UNITED FACTORIES OF DRILLING EQUIPMENT NAMED AFTER V.V. VOROVSKIY

CREATE THE FUTURE
AND KEEP TRADITIONS

DRILLING RIGS CATALOGUE

SELF-PROPELLED DRILLING RIGS
COMPACT DRILLING RIGS

RIGS AND EQUIPMENT FOR CPT (CONE PENETRATION TESTING)

DRILLING TOOLS

ORIGINAL SPARE PARTS

V.V. VOROVSKYI'S
OZBT

HIGH QUALITY AND RELIABLE EQUIPMENT
EFFECTIVE ENGINEERING SOLUTIONS

CONTENTS

HISTORY OF OUR SUCCESS

V.V. Vorovskiy Machine-building Factory
Ekaterinburg

1923

Founded in 1923, at The Factory was founded and named Mechanical Factory "Mechanical".
USSR industrialization required to discover new mineral deposits. The Factory reorganized and began producing drilling equipment in 1929.

1941

During The Great Patriotic War, the Factory produced military products, such as grenades, mines and warheads for Katusha rocket launchers.

1965

The Factory produced drilling equipment for 300 meters deep wells. Compact drilling rigs and new self-propelled drilling rigs on tracked chassis added to the list of equipment.
Engineers developed and Factory introduced the first exploration rig URB. Nowadays these rigs are using successfully in geological exploration and construction. In 1968, the Factory became an active member of the Chamber of Industry and Commerce.

1980

The Factory began to extend the supplying geography in 80s and today it includes Uzbekistan, Ukraine, Kazakhstan, Belarus, Mongolia, Poland, Bulgaria, Lithuania, Georgia. Factory products are using in countries of southeast Asia (India, Iran, Vietnam, Myanmar, and Syria), South America (Columbia, Venezuela, Argentina), Africa (Algeria, Libya, Egypt, Mali, South African Republic Cote D'Ivoire, and Kenya) and Cuba.

2018

In 2018, the Factory celebrated 95 years. The quality management system based on ISO (9000 series) introduced to keep a strong market position. Innovative approach of manufacturing, client centricity and original technical investigations brought success to the Factory.

Drilling Technologies Factory, Ltd.
Saint Petersburg

2007

The Factory was founded. Production of the drilling tools.
The first URB-2A2 drilling rig was manufactured in 2008, the first drilling rig on a tracked chassis made in 2009.
Rigs shelters production for exploratory drilling.

2013

USZ-20 CPT drilling rigs passed the tests successfully.The Distribution Agreement with worldwide brand of Cone Penetration Testing A.P. van den Berg signed up.

2014

A representative office opened in Moscow city.

2015

The start of export sales (Lithuania, Latvia, Czech republic, Africa, Bulgaria, Kazakhstan, Mongolia, Kyrgyzstan).

2016

Successful tests and patent`s registration for wheeled chassis, hard-metal bits TK-10 and cored augers.

2017

Drilling Technologies Factory Ltd. became an affiliated company of the Kirovskiy Factory.
Innovation workshop opened and the quality management certificate ISO 9001 received.

2018

The underground rig GEO 126P carried down into the mine for the first time.
Drilling rig URB 18 BUK released.
A representative office opened in Krasnoyarsk city.

2019

Workshop of tracked chassis for snow and swamp rigs production have been started.
TRADE-IN program have been starting.
A representative office opened in Irkutsk city.

2020

The Agreement of business assets union signed up. A new manufacturer is a result of two factories' alliance – The United Factories of Drilling Equipment named after V.V. Vorovskiy
Two manufacturing locations allow shipping the goods from Saint Petersburg and Ekaterinburg and providing drilling companies with high quality equipment very fast and with an optimal price.
Unique models of drilling rigs differ from other manufacturers developed because of factories` synergy.

2021

The new production areas opened in Ekaterinburg city.

QUALITY MANAGEMENT SYSTEM

The United Factories of Drilling Equipment named after V.V. Vorovskiy produce drilling and geology prospecting equipment, known as one of the best in Russia. Factory is working constantly to make output products perfect, manufacturing and designing the new products and expanding the product range of manufacturing.

In 2001 quality management system (QMS) realized and still using for effective functioning and development of the factory. QMS works for manufacturing and sale of drilling equipment and spare parts.

The United Factories of Drilling Equipment named after V.V. Vorovskiy QMS is in interaction with all existing processes and made for reaching the main goal of the factory to create effective, reliable and safe drilling equipment with the best service and maximum customer delight after using it.

