company to in-depth understand Bangladesh infrastructure construction market, train the company's production and management team in Bangladesh, and build high-end operations and subsequent production, operation and development work.

Since the project team entered the site, it has faced many difficulties such as wide range of construction areas, high security risks, complex construction environment, harsh climatic conditions, and high pressure due to the construction period. The project team has always adhered to the "high-quality, efficient and safe" working principle, combined with the actual deployment of the project, and adopted a series of safeguards to effectively complete the construction node.

In this project, our company provides PVD Rig / PVD Stitcher equipment, ASTM high-performance wick drain, from product design, testing, production, packaging, shipping, land transportation, PVD Installation to provide customers with the best quality products and the most efficient service, completed the customer's construction tasks on time with quality and quantity guaranteed.

Treatment:

Construction: PVD Installation + Surcharge Preloading

Construction Time: 2017.11.2-2018.03.11

Project Status: Accepted





♦ Costa Rica Highway 32 Repair and Expansion Project (Year 2020)

Project Background:

On November 2nd and 27th, 2017, CCCC-SHEC Third Highway Engineering Co., Ltd received the Phase 1 and Phase 2 bid winning notices for the repair and expansion of Highway 32 in Costa Rica. The two bids were merged into the first branch manager department after a study and decision by the contractor of China Harbour Engineering Co., Ltd. The total contract value of the project is US$ 153 million (approximately RMB 1.02 billion, of which the contract value for the Phase 1 contract is US$ 84723813.92 and the contract value for the Phase 2 contract is US$ 68276186.08).

Costa Rica's Highway 32 is the main transportation route connecting its capital San Jose and the important port city of Limon. It has far-reaching significance for local politics and has a pulling effect on the local economy.

The project has a total length of 61.2km and passes through the three cities of Guapiles, Guacimo and Siquirres, with a contract period of 34 months. The project volume of non-woven wick drain is about 5,000,000 meters.

Treatment：

Construction Method：PVD Installation and Surcharge Preloading

Construction Time：In Supplying

Project Status：Under Construction





♦ Bangladesh Bodu Akali 1320MW Coal-fired Power Plant Project (Year 2020)

Project Background:

This project is located in Bodu Akali County, Barisal Zone, southern city of Bangladesh, 210 kilometers away from the capital Dhaka and 160 kilometers away from Chittagong. A 2 × 660MW ultra-supercritical coal-fired power generating unit will be built, and the expansion conditions for the second phase will be retained , Jointly invested and constructed by Northern International Cooperation Co., Ltd. and Bangladesh Rural Power Company.

The contract is a joint venture between Wanbao Company, China Huadian Science and Industry Group Co., Ltd., and China Huadian Engineering Co., Ltd and Tianjin Electric Power Construction Co., Ltd. and Bangladesh RNPL Company and signed on the basis of "The design, procurement, construction and trial operation of Bangladesh Bodu Akali 2X660MW coal-fired power plant turnkey project contract", the scope of the contract includes the overall turnkey project of the design, procurement, construction and trial operation of two 660MW ultra-supercritical coal-fired power plants and coal terminals, with an amount of USD 1,573,640,992 and 2,206,373.133 Taka.

The Bodu Akali project in Bangladesh is a major project with large scale, high standards and far-reaching impact. On the one hand, the project is one of the Pearl projects in the countries along the "Belt and Road", on the other hand, it is also a positive measure in response to the national "going out" strategy, which has significant domestic and international influence.





At present, the BTG area of the project is about 97,000 square meters, and the overload height is 7m. The construction technology of surcharge preloading + prefabricated vertical drain + drainage well is adopted. The model of wick drain is SPB-C type. The layout of wick drrain is temporarily considered as a square, with a spacing of 4 × 4 meters and a depth of 30 meters. The number of wick drain required in the BTG area is about 185,000m.

Treatment:

Construction Method: PVD Installation + Drainage Well + Surcharge Preloading

Construction Time: In Supplying

Project Status: Under Construction

♦ **Bagladesh Padma Bridge Rail Link Project（2019-2020)**





Project Background：

The Padma Bridge is the largest project under construction in Bangladesh. The total investment is about 4.4 billion US dollars (about 29.2 billion yuan). The funds are all from Bangladesh ’ s own funds; it is also the largest single bridge project undertaken overseas by Chinese companies; It is one of the important channels of the "Pan Asian Railway" connecting China and Southeast Asia, and plays an important role in deepening cooperation between China and South Asia and neighboringcountries.

The Padma River has always been a natural obstacle on the north-south logistics channel in Bangladesh. The river bed has soft geological sediments and poor bridge pile adhesion, which has caused great difficulties in bridge construction. As the contractor of the bridge, CREC has overcome this problem by using original technology.

The project has complicated geological conditions and difficult drilling. The geological conditions provided by the engineering design documents are: layer 1 is artificial fill, layer 2 is mainly soft clay in flow plastic ~ soft plastic and clay in hard plastic clay, layer 3 is silty sand. The vibration-type PVD machine selected in initial was extremely low in efficiency and difficult to drill. Afterwards, our 22m, 25m and 32m PVD machines were used, the efficiency was greatly improved.



Treatment：

Construction Method： PVD Installation + Surcharge

Preloading Construction Time： 2019.09.10 - now

Project Status： Under Construction



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