



Wirth Pile Top Drill Rigs



Solid Foundations with Pile Top Systems

About Us

HMH is a leading global provider of first-class drilling solutions and services designed to offer our valued clients with the safer, more efficient and reliable alternative. Our company vision is centered on an unparalleled commitment to quality and yielding economic advantages for our customers and stakeholders.

HMH has a global span covering five continents with offices in 15 countries. Drawing upon our global market success, we continue to seize opportunities through an established strong regional presence in Africa, Americas, Asia Pacific, Caspian, Europe and the Middle East. Our dedicated professionals consistently strive to enhance customer satisfaction and form meaningful collaborations by creating a personalized experience.

Experts at your disposal

HMH is your first choice for reliable pile top systems for onshore and offshore applications. Cost efficiency and outstanding performance are the key factors that make us stand out from the competition.

Our experienced specialists provide comprehensive advice on selecting the correct equipment for the individual site conditions – from the tender phase all the way through to project execution.



Australia – Tanker terminal
PBA 612/2 000/200 for raker
piles at an inclination of up to
1:3, with drilling diameters of
up to 1.25 m and depths of up
to 50 m

Areas of Application

Our Wirth pile top drill rigs (PBA) provide the most efficient solution for foundations in mixed and hard formations. A full scale of rigs cover all diameters from 0.6 to 8.5 m and can also be used to drill inclined piles. They have been successfully deployed in various projects, both onshore and offshore:

- Superstructures and buildings
- Anchoring of oil and gas platforms
- Marine structures, such as harbours extensions, jetties, dolphins, berths and dry docks
- Bridges, piers and causeways
- Marine sewerage diffusers
- Offshore wind farms
- Dam rehabilitation
- Decommissioning of oil and gas platforms

Our PBA with the high torque power swivel is the ideal machine for drilling in mixed ground, boulders and hard rock. The most common drilling applications are:

- Rock drilling
- Rock socketing
- Anchor drilling
- Secant wall drilling
- Underreaming
- Bell-out of the rock socket
- Pile cutting
- Milling of deformed casings
- Shaft drilling



China/Macao – Venetian casino

PBA 936/3200/300

Foundation of more than 250 piles, with a drilling diameter of 3 m and drilling depths of up to 110 m

Deeper and Faster Drilling



Close consultation and support

Our experts provide comprehensive advice, right from the pre-engineering and tender phases. This includes giving an indication of expected rates of penetration along with advice on the selection of supporting equipment. HMM's drilling experts are available for commissioning and for training personnel.

+15%



Outstanding drilling performance

In each class, our PBAs have an excellent power/weight ratio. Maximum drilling performance is guaranteed, even under the toughest conditions, along with easy and fast equipment handling.



Economical RC drilling

HMM is the world market leader in reverse circulation drilling in the correct layout. This method is highly efficient, and provides an excellent value for money.

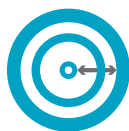
-20%



Quick assembly

The modular design and the quick-action multi-couplings ensure a fast and easy set-up of the drill rig.

>97%



Unmatched availability

More than 30 years of experience from equipment manufacturing and successful project execution secures HMM's outstanding equipment quality and weight/performance ratio. Our customers benefit from excellent total cost of ownership with unmatched availability, low spare-part consumption rate and maintenance costs.



Maximal versatility

Exchangeable cutters ensure that drilling is possible in varying geological formations. Different diameters can be created by just one machine, by exchanging the drill bit accordingly. The drilling depth can be increased simply by extending the drill-pipe length.