The preparation for certification system`s integration took two years. In 2008, factory passed the certification of quality management system in State industry standard ISO 9001-2015 (ISO 9001:2015). This standard is identical to the International standard ISO 9001 what is demonstrate the high quality products and service. All leading worldwide manufacturers and a large part of Russian companies have International certificates of ISO 9001 standard in the field of QMS.

QMS based on using process approach as one of the main requirements in ISO 9001 standards. Moreover of planning goals in the field of quality, required condition is improving product quality to reduce manufacturing defects and failures.


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р

РЕГИСТР СИСТЕМ КАЧЕСТВА

ОРГАН ПО СЕРТИФИКАЦИИ СИСТЕМ МЕНЕДЖМЕНТА КАЧЕСТВА «САМТ-ФОНД»

СЕРТИФИКАТ СООТВЕТСТВИЯ

НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ:

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ

ГОСТ ISO 9001-2011 (ISO 9001:2008)

Certificate of conformity
State industry standard ISO 9001-2015

PATENTS FOR USEFUL MODELS

OUR PARTNERS

Российская компания «Роснефть»

Российская компания «Росгеология»

Компания ТНГ–ГРУПП

Российские железные дороги

Энергетическая компания «Газпром»

Алмазодобывающая компания «АЛРОСА»

Российская компания «Росжелдорпроект»

Компания «Сургутнефтегаз»

Российская компания «Русал»

Российская компания «Геотек»

Российская компания «Росатом»

ОАО «Башнефтегеофизика»

Российская компания «Роснефть»

Компания «Кузбасразрезуголь»

ABOUT THE FACTORY

7 REASONS WHY YOU SHOULD CHOOSE OUR DRILLING EQUIPMENT:

- **One of the most long-life, reliable and safety** drilling rigs in the world
- **The only one drilling equipment in Russia** that has high demand in the after market
- **Multivarious assembling** helps to produce different types of drilling
- **Our drilling equipment and drilling tool has high technical characteristics:**
  - high productivity
  - easy to use and assemble spare parts
  - low maintenance costs and extended warranty
  - long operation life of components and assemblies
  - high bearing quality of drilling equipment in the most difficult geological conditions
- **An expert approach** to equipment selection
- Application experience is **more than 90 years** (since 1923)
- **Professional technical support** during all stages of cooperation

WARRANTY OF HIGH QUALITY AND RELIABILITY

- *All units and parts are manufactured according technological cycles and time intervals*
- *Equipment`s reliability is tested by quality control department during all manufacturing cycles*
- *There are no rebuilted of defected parts in rigs. It is a guarentee for long–life service.*
- *Interrepair intervals extended due to factorie`s patented technologies. It helps to use the most wear off part longer.*
- *The warranty period has been extended.*

APPLICATION AREA

- **Drilling of geophysical and stratigraphic test wells**
- **Mineral exploration**
- **Engineering and geological research**
- **Civil and industrial construction**
- **Drilling and blasting**
- **Drilling of water wells**

COMPLETE PRODUCTION CYCLE

- **Design and engineering departments**
- **Metalworking and thermal treating process**
- **Welding line**
- **Mechanical assembly operations**
- **Painting area**
- **Testing department**

WE SPEAK THE SAME LANGUAGE

All factory`s employees had experience in operations with drilling equipment. They know all technical processes about drilling and exploitation.

Learn more about the terms of purchase and maintenance of drilling rigs by calling **8-800-250-19-40** and **8-800-775-46-79** or by visiting our websites: **www.zavodbt.ru** and **www.zivv.ru**

SELF-PROPELLED DRILLING RIGS

Self-propelled drilling rigs of the URB models are used for drilling different types of wells due to its construction and design. All URB rigs have drive connection with propelling motor of the transport base. Drilling is performed in a rotary way with well`s fluid circulating or air flushing. Also auger drilling with samples collection or longwall.

Application / Model	URB-2A-2/ 2A2D	URB-2D3 with 2D1 rotator	URB-2D3 with 2D1 rotator shift	URB-2D3	URB-2NT	Strelka	Tarantul	USZ
Drilling of water and ground-water wells	✓	✓	✓	✓		✓	✓	
Engineering and geological research		✓	✓	✓	✓	✓	✓	✓
Drilling of seismic wells				✓		✓		
Mineral exploration drilling				✓	✓	✓	✓	

URB-2A-2/ 2A-2D

DRILLING RIG

Functionality

URB-2A-2 drilling rig was made for drilling geophysical and stratigraphic test wells for oil and gas; mineral exploration; exploration of building materials and groundwater; engineering and geological research; drilling water wells and blast holes. URB-2A-2 with a shifting rotator is known for it's effective operation in any weather and climate conditions, widespread distribution.

