7*24-hour service covers the entire product life cycle

Quick response: 15-minute response
Quick arrival: 2-hour arrival (city outlets)
Quick supply: 24-hour supply of common accessories
Quick support: 24-hour technical solutions
Quick solution: 24-hour solution for general faults

Free guidance on product installation and commissioning
Free product technical training
Free on-site routine inspection service
Free product exclusive service
Free product program upgrade
Free product GPS terminal positioning and operation management Free solutions for key and difficult construction

HONG KONG TONG NIU TECHNOLOGY LIMITED

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TONG NIU

Full Casing Product and Drilling Tools

HONG KONG TONG NIU TECHNOLOGY LIMITED

TONG NIU TECHNOLOGY LIMITED

BRIEF INTRODUCTION

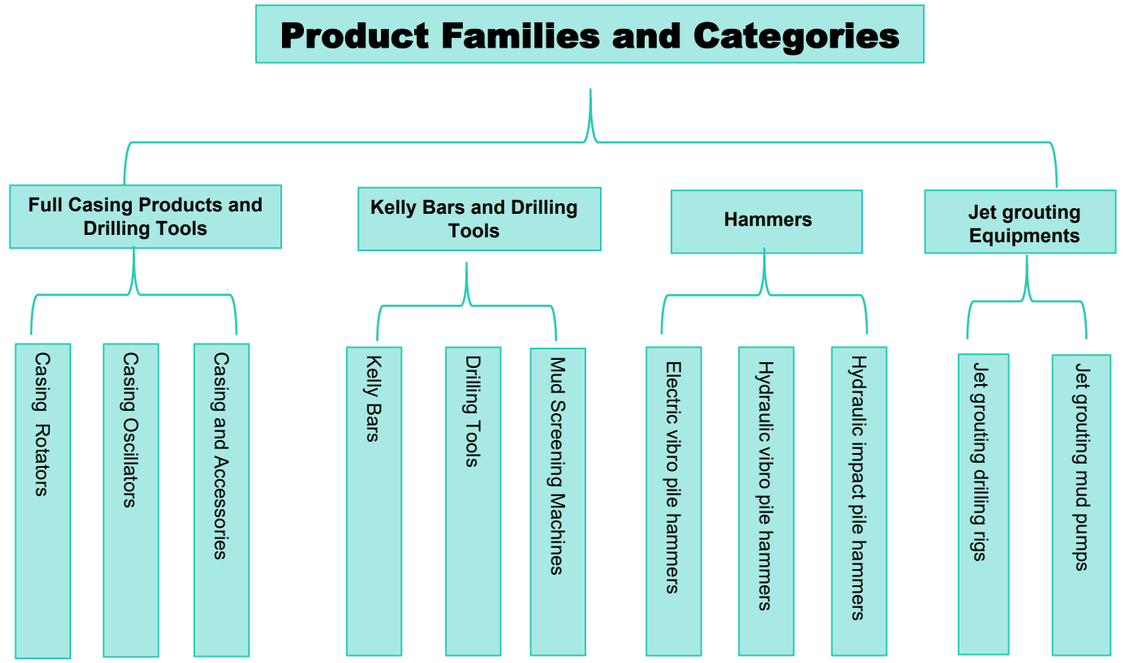
Hong Kong Tongniu Technology Limited, located in Hennessy Road, Wan Chai, Hong Kong， is a high-tech enterprise integrating the design, manufacturing, import and export of professional foundation construction machinery and equipment. TongNiu focuses on overall solutions for foundation construction and provides support for foundation construction methods.

As the provider of complete sets of equipment manufacturing and services for underground foundation construction, the products are mainly : casing oscillator, full-rotary full-casing drilling rigs, hydraulic percussion hammers, hydraulic vibro pile hammers, electric-driven vibro pile hammers, multi-functional pile frames and other foundation construction products. At the same time, TongNiu provides complete sets For sales services on accessories of rotary drilling rig , full-casing process and hammers, such as drill rods, drilling tools, cutter teeth consumables, casing drivers, steel casings, grab buckets, professional clamps, drilling rig accessories, etc., committed to becoming a leader in ecological services in the foundation construction machinery industry.

TongNiu owns a strong technical force based on a R&D team that has been engaged in basic construction machinery design and construction method for many years. Moreover, with an excellent marketing team and regional channel partners, TongNiu has a sound management plan for product market development and product after-sales service.The sales network and representative offices covers Southeast Asia, the Middle East, Europe, America and Russian-speaking regions.

Over the years, TongNiu has been adhering to the principle of "integrity, professionalism, prompt service, and win-win", insisting on the rule of“being customer-centered”, always putting customers' interests first, and whole heartedly providing the best products and the highest quality services to each of our customers.