High independency

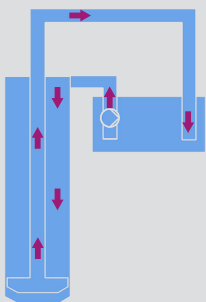
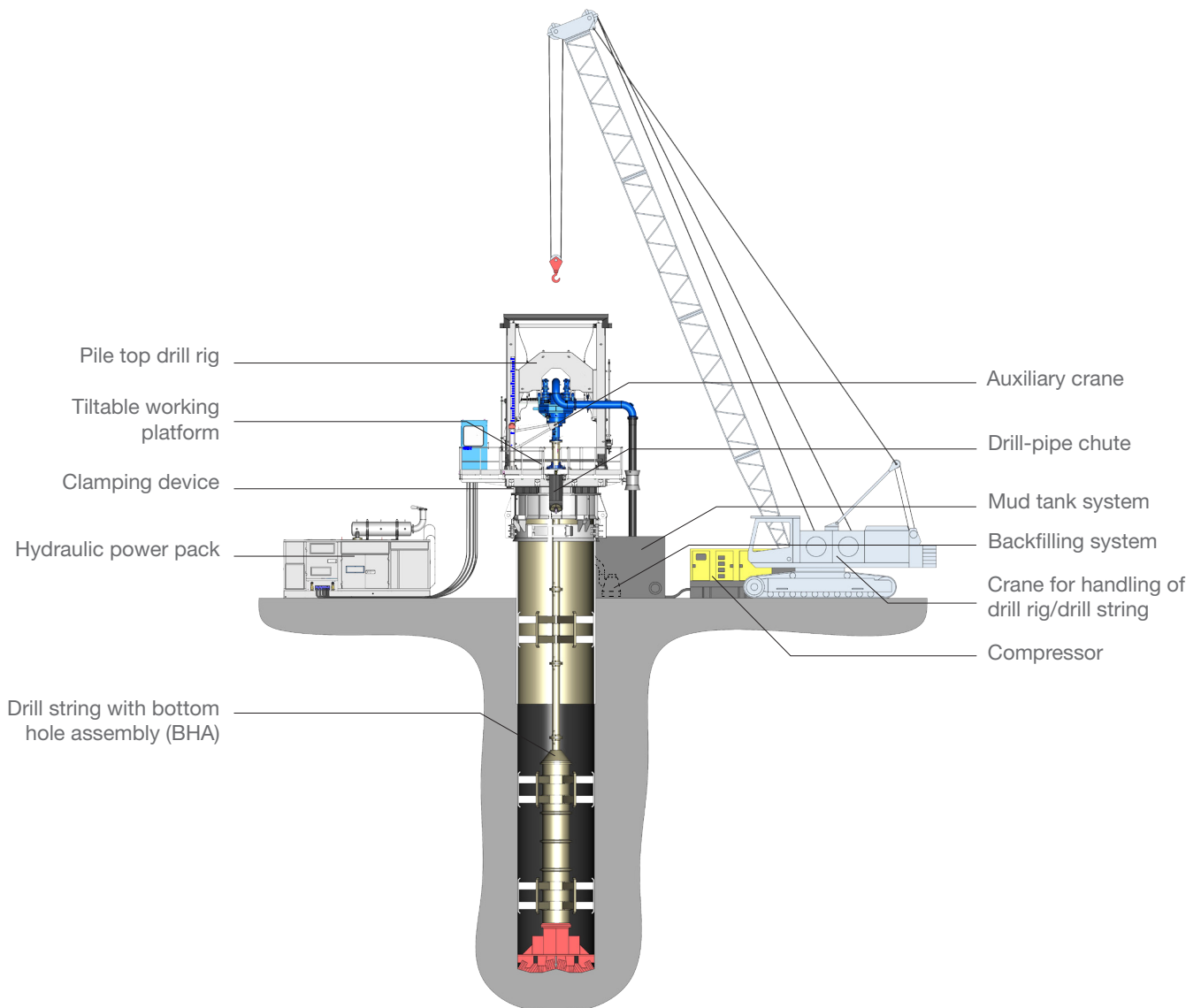
An onboard crane supports equipment handling.



Support Services

Our technical support teams are available 24/7 to provide you with the support you need to keep your rigs operational.

Rig Arrangement



Environmentally friendly closed loop circulation

- Water from a tank fills the borehole
- Water and cuttings are flushed out by RC through the drill pipe into the tank
- Cuttings are settling out in the tank
- Clean water fills the hole as per step 1

No spillage, no environmental pollution.

Hydraulic Power Packs

We provide a full range of hydraulic power packs (HPU) from 162 kW (220 hp) to 470 kW (639 hp). All HPUs consist of leading edge technology and are optionally available as multi purpose units allowing to also drive auxiliary equipment.

The main features are:

- Compact design for a minimum footprint
- Soundproofed cover reduces noise emission substantially to ≤ 78 db(A)
- Frame designed with removable modules allow easy access for service and maintenance
- Integrated lifting lugs for quick handling
- Built-in exhaust system ensure short set-up time
- Cooling system for heavy duty working conditions
- Enhanced safety and environmental features
- Premium class diesel engine
- Additional control panel for remote operation
- Operation with biodegradable oil possible
- Multi-function features to drive a casing oscillator/rotator or other pile top units (optional)