Chassis

URAL, KAMAZ, ZIL, Multi-purpose tracked chassis, TT-4, TL-5ALM, floating hull

Specifications

Conditional drilling depth, m:	
Roller–bit drilling with fluid circulation and air flushing ∅ 93 mm	*350*
Dry core drilling ∅ 151 mm	*50*
Auger drilling ∅135 mm	*30*
Pneumopercussion drilling with longwall ∅ 130 mm	*none*
Pneumopercussion drilling with circular face ∅ 151 mm	*none*
Shock–contact method ∅ 140 mm	*none*
Cone penetration test	*none*
Dynamic penetration test	*none*
Pipe holder 250 mm	*optional*
Mast and carriage type	*standart*
Load allowed on the elevator, kN (kgs)	*63 (6300)*
Drill lifting speed, m/s	*0...1,25*
Spindle rotation speed	*132/213/307*
Torque, Nm (optional)	*4000/2500/1730*
Rotator stroke, mm	*5200*
Torque, Nm	*2000/1600/1100*
Spindle roation speed (optional)	*70/110/160*
Overall dimensions in transport position, mm	*8330x2500x3980*
Overall dimensions in working position, mm	*8530x2500x8380*
Platform weight, kg	*3200*

Equipment

Mast
Platform
Transfer case
Rotator
Spare parts
Pressure relief system

Optional equipment

Drilling pumps - NB4, NB-32, NB-50
Compressors - 4VU1-5/9 (no more than one), PK-5,25, KV-10/10C, KV-12/10C. KV-12/12C
Pipe holder - TD-250.ZBT
Auxiliary winch LG-16
Drilling tool

Advantages

Improved control ergonomics

Electronic control unit provides of drilling process safety

Serviced hydraulic system with temperature and pollution control

The ability to install any additional equipment easily

Economical maintenance

URB-2D3
with 2D1 rotator

DRILLING RIG

Functionality

URB-2D3 drilling rig with rotator was made for drilling geophysical and stratigraphic test wells for oil and gas; mineral exploration; exploration of building materials and groundwater; engineering and geological research; drilling water wells and blast holes.

Chassis

URAL, KAMAZ, ZIL, Multi-purpose tracked chassis, TT-4, TL-5ALM, floating hull

Equipment

Mast
Platform
Rotator
Spare parts
Transfer case
Pressure relief system
Electronic unit

Optional equipment

Drilling pumps - NB4, NB-32, NB-50
Compressors - 4VU1-5/9, PK-5,25, AK-9/10, KV-10/10C, KV-12/10C. KV-12/12C
Pipe holder - TD-250.ZBT
Auxiliary winch LG-16
CPT device USZ-10.ZBT
Drilling tool

Advantages

Improved control ergonomics

Electronic control unit provides of drilling process safety

Serviced hydraulic system with temperature and pollution control

The ability to install any additional equipment easily

Economical maintenance

Specifications

Conditional drilling depth, m:	
Roller–bit drilling with fluid circulation and air flushing ∅ 93 mm	*350*
Dry core drilling ∅ 151 mm	*70*
Auger drilling ∅ 135 mm	*50*
Pneumopercussion drilling with longwal ∅ 130 mm	*150*
Pneumopercussion drilling with circular face ∅ 151 mm	*70*
Shock–contact method ∅ 140 mm	*none*
Cone penetration test	*optional*
Dynamic penetration test	*none*
Pipe holder 250 mm	*optional*
Mast and carriage type	*reinforced*
Load allowed on the elevator, kN (kgs)	*63 (6300)*
Drill lifting speed, m/s	*0...1,25*
Spindle rotation speed	*140/230/320*
Rotator stroke, mm	*5200*
Torque, Nm	*4000/2500/1730*
Overall dimensions in transport position, mm	*8330x2500x3980*
Overall dimensions in working position, mm	*8530x2500x8380*
Platform weight, kg	*3200*

URB-2D3
with 2D1 rotator shift

DRILLING RIG

Functionality

URB-2D3 drilling rig with rotator was made for drilling geophysical and stratigraphic test wells for oil and gas; mineral exploration; exploration of building materials and groundwater; engineering and geological research; drilling water wells and blast holes.