TONG NIU MAIN PRODUCTS



FULL CASING PRODUCTS AND DRILLING TOOLS

TNRT SERIES CASING ROTATOR

Method of Casing Rotator

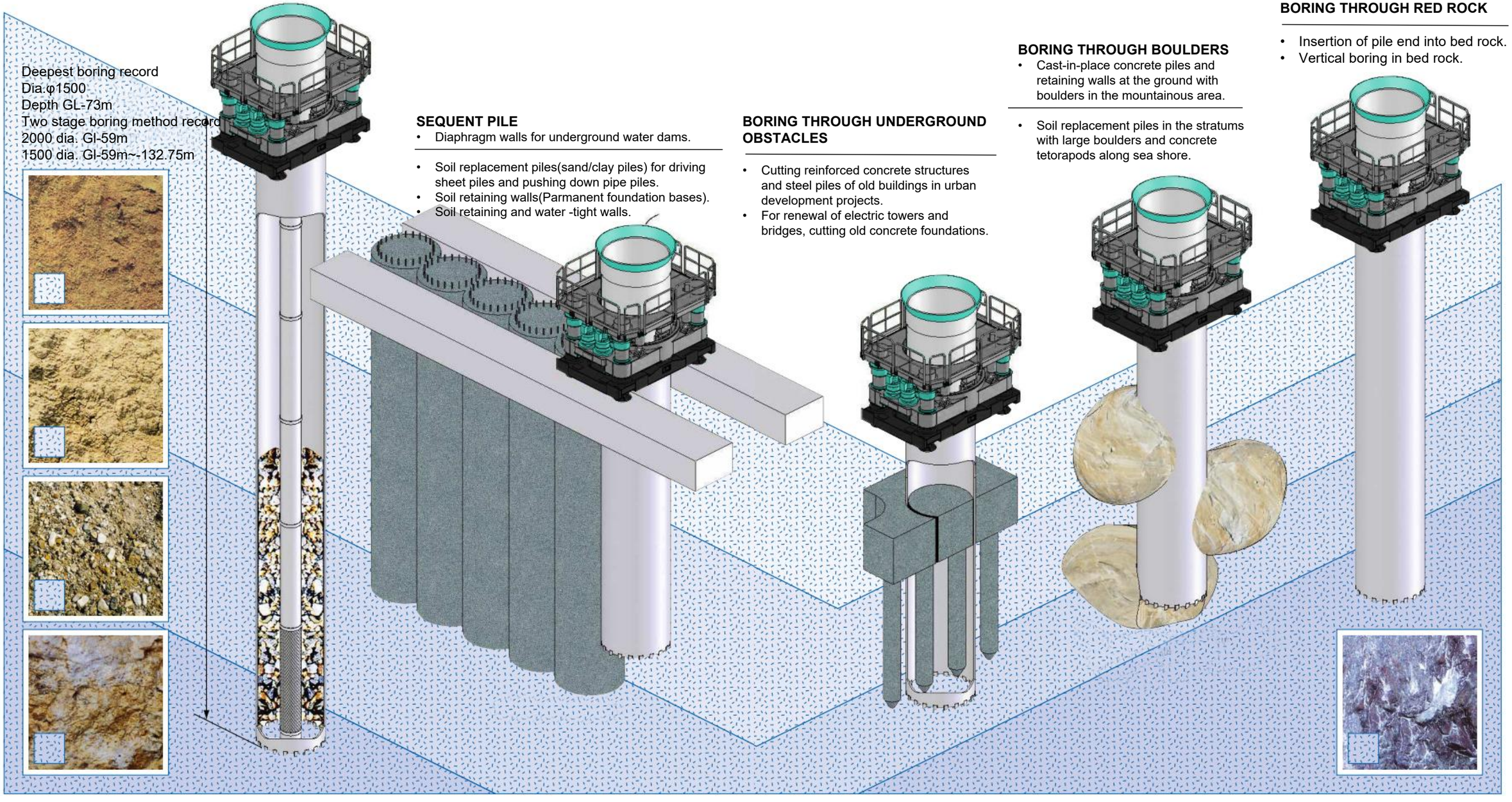
DREAM OF CIVIL ENGINEERS REALIZED

SUPERTOP foundation technique was developed to construct cast-in-place concrete pile, soil replacement pile, sequent pile and deep well with high efficiency and high vertical accuracy in the ground that was previously understood impossible to execute those works by the former oscillator, such as the stratum containing large boulders, reinforced concrete structure and steel piles.

ULTRADEEP BORAING

- Deep cast-in-place concrete piles and long steel piles pushing down into deep soil stablized layers at Tokyo Bay.

- Deep wells for underground water dams in tropical islands.
- Industrial deep wells
- Vertical boring in dam sites and ventilation holes of tunnels.



SEQUENT PILE

- Diaphragm walls for underground water dams.

- Soil replacement piles(sand/clay piles) for driving sheet piles and pushing down pipe piles.
- Soil retaining walls(Parmanent foundation bases).
- Soil retaining and water -tight walls.

BORING THROUGH UNDERGROUND OBSTACLES

- Cutting reinforced concrete structures and steel piles of old buildings in urban development projects.
- For renewal of electric towers and bridges, cutting old concrete foundations.

BORING THROUGH BOULDERS

- Cast-in-place concrete piles and retaining walls at the ground with boulders in the mountainous area.

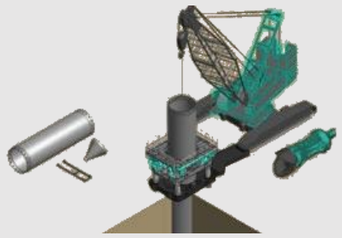
- Soil replacement piles in the stratums with large boulders and concrete tetorapods along sea shore.

BORING THROUGH RED ROCK

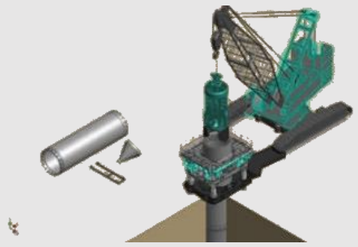
- Insertion of pile end into bed rock.
- Vertical boring in bed rock.

TNRT SERIES CASING ROTATOR

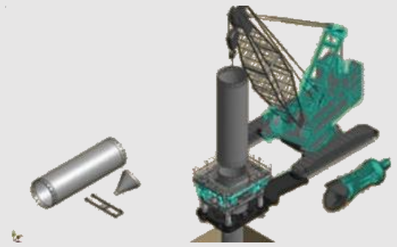
Construction Procedureof Casing Rotator



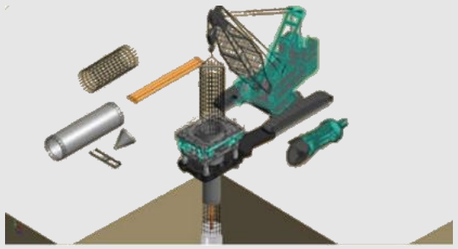
01 Install starter casing equipped with a cutting shoe. Add new casing section with bolted connection.



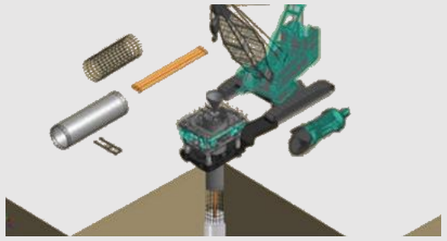
02 Excavate soil continuously during casing installation.Maintain water head inside casing to balance external hydrostatic head at all times.



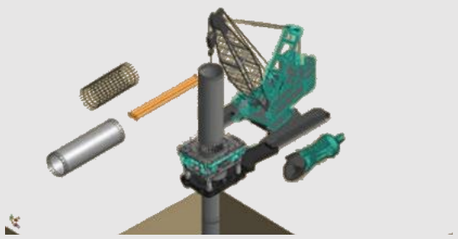
03 Add new casing sections until pile has been excavated to depth. Keep casing tip ahead of excavation at all times.



04 Install reinforcement cage and suspend at proper elevation.



05 Pour concrete using sectional tremie pipe. Maintain concrete head above casing tip at all times.



06 Remove casing and tremie pipe sections simultaneously as concrete is poured

Structure and Characteristics of Casing Rotator

Powerful

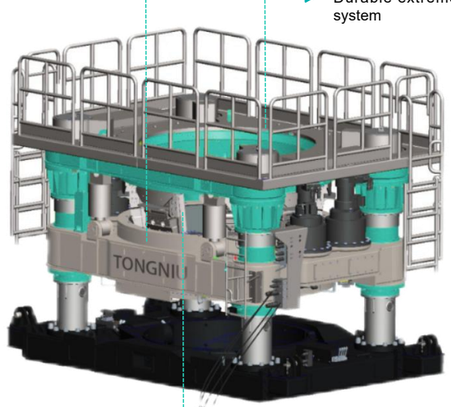
- Customized high-power engine;
- High-efficiency hydraulic components and transmission system;
- Highly compatible three modes: normal, high-efficiency and rock-penetrating.