HP II

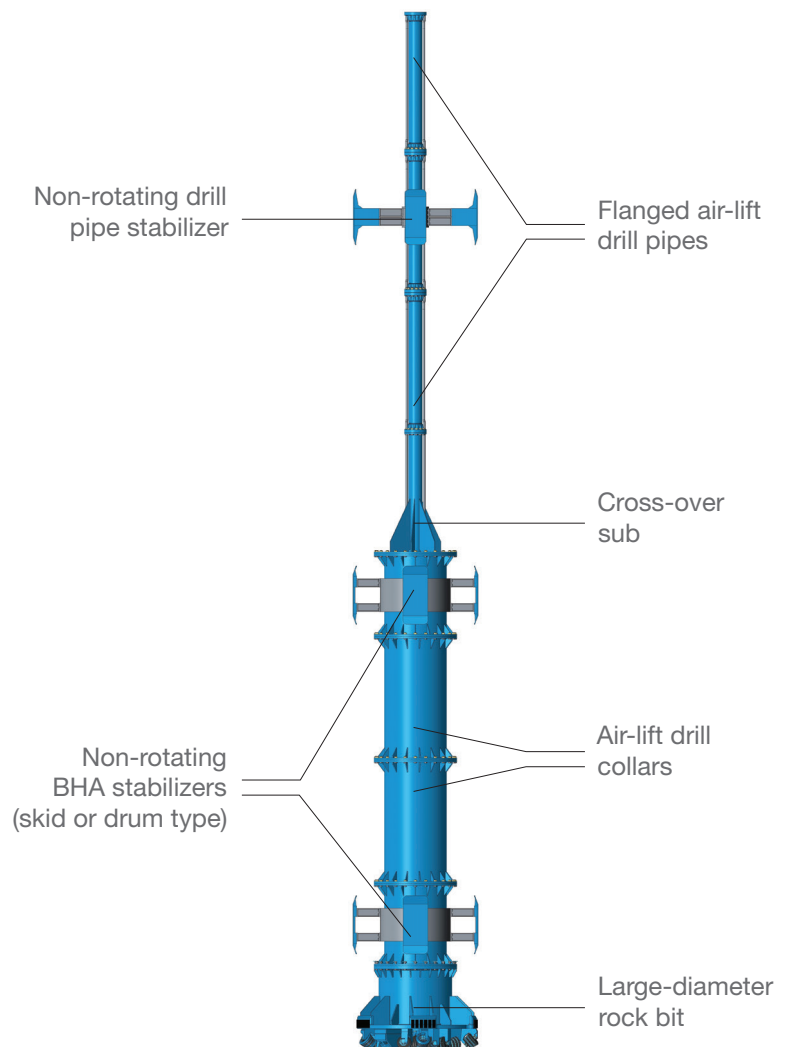
HP IVa

HP Va/
HP Va-sHP VI/
HP VI-s

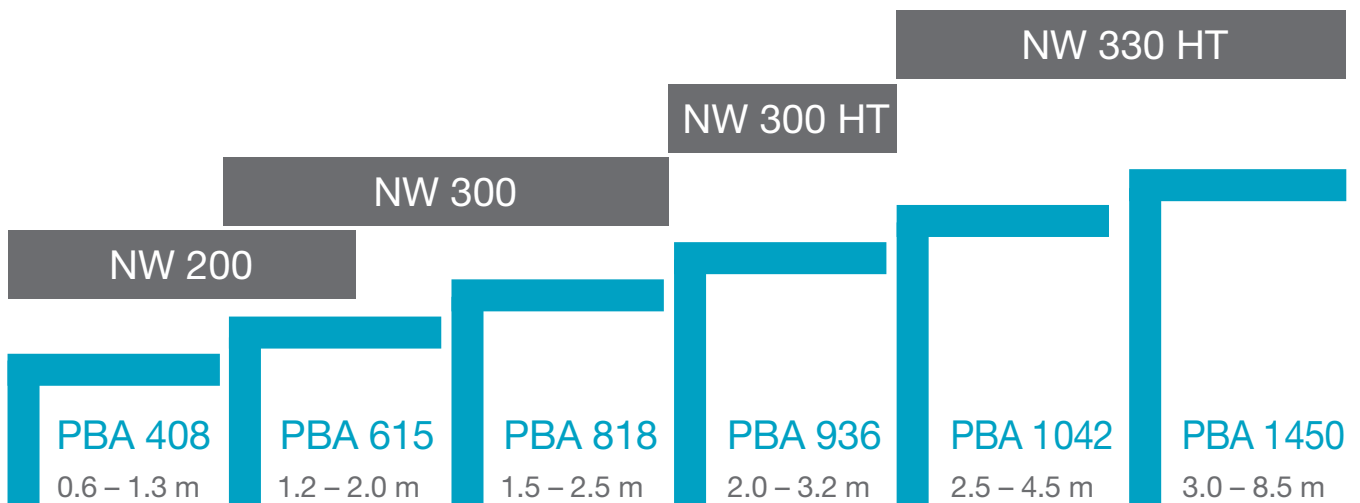
Power pack		HP II	HP IVa	HP Va/HP Va-s	HP VI/HP VI-s
Hydraulic power pack rating		162 kW (220 hp)	261 kW (354 hp)	447 kW (608 hp)	470 kW (639 hp)
Unit weight hydraulic power pack (dry)		5200 kg (5.7 short tons)	6500 kg (7.2 short tons)	8600 kg (9.5 short tons)	8600 kg (9.5 short tons)
Dimensions	Length	3620 mm (11.9 ft)	5000 mm (16.4 ft)	5920 mm (19.4 ft)	5920 mm (19.4 ft)
	Width	2030 mm (6.7 ft)	2000 mm (6.6 ft)	2100 mm (6.9 ft)	2100 mm (6.9 ft)
	Height	2281 mm (7.5 ft)	2320 mm (7.6 ft)	2320 mm (7.6 ft)	2320 mm (7.6 ft)