Specifications

Conditional drilling depth, m:	
Roller–bit drilling with fluid circulation and air flushing ∅ 93 mm	*350*
Dry core drilling ∅ 151 mm	*70*
Auger drilling ∅ 135 mm	*50*
Pneumopercussion drilling with longwall ∅ 130 mm	*150*
Pneumopercussion drilling with circular face ∅ 151 mm	*70*
Shock–contact method ∅ 140 mm	*40*
Cone penetration test	*optional*
Dynamic penetration test	*optional*
Pipe holder 250 mm	*optional*
Mast and carriage type	*reinforced*
Load allowed on the elevator, kN (kgs)	*63 (6300)*
Drill lifting speed, m/s	*0...1,25*
Spindle rotation speed	*140/230/320*
Rotator stroke, mm	*5200*
Torque, Nm	*4000/2500/1730*
Overall dimensions in transport position, mm	*8330x2500x3980*
Overall dimensions in working position, mm	*8530x2500x8380*
Platform weight, kg	*3200*

Chassis

URAL, KAMAZ, ZIL, Multi-purpose tracked chassis, TT-4, TL-5ALM, pontoons

Equipment

Mast
Platform
Rotator
Spare parts
Transfer case
Pressure relief system
Electronic unit

Optional equipment

Drilling pumps - NB4, NB-32, NB-50, Dynaset HDF 90/150-85

Compressors - 4VU1-5/9, PK-5,25, AK-9/10, KV-10/10C, KV-12/10C. KV-12/12C, Dynaset HKL 2600/8-65-OPE

Pipe holder - TD-250.ZBT

DPT device UDZ-60.ZBT

CPT device USZ-10.ZBT

Casing device UPOK-168.ZBT

Winch - LBS-250

Drilling tool

Advantages

- Improved control ergonomics
- Electronic control unit provides of drilling process safety
- Serviced hydraulic system with temperature and pollution control
- The ability to install any additional equipment easily
- Economical maintenance

URB-2D3
with 2D3 rotator

DRILLING RIG

Chassis

URAL, KAMAZ, ZIL, Multi-purpose tracked chassis, TT-4, TL-5ALM, floating hull

Equipment

Mast
Platform
Spare parts
Transfer case
Pressure relief system
Rotator

Optional equipment

Drilling pumps - NB4, NB-32, NB-50, Dynaset HDF 90/150-85

Compressors - 4VU1-5/9, PK-5,25, AK-9/10, KV-10/10C, KV-12/10C. KV-12/12C, Dynaset HKL 2600/8-65-OPE

Pipe holder - TD-250.ZBT

DPT device UDZ-60.ZBT

CPT device USZ-10.ZBT

Casing device UPOK-168.ZBT

Winch - LBS-250

Drilling tool

Functionality

URB-2D3 drilling rig with 2D3 planetary 4-speed rotator was made for rotary drilling with fluid circulating and air flushing; cable-rotary down the hole drilling and auger drilling for various purposes wells, including water wells.

Specifications

Conditional drilling depth, m:	
Roller–bit drilling with fluid circulation and air flushing ∅ 93 mm	*350*
Dry core drilling ∅ 151 mm	*70*
Auger drilling ∅ 135 mm	*50*
Pneumopercussion drilling with longwall ∅ 130 mm	*150*
Pneumopercussion drilling with circular face ∅ 151 mm	*70*
Shock–contact method ∅ 140 mm	*optional*
Cone penetration test	*optional*
Dynamic penetration test	*optional*
Pipe holder 250 mm	*optional*
Mast and carriage type	*reinforced*
Load allowed on the elevator, kN (kgs)	*63 (6300)*
Drill lifting speed, m/s	*0...1,25*
Spindle rotation speed	*33/66/92/184*
Rotator stroke, mm	*5200*
Torque, Nm	*4000/1440/4000/1400*
Overall dimensions in transport position, mm	*8330x2500x3980*
Overall dimensions in working position, mm	*8530x2500x8380*
Platform weight, kg	*3200*

Advantages

Improved control ergonomics

Electronic control unit provides of drilling process safety

Original 2D3 rotator has a reduced speed range, which is preferable for geological exploration drilling

The ability to install any additional equipment easily

Economical maintenance

Serviced hydraulic system with temperature and pollution control

URB-2NT

DRILLING RIG

Functionality

The self-propelled tracked URB-2NT drilling rig is designed for vertical and directional drilling of geophysical, stratigraphic test wells and exploration wells for oil and gas in a rotary way, with fluid circulating and air flushing, or auger drilling in areas accessible to tracked vehicles.