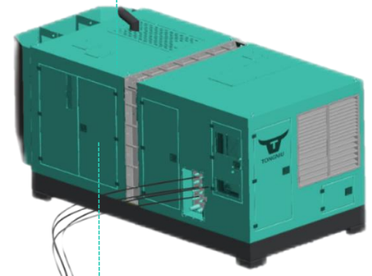
Reliable and Durable

- CAE-assisted design, key parts strength increased by 10%;
- Large-section box-type structure, 30,000 hours designed- life ;
- Durable extreme anti-shock hydraulic system

Economical and Energy-saving

- Optimized three-speed power curveof the engine to save fuel;
- Equipped with automatic idle mode and automatic idle shutdown mode





Working Device

Hydraulic power station

Maintenance Convenient

- Industrial simulation, reserved comfortable maintenance space;
- Fault code is displayed on the LCD screen, which is clear at a glance.

Safe and Secured

- Triple safety "redundant control" mode;
- New wedge-shaped main clamping system, no slipping during operation;
- Improved auxiliary clamping capacity, safer extubation operation

Hydraulic power station

Some models can be equipped with electric power station

1. **Cutter head load automatic control system**
When cutting hard rock, the cutter head can be well protected by the automatic control of the computer ,with cutting efficiency improved.

2. **Instantaneous enhancement system**
When encountering an obstacle, the pulling force and torque are instantly increased to remove the obstacle.

3. **Control system panel**
The control panel with a built-in microcomputer can adjust the speed, torque, and pressing force according to the working conditions, so that the machine is in the best working state, greatly improving the work efficiency.

4. **Emergency system**
The emergency module of the control system is set on the power station. When a fault occurs, the emergency system can be used to complete the construction work.

Working Device

1. **Wedge clamping device**
Compared with the traditional clamping mechanism, it can clamp the casing in any position and keep the casing at a high vertical accuracy. The greater the pulling force of the casing, the greater the clamping force.

2. **Motor reducer**
Multiple sets of motor reducers can provide sufficient torque to transmit strong rotational force to the casing, which can adapt to complex formations, cutting obstacles.

3. **Vertical device**
Hydraulic vertical device ensures the verticality of the drilling hole during construction, correcting the casing angle during construction at any time.

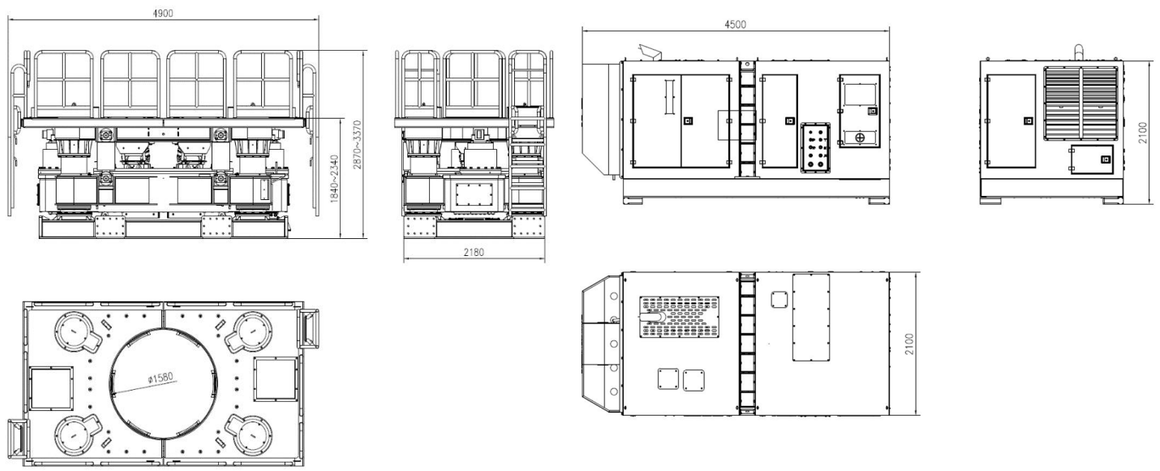
4. **Caliber change device**
The convenient caliber change method makes the equipment suitable for a variety of application needs..

5. **Auxiliary clamping device**
Can help ensure the verticality of the casing. At the same time, it can make up for the insufficient lifting capacity of the supporting crane during deep excavation operations.

TNRT SERIES CASING ROTATOR

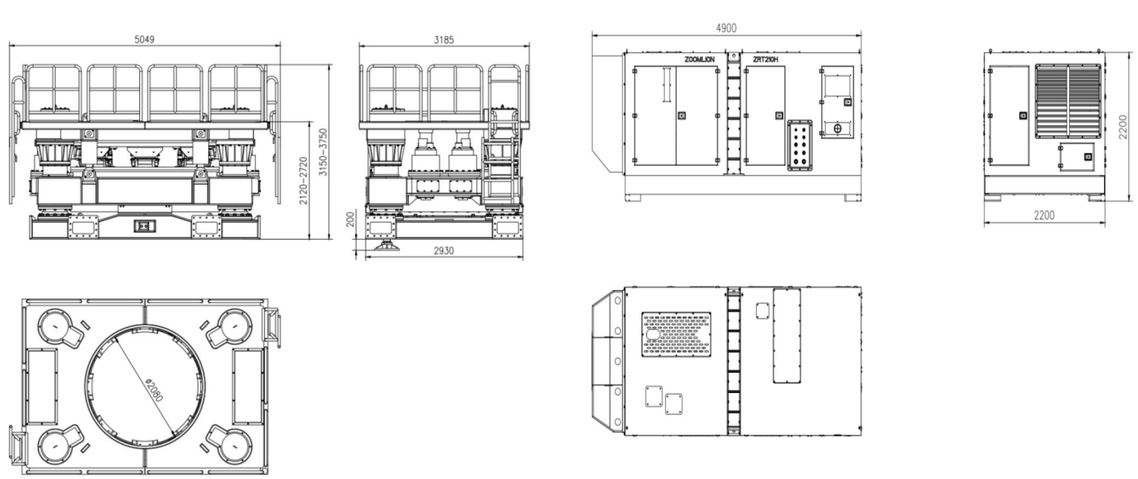
Main Parameters of TNRT Series Casing Rotator

CASING ROTATOR TNRT160G	
Drilling diameter	ϕ800~ϕ1600mm
Rotation torque	1530/910/515kN·m(instantaneous value: 1745 kN·m)
Slewing speed	1.3/2.2/3.9rpm
Push-down of casing	max. 380+180 kN=560KN
Pull-up of casing	2450kN(instantaneous value: 2690 kN)
Push-down and pull-up stroke	500mm
Capacity of auxiliary clamping system	/
Weight of working device	28000Kg
HYDRAULIC POWER PACK	
Engine model	Cummins QSC8.3
Engine power	197kW (2000r/min)
Engine fuel consumption	195g/kWh (at maximum power)
Maximum engine torque	1135N.m/(1300rpm)
Hydraulic system pressure	34 Mpa
Weight	6000kg
Control method	remote wired control