Drill String

Our pile top drill rigs can be applied in a wide field of applications for which we can supply the necessary drill string components. The modular design of our drill string makes it suitable for any depth and diameter. All components are built for long life and rough use.



Drill pipe diameters

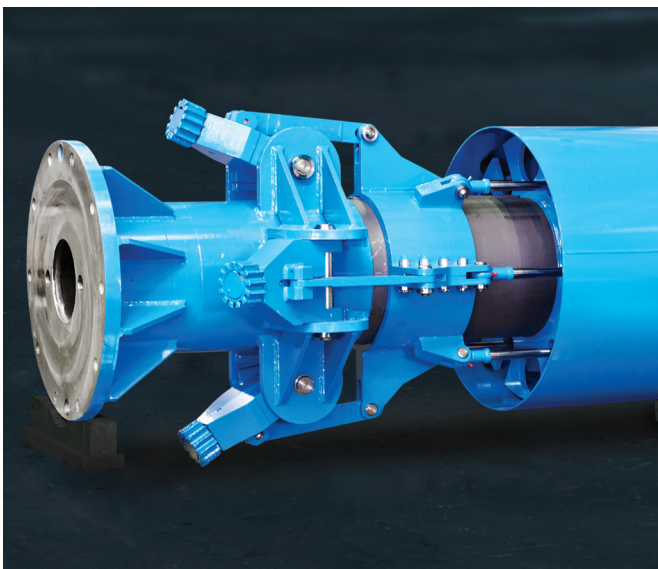


Special Tools

Pile top drilling is a challenging job. In addition to our standard drill rigs, we provide you with special tools for outstanding challenges.

The following tools are available:

- Large drilling diameter bits up to 8.5 m
- Rock bits with stinger
- Drill bits with integrated underreamer
- Pneumatic underreamer
- Hydraulic underreamer with rotor and separate power pack
- Milling tools to cut steel/deformed casings
- Steel-pile cutting tools for decommissioning of oil and gas platforms
- Cutters for all geological conditions up to 350 MPa



Experts at your Disposal

Our experienced experts provide comprehensive advice – as early as the pre-project phase. This includes the indication of expected drilling rates and cutter lifetime, as well as recommendations for the supporting equipment to ensure the successful operation of our pile top drill rig.



Project completion

- Decommissioning
- Sourcing for new projects
- Equipment overhaul
- Preservation for storage

Project execution

- Service and maintenance
- Performance improvement and optimization of resources
- Spare part supply and cutter management
- Operators upon request

Project start

- Commissioning
- Training in assembly, maintenance and operation
- Supervision

Tender phase

- Consulting
- Budgetary quote
- Matter statement for project execution
- Recommendation for auxiliary equipment

Pre-project phase

- Project evaluation/analysis
- Execution proposal
- Definition of the required equipment