Distinctive feature

High-speed rotator provides the possibility of diamond drilling in rocks of the highest category.

Specifications

Conditional drilling depth, m::	
Roller–bit drilling with fluid circulation and air flushing ∅ 93 mm	*350*
Dry core drilling ∅ 151 mm	*70*
Auger drilling ∅ 135 mm	*50*
Pneumopercussion drilling with longwall ∅ 130 mm	*150*
Pneumopercussion drilling with circular face ∅ 151 mm	*70*
Shock–contact method ∅ 140 mm	*none*
Diamond drilling ∅ 93 mm	*200*
Inclined drilling	*60–90°*
Cone penetration test	*none*
Dynamic penetration test	*none*
Pipe holder 250 mm	*optional*
Mast and carriage type	*reinforced*
Load allowed on the elevator, kN (kgs)	*63 (6300)*
Drill lifting speed, m/s	*0...1,25*
Spindle rotation speed	*133/240/445/800*
Rotator stroke, mm	*5200*
Torque, Nm	*2000/1100/598/333*
Overall dimensions in transport position, mm	*8330x2500x3980*
Overall dimensions in working position, mm	*8530x2500x8380*
Platform weight, kg	*3200*

Chassis

URAL, KAMAZ, ZIL, Multi-purpose tracked chassis, TT-4, TL-5ALM, floating hull

Equipment

Mast
Platform
Spare parts
Transfer case
Pressure relief system
Rotator

Optional equipment

Drilling pumps - NB4, NB-32, NB-50, Dynaset HDF 90/150-85

Compressors - 4VU1-5/9, PK-5,25, AK-9/10, KV-10/10C, KV-12/10C. KV-12/12C, Dynaset HKL 2600/8-65-OPE

Pipe holder - TD-250.ZBT
CPT device USZ-10.ZBT
Drilling tool

Advantages

Improved control ergonomics

Electronic control unit provides of drilling process safety

Serviced hydraulic system with temperature and pollution control

The ability to install any additional equipment easily

Economical maintenance

Complex for counter-flush core drilling

HYDRAULIC CORE LIFTER

The use of such complexes (with observing all drilling regimes) allows to drill with 100% core recovery in unstable rock zones up to the IV category in terms of drillability at a rate several times higher than the rate of drilling with a core drilling.

Features of work

Counter-flush core drilling is characterized by continuous removal of destroyed rock from the bottom of the well, which is fed to the core receiver through the flushing system sleeves.

Equipment

URB drilling rig
Container trailer
Core receiving device
Drilling tool kit:
- crowns
- core pipes for various purposes
- steel and light alloy double drills
- emergency fishing tool

Functionality

Complexes for counter-flush core drilling are using for exploratory surveying works, geochemical survey, geological mapping, mineral exploration, identification of groundwater deposits, geochemical research for oil and gas.

Well drilling performed with counter-flush core, delivered to thesurface through the inner drill pipes. Complexes for counter-flush core drilling allow to drill wells up to 300 m deep down with bits up to 93 mm in diameter.

Outstanding feature

The main difference between the URB rigs used for the counter-flush core drilling and the standart URB rigs is in the design change of individual assembly units and the replacement of some components. In particular, the spindle was replaced in the rotator, the well flushing system replaced (replacement of the water swivel and elevator), which provides safety operation if the pump pressure up to 5.8 MPa. The rig is assembled with additional equipment for counter-flush core drilling.

The complexes for counter-flush core drilling completed with a core receiving device, where the core sludge mass goes into perforated trays. The pressing of soil provides its dehydration through holes in perforated trays.

Specifications

Conditional drilling depth, m:	
With steel drill pipes	*150*
With light alloy drill pipes	*300*
Drilling diameter:	
With steel drill pipes	*84*
With light alloy drill pipes	*93*
Drill ligting speed, m/s	*1,25*
Spindle rotation speed	*132/213/307*
Rotator stroke, mm	*5200*
The greatest moment of force, not less than	*2000*
Hydraulic system working pressure	*100*

STRELKA

DRILLING RIG

Functionality

The self-propelled tracked URB-STRELKA drilling rig designed for vertical and directional drilling of geophysical, stratigraphic test mapping wells and exploration wells for oil and gas in a rotary way, with fluid circulating and air flushing, or auger drilling in areas accessible to tracked vehicles.