Casing Rotator TNRT SERIES Main Parameters

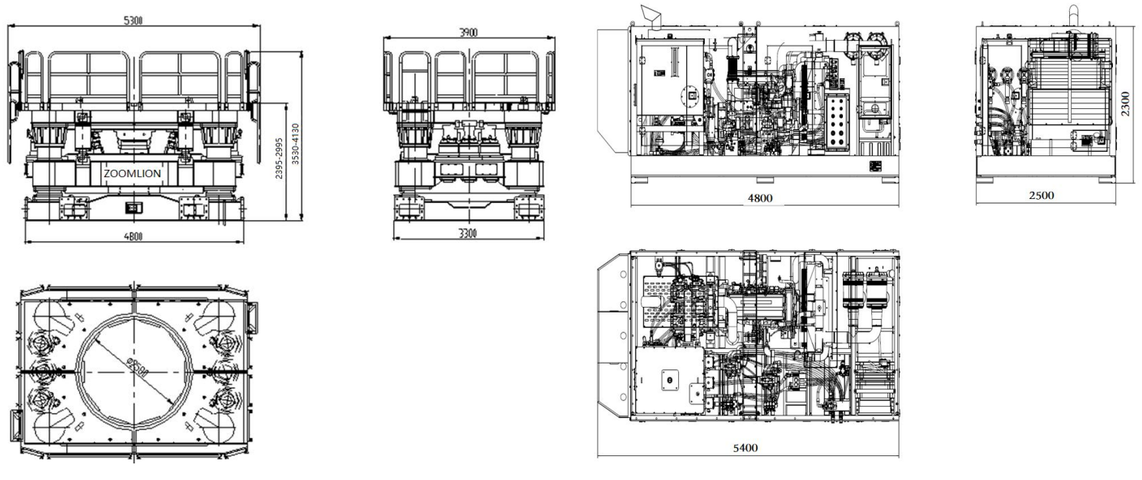
CASING ROTATOR TNRT210G	
Drilling diameter	ϕ1000~ϕ2100mm
Rotation torque	3100/1835/1035 kN·m (instantaneous value: 3525 kN·m)
Slewing speed	1.0/1.6/2.7rpm
Push-down of casing	max. 680+280 kN
Pull-up of casing	3760 kN (instantaneous value: 4300 kN)
Push-down and pull-up stroke	600 mm
Capacity of auxiliary clamping system	200t
Weight of working device	45000Kg
HYDRAULIC POWER PACK	
Engine model	Cummins QSM11-335
Engine power	274 kW (1800r/min)
Engine fuel consumption	216g/kWh (at maximum power)
Maximum engine torque	1674N.m/(1400rpm)
Hydraulic system pressure	30 Mpa (instantaneous value: 34Mpa)
Weight	8000kg
Control method	remote wired control



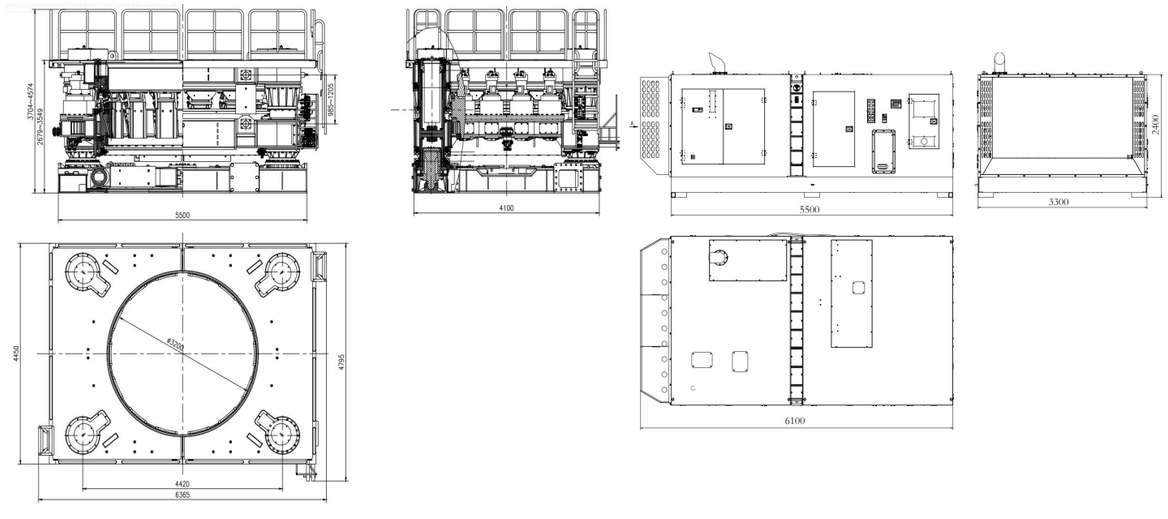
TNRT SERIES CASING ROTATOR

Main Parameters of TNRT Series Casing Rotator

CASING ROTATOR TNRT260G	
Drilling diameter	ϕ1500~ϕ2600mm
Rotation torque	5300/3150/1770 kN·m (instantaneous value: 6200 kN·m)
Slewing speed	0.6/1.0/1.8 rpm
Push-down of casing	max. 830 + 360 kN
Pull-up of casing	4600 kN (instantaneous value: 5200kN)
Push-down and pull-up stroke	750 mm
Capacity of auxiliary clamping system	200 t
Weight of working device	28000Kg
HYDRAULIC POWER PACK	
Engine model	Cummins QSX15-500
Engine power	398 kW (1800r/min)
Engine fuel consumption	217g/kWh (at maximum power)
Maximum engine torque	2363N.m/(1400rpm)
Hydraulic system pressure	30Mpa (instantaneous value: 34Mpa)
Weight	12000kg
Control method	remote wired control



CASING ROTATOR TNRT320G	
Drilling diameter	ϕ2200~ϕ3200 mm
Rotation torque	9100/5350/3050 kN·m (instantaneous value: 11000 kN·m)
Slewing speed	0.6/1.0/1.8 rpm
Push-down of casing	max. 1000 + 480 kN
Pull-up of casing	7250 kN (instantaneous value: 8350 kN)
Push-down and pull-up stroke	650 mm
Capacity of auxiliary clamping system	240 t
Weight of working device	85000Kg
HYDRAULIC POWER PACK	
Engine model	Caterpillar C18
Engine power	571 kW (1800r/min)
Engine fuel consumption	217g/kWh (at maximum power)
Maximum engine torque	2363N.m/(1400rpm)
Hydraulic system pressure	30Mpa (instantaneous value: 34Mpa)
Weight	15000kg
Control method	remote wired control



CASES OF
TNRT SERIES CASING ROTATOR

1. Cases of cast-in-place pile construction method:

TNRT series full casing rotator are suitable for bored pile construction in complex formations, including but not limited to strong shrinkage formations such as silt and quicksand, backfill formations, gravel layers and other collapse-prone shrinkage formations, karst landforms, boulders, underground water pressure, and projects with waste piles or concrete structures below the piles. It is also suitable for special construction scenes where mud wall protection is not allowed or close to existing buildings. The working surface is clean and tidy, and the construction is environmentally friendly and reliable.