Highest Efficiency with Reverse Circulation Drilling

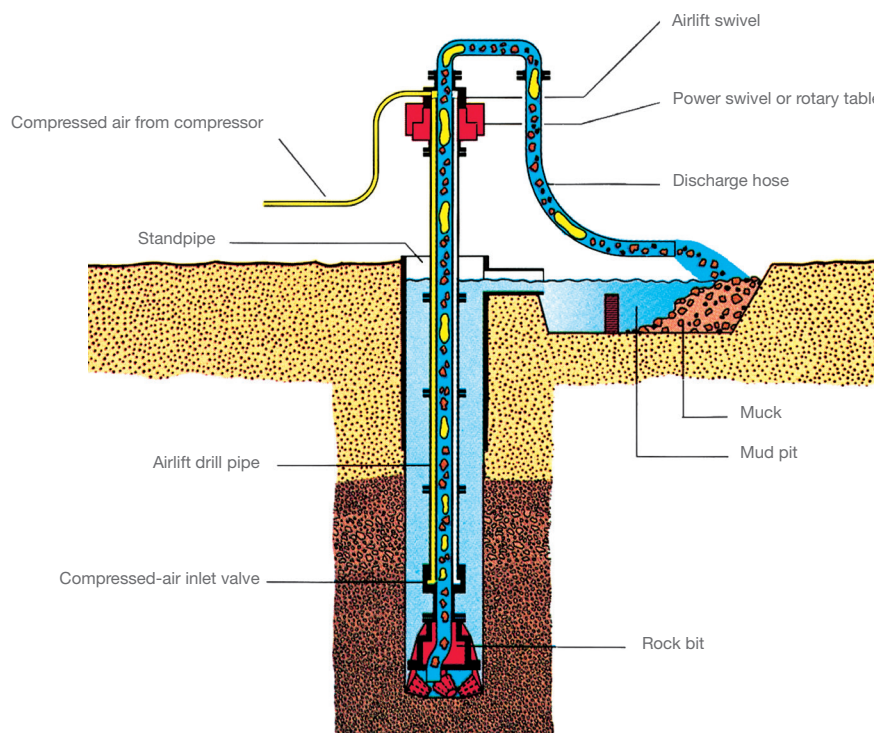
HMH is the world market leader in reverse circulation drilling (RCD). This method sets the standards for cost effectiveness and versatility.

The RCD method, also referred to as airlift drilling, is well-established as a robust and straightforward means of operation, which is highly effective for large diameters and great depths, both in onshore and offshore applications.

Principle of operation: Compressed air is injected into the drill pipe below water level and just above the cutting head. As the air rises and expands within the drill pipe, the density in the internal liquid column is greatly reduced, leading to a difference in pressure between the liquid in the drill hole outside and the liquid inside the drill pipe.

Due to the higher density in the outer column, the solids pass from the drill hole through the cutting-head suction opening, and rise up through the drill pipe. Provided that the correct air/liquid flow is established within the drill pipe, solids will be transported to the surface according to the airlift principle.

The differential pressure and thus the conveying capacity depend on the rate and volume of the compressed air injected, the depth of injection and the delivery head.

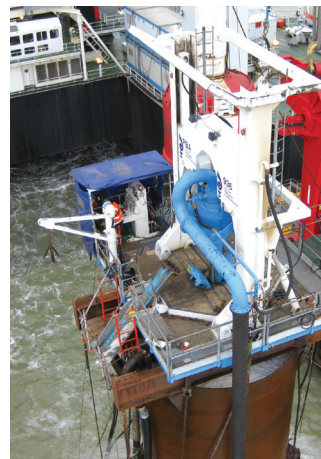


References

More than 300 Wirth pile top drill rigs by HMM have proven to be outstandingly reliable and efficient in numerous projects around the world.



China/Hong Kong – Stonecutters Bridge
PBA 936/3000/300 for foundation of flyover piles, each with a diameter of 3.0 m and depths of more than 100 m



UK/West Coast – Burbo windfarm
Pile foundation for three MW wind turbines, with a drilling diameter of 4.5 m and depths of up to 60 m



Australia – North West Shelf
PBA 936/3000/300 for foundation of the Angel oil and gas platform. Drilling diameter of 3.0 m and a drill string length of up to 110 m



USA/California – San Francisco – Oakland Bay Bridge
PBA 933/3 000/300 for the reinforcement of the San Francisco Bay Bridge



USA/New Hampshire/Maine – Sarah Mildred Long Bridge
PBA 933/3 000/300 for the foundation of 29 piles to replace the existing bridge; with a drilling diameter of 2.9 m and depths of up to 50 m



India – Mumbai Port Extension
PBA 615 for construction of the 2 500 m long approach trestle; more than 600 piles with 1.2 m at a drilling depth of up to 45 m.

References



Canada/Saint John – Canaport LNG terminal
PBA 612 for foundation of 60 piles, each with a diameter of 1.12 m and a depth of 80 m



USA/Kentucky – Wolf Creek Dam
PBA 818/2500/300 for a cut-off wall, with a drilling diameter of 1.27 m, depths of up to 90 m, rock strengths of up to 150 MPa



Venezuela – Orinoco Bridge
Three PBA 818 and one PBA 612 to install 156 piles (bridge length: 3.2 km), with diameters of 2.4 m and 1.8 m, and depths of up to 60 m

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