Outstanding feature

All meachanisms included in the rig are mounted on their own frame, attached to the frame of a self-propelled tracked vehicle with a carrying capacity of 5 tons and are driven from the D-245 deck power unit. Hydrostatic transmission, variable reverse axial piston pump and motor.

Specifications

Conditional drilling depth, m:	
Roller–bit drilling with fluid circulation and air flushing ∅93 mm	*350*
Dry core drilling ∅151 mm	*70*
Auger drilling ∅135 mm	*50*
Pneumopercussion drilling with longwall ∅130 mm	*150*
Pneumopercussion drilling with circular face ∅151 mm	*70*
Shock–contact method ∅140 mm	*none (optional)*
Cone penetration test	*none (optional)*
Dynamic penetration test	*none (optional)*
Pipe holder 250 mm	*none (optional)*
Mast and carriage type	*reinforced*
Drill rotation speed, r/m	*0...300*
The highest torque, Nm	*0...3000*
Drill lifting speed, m/s	*up to 1,2*
Borehole inclination angle, degrees	*45–90*
Rotator stroke, mm	*2200*
Overall dimensions in transport position, mm	*6120x2480x6770*
Overall dimensions in working position, mm	*6120x2480x6950*
Platform weight, kg	*5000*

**When using a stand–alone compressor*

Chassis

Self-propelled tracked vehicle with a carrying capacity of 5 tons and travel speed of 3-4 km/h

Equipment

Mast
Platform
Rotator
Spare parts
Radio control
Pressure relief system
D-245 power unit

Optional equipment

Drilling pumps - Dynaset HDF 90/150-85
Compressors - Dynaset HKL 2600/8-65-OPE
Pipe holder - TD-250.ZBT
Winch - LBS-160
Drilling tool

Advantages

- Small dimensions
- URB performance

TARANTUL

DRILLING RIG

Chassis

Self-propelled tracked vehicle with a carrying capacity of 8 tons and travel speed of 3-4 km/h

Equipment

Mast
Platform
Rotator
Spare parts
Radio control
Pressure relief system
D-245 power unit

Optional equipment

Drilling pumps - Dynaset HDF 90/150-85
Compressors - Dynaset HKL 2600/8-65-OPE
Pipe holder - TD-250.ZBT
Dynamic sounding device - UDZ-60.ZBT
Winch - LBS-160
Drilling tool

Advantages

Small dimensions
URB performance

Functionality

The self-propelled tracked URB-TARANTUL drilling rig designed for vertical and directional drilling of geophysical, stratigraphic test mapping wells and exploration wells for oil and gas in a rotary way, with fluid circulating and air flushing, or auger drilling in areas accessible to tracked vehicles.

Outstanding feature

All meachanisms included in the rig are mounted on their own frame, attached to the frame of a self-propelled tracked vehicle with a carrying capacity of 8 tons and are driven from the D-260 deck power unit. Hydrostatic transmission, variable reverse axial piston pump and motor.

Conditional drilling depth, m:	
roller–bit drilling with fluid circulation and air flushing ∅93 mm	*350*
– dry core drilling ∅ 151 mm	*70*
– auger drilling ∅135 mm	*50*
– pneumopercussion drilling with longwall ∅130 mm	*150*
– pneumopercussion drilling with circular face ∅ 151 mm	*70*
– shock–contact method ∅ 140 mm	*none (optional)*
– cone penetration test	*none (optional)*
– dynamic penetration test	*none (optional)*
– pipe holder 250 mm	*none (optional)*
– mast and carriage type	*reinforced*
Drill rotation speed, r/m	*140/230/320*
The highest torque, Nm	*4000*
Drill lifting speed, m/s	*up to 1,2*
Borehole inclination angle, degrees	*90*
Rotator stroke, mm	*3700*
Overall dimensions in transport position, mm	*5000x2000x2850*
Overall dimensions in working position, mm	*4800x2000x5300*
Platform weight, kg	*7000*

**When using a stand–alone compressor*

USZ.20 / USZ.22

CPT INSTALLATION

Functionality

Cone penetration tests of soils help to identify the following features:

- **engineering and geological elements (thickness, distribution limits of different soils);**
- **homogeneity of soil`s area and depth;**
- **occurrence depth of the rocky and macrofragmental soils;**
- **an approximate characteristics of soils (density, angle of internal friction,specific cohesion, deformation modulus, etc.);**
- **soil resistance under the pile and along its lateral surface;**
- **degree of compaction and hardening of fill-up and filled out soils;**
- **selection of locations for experimental sites for a more detailed study of the physical and mechanical properties of soils.**

Outstanding feature

Semi-automatic push-down force up to 22 tons ensures maximum productivity.