1 2 3
4 5 6

1. Construction close to the high-speed rail line in Xuzhou
2. Construction within 3m of the subway in Nanjing
3. Housing construction project near Qing River in Yichang City
4. Sichuan Chenglan Railway 153m full casing construction
5. Liujiang Peisente Bridge Project
6. Shenyang Changqing Street Expressway Project

2.Cases of interlocking pile construction method:

TNRT series full casing rotator used for interlocking pile construction is suitable for engineering fields, including subway stations, underground smart garages, underground building structures, reservoir reinforcement retaining walls, urban sewage storage tanks, etc. During construction, the concrete pile wall formed by the interlocking of adjacent concrete piles in the plane position (the circumference of the pile parts is embedded) is a retaining structure with good water seepage prevention and blocking of external sand and soil.

1 2
3 4

1. Fuzhou Fengting Street Underground Intelligent Parking Lot Project and Excavation Results
2. Taiyuan Sports Center Project and Excavation Results
3. Nanjing Qinhuai District shield tunneling starting shaft project and excavation results
4. Hefei First People's Hospital project and excavation results

3. Cases of Pile removal and obstacle removal construction method:

The TNRT series full casing rotator used for pile removal construction method is mainly used in the construction of old urban area reconstruction, municipal construction, subway tunnels, bridge reconstruction and other related projects, where old concrete structures and abandoned pile foundations are encountered underground, or new foundation piles are poured after the old piles are removed. The construction process is simple and reliable, with low noise and vibration, which reduces the disturbance to the surrounding soil and can be constructed close to existing buildings. Abandoned engineering foundation piles, bridge piles, underground reinforced concrete

1 2 3
4 5 6

1. Shanghai Lingang District Obstacle Removal Project
2. Nantong Bridge Reconstruction and Pile Removal Project
3. Ningbo Housing Project Pile Removal and Obstacle Removal Project
4. Nanjing Metro Line Obstacle Removal Project
5. Hangzhou Logistics Park Obstacle Removal Project
6. Nanjing Expressway Pile Replacement Project

4.Cases of Reverse construction method of steel column implantation:

The TNRT series full casing rator used for steel column implantation construction is mainly suitable for reverse construction in cover-excavation construction. It is particularly suitable for large-scale underground engineering construction in urban bustling areas, deep excavation, weak strata, and low foundation bearing capacity. During construction, the straightening function of the drilling rig is relied on to ensure that the vertical accuracy of the steel column is controlled within 2‰; at the same time, the clamping and pressing and pulling functions of the drilling rig are relied on to ensure the elevation and center point control of the steel column. Reverse construction of large-scale underground projects is conducive to the rapid restoration of road traffic, reducing foundation pit rebound, and improving construction safety.

1 2 3
4 5 6

1. Nanjing People's Court steel column insertion construction
2. Guangzhou Zengcheng Railway Station Project
3. Beijing Metro Line 14 Pingleyuan Station Project
4. Taiyuan Metro Line 1 Xiayuan Station Project
5. Changsha Metro Line 6 Yaoling Station Project
6. Shijiazhuang Metro Line 13 People's Square Station Project

TNM SERIES CASING OSCILLATORS

Method of TNM Series Casing Oscillators

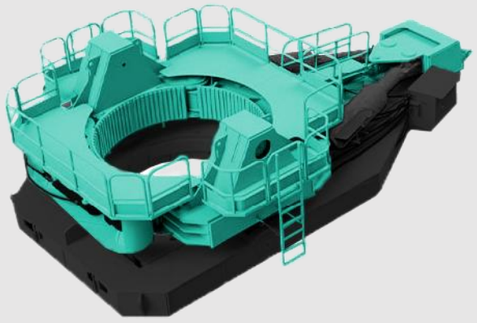
Cased Drilled Shafts are required when ground conditions are so unstable that drilled holes can not safely be stabilized with drilling slurry or where lose of ground must be controlled. Casing can be temporary or permanent steel pipe which provides a 100% stable excavation for the full length of the drilled shaft. The Casing Oscillator method provides a superior method for drilled shaft construction with high quality ensuring an uninterrupted construction schedule through the elimination of anomalies. This technology is the only proven method to drill large diameter shafts in caving conditions, such as loose sands and gravelly soil with cobbles and boulders. Boulders several feet in diameter can be removed safely by the use of Hammer Grab without major interruption to the excavation process. Since only water is used for drilling, environmental concerns are minimized or totally eliminated.

TNM SERIES CASING OSCILLATORS

Casing Oscillators for Rotary Drilling Rig & Crawler Crane

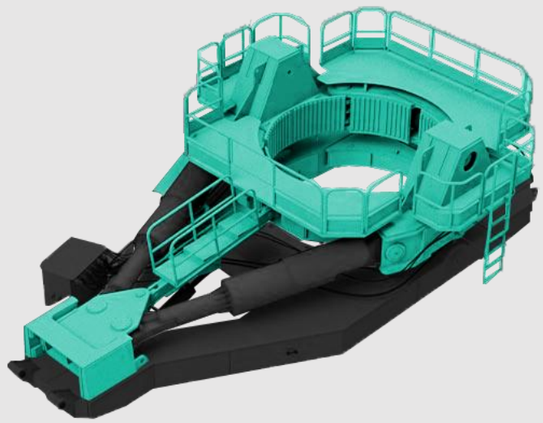
TNM series casing oscillator is an environment-friendly pile construction product that integrates full hydraulic power transmission and electromechanical hydraulic control, with the characteristics of high construction safety, strong power, strong adaptability to working conditions, low construction cost, convenience and high efficiency,etc..

According to the different construction methods, it can be divided into two categories:



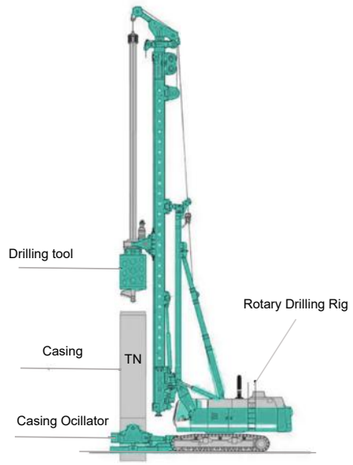
TNM-L series is a new set of complete pipe pile construction products working with rotary drilling rigs: The overall structure is safe and reliable, and the equipment can be driven by the power source of the rotary drilling rig, reducing the configuration of individual power units.