Specifications

Parameter name:	USZ-22	USZ-20
Chassis	Ural NEXT	KAMAZ 43118
Whole laboratory car weight, kg	22 000	21 000
Working indentation speed, m/min	0...3	0...3,5
Rapid indentation speed, m/min	0...7	0...7
Increased working endentation, kg (max)	20 000	18 000
Enhancement of rapid indentation, kg (max)	12 000	15 000
Working lift speed, m/min	0...1,8	0...2
Rapid lift speed, m/min	0...4	0...5,5
Increased working lift, kg	22 000	22 000
Increased fast lift, kg	20 000	20 000
Hydraulic pressure, bar	190	190
Hydraulic system	“Sauer–Danfoss” (USA)	“Sauer–Danfoss” (USA)
Heating system	“Webasto”	“Webasto”
Control place	In a van	In a van
Method of current supply to electrical equipment of a laboratory car	From basic chassis	From basic chassis

Features of work

- **Modern design and materials:**
  - Mechanical capture: CPT-rods capturing in the process of crushing or lifting.
  - - Two handles control: 3 position (capturing the rods while lifting them, neutral, capturing the rods when pushing in).
- **Mechanism for pressing and lifting the rods**
- **Electronic control and monitoring unit**
- **Drilling device:**
  - Will simplify testing on bulk soils or in those conditions where the operation of the probed column is immediately impossible.
  - The modernized crushing device allows you to install a drilling device on it.
- **Installation ballast frame:**
  - An individually designed frame allows you to maintain the maximum penetration depth and compliance with the inclinometer parameters.
  - Allows you to achieve optimal USZ weight distribution, depending on the configuration and the selected chassis.

Advantages

Productivity up to 200 m per shift

Education

Probe testing laboratories

Advantages

Kamaz/Ural

Optional equipment

CPT equpment:
- A.P. van den Berg (Netherlands)
- Geotest (Russia)

COMPACT DRILLING RIGS

Compact drilling rigs of the UKB-12/25 models are designed for use in engineering and geological research, blast holes drilling, and drilling holes during foundation strengthening.

Rigs can be used in various conditions: on the surface, in basements, on slopes and railway banks at temperatures from -32 to +40 C.

Auger and core drilling with fluid circulation or air flushing. The drilling depth, depending on the method, ranges from 10 to 50 m. The units are driven by electric or gasoline engines.

At the request of the Customer, the unit can be mounted on a sleigh, a trailer or a cross-country vehicle. The design provides for the possibility of quick disassembly into units for separate manual carrying.

A distinctive feature of the units is their compactness, reliability, simplicity of design and maintenance, the ability to quickly replace spare parts in the field.

UKB-12/25IE

DRILLING RIG

Exceptional compactness and relatively low weight

Convenience of modular assembly and disassembly directly on site

The ability to adapt to individual climatic conditions

Reliability due to high–quality materials and highproduction standarts

Functionality

The rig fitted with an electric motor and designed for drilling wells up to 15 m deep by auger drilling and up to 25 m with hard-alloy bits and flushing in hard-to-reach areas or in enclosed spaces.

Specifications

Drilling depth:	
For diamond drilling, m	*30*
For carbide drilling, m	*25*
For drilling with augers ∅62/80/100/140/180 mm, m	*15/8/5/2*
Engine type	*АД80В2У3, исполение IM 1081*
Engine power, l.s. (kVt)	*4,1 (13,0)*
Rotator type	*mobile*
Rotator tilt angle, degrees	*45...90*
The highest torque, Nm	*407*
Drill rotation speed:	
I transmission (range 1/2/3), r/min	*65/204/460*
II transmission (range 1/2/3), optional, r/min	*292/460/923*
Rotator stroke, mm	*1200*
Innings	*цепная*
Maximum feed force, kgs	*400*
Maximum lifting capacity on hook, kgs	*400*
Overall dimensions, no more than:	
in transport position, mm	*1900x900x600*
in working position, mm	*1375x1065x2000*
Total weight of the unit (without tool and pump), kg	*140*

Chassis

The rig can be mounted on wheels, sleigh or UAZ-type car.