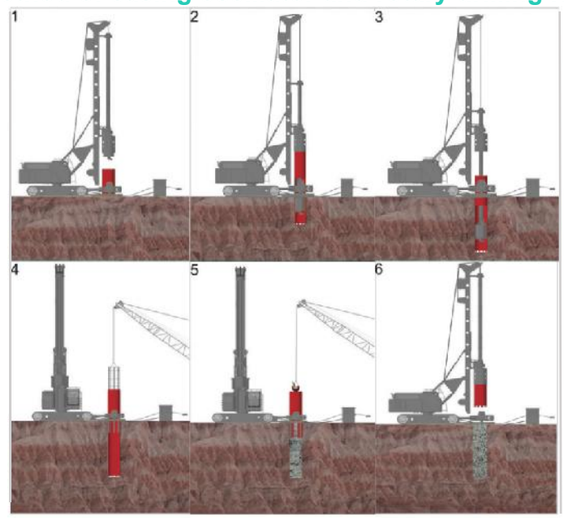
TNM-H series is a complete set of pipe pile construction products for use with impact grab crawler cranes: the whole machine is powerful, equipped with a Cummins engine and an efficient hydraulic system, and can be applied to more complex working conditions.



Construction Procedure of TNM Series Casing Oscillator

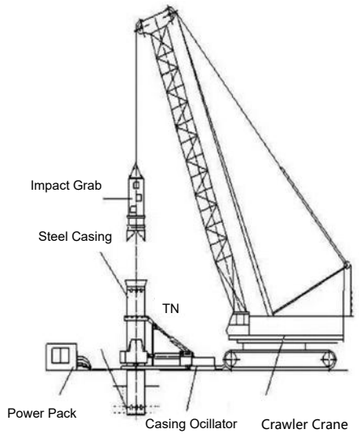
Introduction to the joint construction method of casing oscillator and rotary drilling rig of TNM-L:

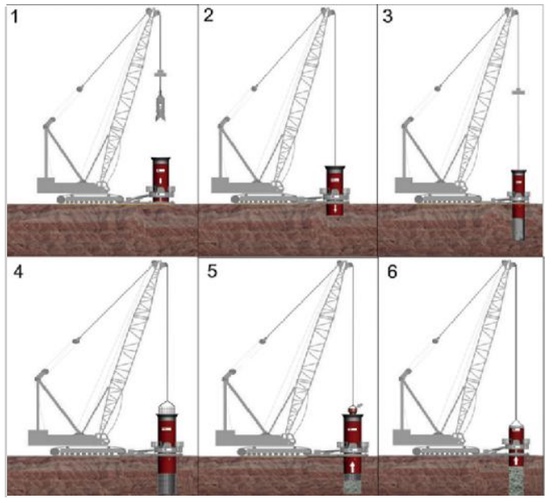




Step 1: Assemble and debug the casing oscillator and the rotary drilling rig, and install the first section of steel casing with alloy cutting teeth at the bottom;
Step 2: Adopt the rotary drilling rig to drive the casing down or adopt the casing oscillator to drive the casing down, and start the process of taking soil from the casing of the rotary drilling rig at the same time;
Step 3: Repeat the process of connecting and lowering the casing and taking soil from the rotary drilling rig until the hole is drilled to the designed depth;
Step 4: After the hole is tested and qualified, lower and install the steel cage;
Step 5: Install the underwater concrete pouring guide tube and start pouring concrete;
Step 6: Pull out the casing while pouring until the concrete pouring height meets the design requirements, all the casings are pulled out, and the pile foundation construction is completed.

Introduction to the joint construction method of casing oscillator and crawler crane of TNM-H:





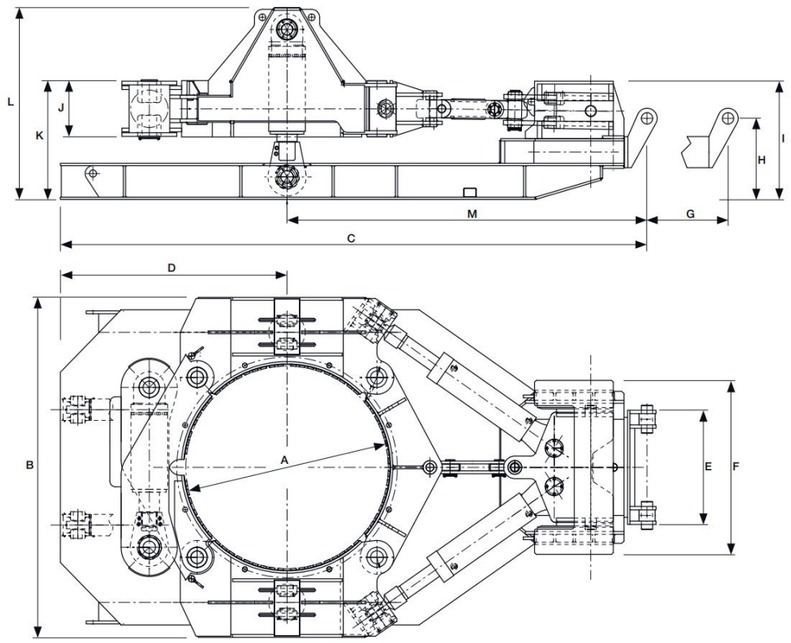
Step 1: Assemble and debug the casing oscillator and crawler crane, and install the first section of steel casing with alloy cutting teeth at the bottom;
Step 2: The casing oscillator drives the casing to swing and lower, and the crawler crane starts to grab soil at the same time;
Step 3: Repeat the process of connecting and lowering the casing and grabbing soil by the crane until the hole is drilled to the designed depth;
Step 4: After the hole is tested and qualified, the steel cage is lowered and installed;
Step 5: Install the underwater concrete pouring guide tube and start pouring concrete;
Step 6: Pull out the casing while pouring until the concrete pouring height meets the design requirements, and all the casing is pulled out to complete the pile foundation construction.

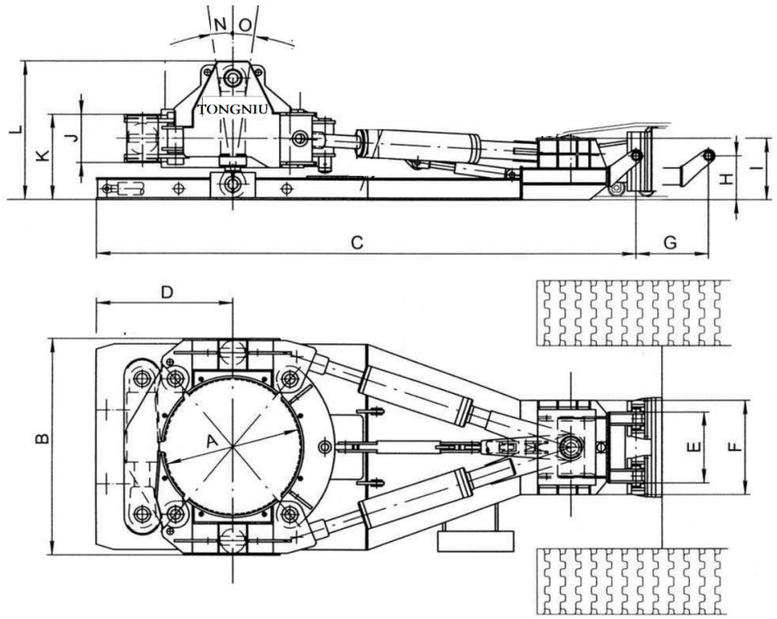
TNM SERIES CASING OSCILLATORS

Method of TNM Series Casing Oscillators

TNM-L series Technical Specifications				
Model	TNM120L	TNM150L	TNM180L	TNM200L
Casing Diam.（mm）	ϕ600~ϕ1200	ϕ800~ϕ1500	ϕ1000~ϕ1800	ϕ1200~ϕ2000
Max.Torque（kN·m）	1200	1900	2560	2860
Lifting Force（kN）	1560	1880	2280	2280
Lifting Stroke（mm）	450	450	450	450
Clamping Force（kN）	1500	2100	2100	2250
Outline Dimension（mm） Length×Width×Height	4200×2400×1700	4280×2500×1750	5200×2900×1750	4860×3100×1750
Weight（Kg）	16000	18000	21000	22000

TNM-H Series Technical Specifications					
Model	TNM200H	TNM250H	TNM300H	TNM330H	TNM400H
Casing Diam.（mm）	Max. ϕ2000	Max.ϕ2500	Max.ϕ3000	Max.ϕ3300	Max. ϕ4000
Max.Torque（kN·m）	4320	9500	13500	16600	28000
Lifting Force（kN）	3140	5150	7250	10200	13300
Lifting Stroke（mm）	550	600	650	650	550
Clamping Force（kN）	2570	3780	4780	6300	6700
Rotation (degree)	24	22	22	24	24
Outline Dimension（mm） Length×Width×Height	7860×3520×1980	8895×4000×2360	9900×4500×2600	10765×5100×2800	13080×6166×3063
Weight（Kg）	38500	48000	57000	57000	1000000



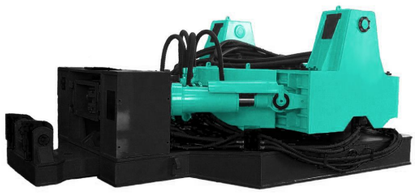


TYPE	A	B	C	D	E	F	G	H	I	J	K	L	M
TNM120L	1200	2050	3270	1000	800	1000	400	630	1000	400	810	1485	2270
TNM150L	1500	2500	4070	1420	800	1250	450	630	1100	500	1020	1600	2800
TNM180L	1800	3020	5300	2015	800	1350	450	630	1050	500	1050	1705	3200
TNM200L	2000	3220	5560	800	800	1400	450	630	1050	500	1050	1685	3545

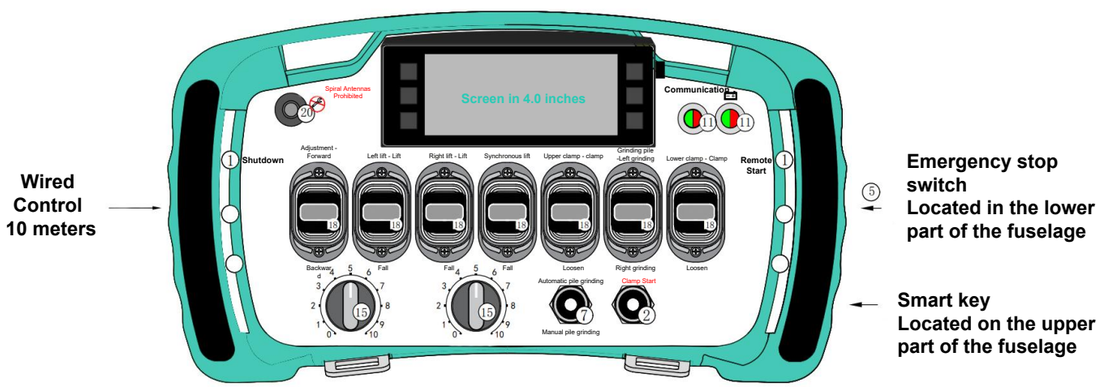
TYPE	A	B	C	D	E	F	G	H	I	J	K	L	N	O
TNM200H	2000	3200	7860	1875	1195	1400	/	700	1057	800	1300	1980	6	8
TNM250H	2500	400	8800	2230	1015	1500	/	700	1130	700	1400	2050	/	/
TNM300H	3000	4500	9810	2600	1015	1650	/	700	1165	900	1500	2605	/	/
TNM330H	3300	5100	10765	2950	1014	1600	/	700	1265	800	1620	2730	/	/
TNM400H	4000	6166	12740	3210	1880	2240	/	740	1688	1100	1858	2678	/	/

TNM SERIES CASING OSCILLATORS

PowerPack of TNM Series Casing Oscillators



Power Station				
Model	TYPE1	TYPE2	TYPE3	TYPE4
Engine Type	CumminsQSC8.3	CumminsQSC11-335	CumminsX15-CS4	Cat C18
Engine power （KW）	197	273	373	571
RPM （rpm）	1700	1700	1700	1700
Max. oil flow of main hydraulic pumps (L/min)	780	1020	1360	2040
Operation Pressure （Bar）	320	320	320	320
Oil tank (Liter)	800	1000	1800	1500
Fuel tank (Liter)	430	430	430	1000
Dimension L×W×H	4500×2100×2343	4800×2100×2343	5400×2519×2700	6100×3300×2835
Unit weight (Kg)	6000	8000	10000	12000
Aplication	TNM180L\TNM200L \TNM200H	TNM250H\ TNM300H	TNM300H\ TNM330H	TNM400H



CASES OF TNM SERIES CASING OSCILLATORS

1. Cases of cast-in-place pile construction method:

TNRT series full casing rotator are suitable for bored pile construction in complex formations, including but not limited to strong shrinkage formations such as silt and quicksand, backfill formations, gravel layers and other collapse-prone shrinkage formations, karst landforms, boulders, underground water pressure, and projects with waste piles or concrete structures below the piles. It is also suitable for special construction scenes where mud wall protection is not allowed or close to existing buildings. The working surface is clean and tidy, and the construction is environmentally friendly and reliable.

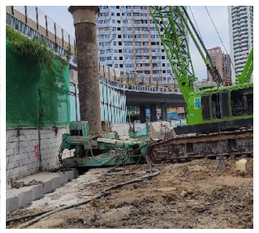
TNM-L series

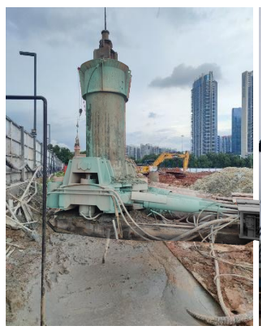
1	3
2	4
	5

1. First appearance at American exhibition
2. Kunming Iron and Steel Relocation Project Construction
3. Construction in Vladivostok, Russia
4. Heyuan High-tech Zone Housing Construction
5. Beijing Subway Line 6 Construction
6. Shenzhen Baoan Avenue Construction

2. Cases of interlocking pile construction method:

TNRT series full casing rotator used for interlocking pile construction is suitable for engineering fields, including subway stations, underground smart garages, underground building structures, reservoir reinforcement retaining walls, urban sewage storage tanks, etc. During construction, the concrete pile wall formed by the interlocking of adjacent concrete piles in the plane position (the circumference of the pile parts is embedded) is a retaining structure with good water seepage prevention and blocking of external sand and soil.





TNM-H series

1	2	3
4	5	6

1. Fuzhou Fengting Street Interlocking Pile Project
Haikou Jinmao East Road Project
The world's largest 4.0m diameter casing oscillator
Shenzhen Library Occlusal Pile Project
Wutong Bridge Project in Leshan, Sichuan
Hefei Langxi Road Reconstruction Project

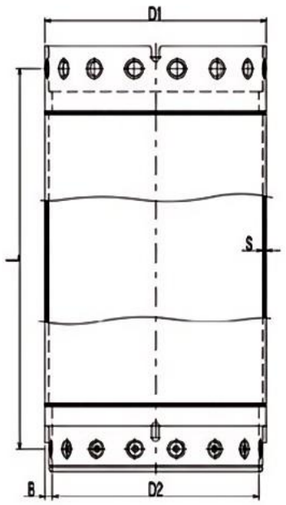
CASING OF CASING ROTATORS

Casing

Casing

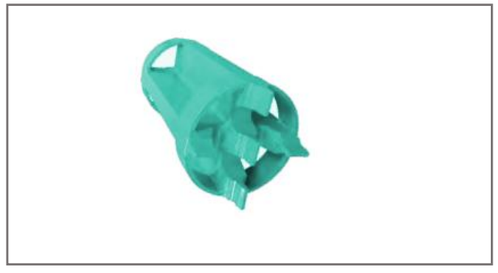
Casing

Casing Shoes



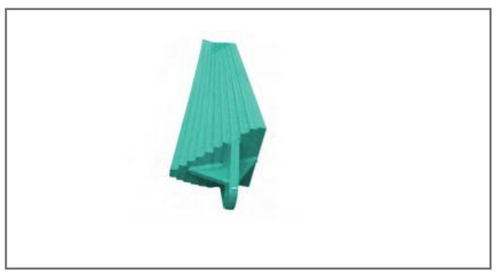
Single Wall Casing									
D1/D2	S	B	Weight(kg) per Working Length(L)						
(mm)			1m	2m	3m	4m	5m	6m	5m
600/520	20	40	380	672	993	1,255	1,546	1,838	2,421
700/620	20	40	447	789	1,131	1,473	1,815	2,157	2,841
800/720	20	40	514	906	1,298	1,690	2,082	2,474	3,258
900/820	20	40	580	1,022	1,464	1,906	2,348	2,790	3,674
1000/920	20	40	640	1,133	1,626	2,119	2,612	3,150	4,091
1,080/1,000	20	40	690	1,190	1,720	2,260	2,820	3,350	4,420
1,200/1,120	25	40	860	1,600	2,340	3,080	3,820	4,560	6,030
1,500/1,400	25	50	1,440	2,370	3,300	4,230	5,160	6,090	7,950
1,800/1,700	25	50	1,720	2,830	3,950	5,070	6,190	7,310	9,550
1,800/1,680	25	60	1,837	2,932	4,026	5,120	6,215	7,309	9,498
2,000/1,880	25	60	2,190	3,430	4,670	5,910	7,150	8,390	10,870
2,200/2,080	25	60	2,410	3,780	5,140	6,510	7,880	9,250	11,990
2,500/2,380	30	60	2,810	4,670	6,530	8,400	10,270	12,140	15,880
2,800/2,640	35	80	3,929	6,488	9,047	11,606	14,166	16,725	21,843
3,000/2,840	35	80	4,147	6,706	9,265	11,824	14,384	16,943	22,061

ACCESSORIES OF FULL CASING EQUIPMENTS



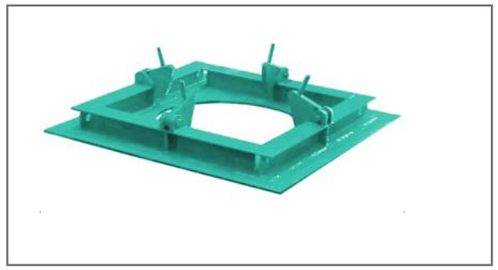
Impact Hammer

Casing Protection Cap



Pin

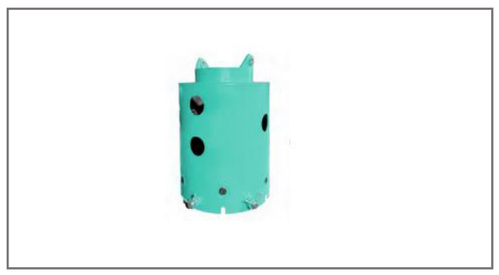
Casing Quick Release



Casing Holder

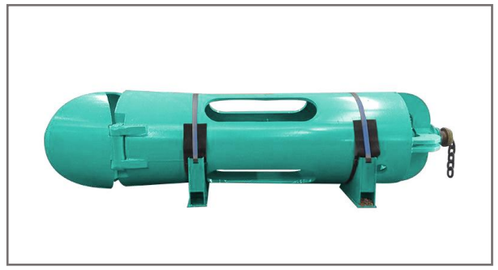
Swivel

Drives and Coneectors



Driver

IMPACT GRAB



Impact grab 100-200

Impact grab 210-320

IMPACT GRAB					
TYPE	Grab outer dia. mm	Grab Length mm	Grab Weight kg	Wirerope dia./length mm/m	Outer dia. of applicable casing mm
TNG800	630	4100	3000	Φ26/11	Φ800
TNG1000	830	4300	3800	Φ26/11	Φ1000
TNG1200	1030	4500	5300	Φ28/13	Φ1200
TNG1500	1330	5000	6800	Φ28/13	Φ1500
TNG1800	1630	5000	7000	Φ28/13	Φ1800
TNG2000	1830	5200	7500	Φ28/13	Φ2000
TNG2500	2330	5400	9300	Φ30/13	Φ2500
TNG3000	2830	5400	10500	Φ30/13	Φ3000

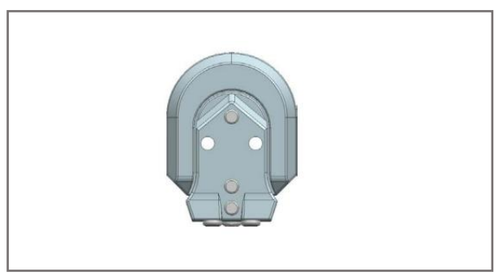
FULL CASING CUTTINGS

Cutting 45

Cutting 50

Reinforced alloy cutting tool 50

Alloy cutting tool holder



Cutting

Casing Screw