Optional equipment

Drilling pump NB1-25/16 (for wells flushing)

Core instrument set
∅ 59/76/93/112 mm

Auger instrument set
∅ 62/80/90/100/140 mm

UKB-12/25I

DRILLING RIG

This rig can be fitted with an electric motor, which makes it possible to drill in an inclined way in the range of 45–90 degrees.

Functionality

The UKB-12/25I rig designed for drilling wells using the core and auger drilling for researching,mapping, seismic and similar works in enclosed spaces or hard-to-reach areas.

Specifications

Drilling depth:		
For drilling with augers Ø70/90/140 mm, m		*15/10/525*
For carbide drilling, m		*25*
Engine type	**Lifan**	**Honda**
	1P70FV-3B	**GCV200**
Engine power, l.s. (kVt)	**6,5 (4,8)**	**5,6 (4,2)**
Rotator type		*mobile*
The highest torque, Nm		*426*
Drill rotation speed:		
I transmission (range 1/2/3), r/min		*68/216/487*
II transmission (range 1/2/3), optional, r/min		*110/347/781*
Innings		**chain with winch and spring accumulator**
Maximum feed force, kgs		*chain*
Winch type		*manual, two–speed*
Lifting capacity of the winch		*1,25/5,5*
nominal/maximum		
Overall dimensions, no more than:		
in transport position, mm		*1900x900x600*
in working position, mm		*1375x1065x2000*
Total weight of the unit (without tool and pump), kg		*130*

Outstanding feature

The unit differs from the base model by using an imported internal combustion engine with 3-speed spur gearbox.

Chassis

The rig can be mounted on wheels, sleigh or UAZ-type car.

UKB-12/25-02 «Pomboor»

DRILLING RIG

Drilling with augers, core drilling, with fluid circulation and air flushing

This rig can be fitted with an electric motor, which provides directional drilling in the range of 45–90 degrees.

Functionality

UKB-12/25-02 "Pomboor" designed for drilling wells in a rotary way, for researching, surveying, mapping, engineering and geological investigations, for blast holes drilling in frozen soils and other operations of a similar nature in hard-to-reach areas or space-limited conditions.

Specifications

Drilling depth:	
For carbide drilling ∅ 59mm, m	*50*
For drilling with augers ∅ 70/100/140mm, m	*30/15/10*
Engine type	**Honda**
Engine power, l.s. (kVt)	**16 (11,8)**
Rotator type	**mobile**
Rotator tilt angle, degrees	**80...90**
The highest torque, Nm	*1136*
Drill rotation speed:	
I transmission (range 1/2/3), r/min	*60/120/240*
II transmission (range 1/2/3), optional, r/min	*256/529/1003*
Rotator stroke, mm	**1150**
Innings	**hydraulic cylinder and spring accumulator**
Maximum torque, Nm	*1200*
Maximum feed force, kgs	*300*
Lifting capacity of the hook, kgs	*1250*
Overall dimensions, no more than:	
in transport position, mm	*3420x900x1550*
in working position, mm	*2500x900x2050*
Total weight of the unit (without tool and pump), kg	*260*

Chassis

For moving, the unit is mounted on a sled base. It is also possible to mount it on:
a self-propelled chassis
a wheel base
a GAZelle-type car.

Optional equipment

Drilling pump NB1-25/16 (for wells flushing)

Core instrument set
∅ 59/76/93/112 mm

Auger instrument set
∅ 62/80/90/100/140 mm

UKB-12/25-02 «Pomboor» G

DRILLING RIG

Drilling with augers, core drilling, with fluid circulation and air flushing

This rig can be fitted with an electric motor, which provides directional drilling in the range of 45–90 degrees.

Functionality

UKB-12/25-02 "Pomboor" G drilling rig consists of two blocks, mounted on its own wheeled chassis and is designed for core drilling with flushing or auger drilling during prospecting, surveying, mapping, seismic exploration and other operations in hard-to-reach areas or confined conditions.

Features of work

- The separate design of the rig allows to control the drilling process from a remote control panel.
- The features of the mast make it possible to drill wells at an inclination of up to 45 degrees in the horizon.
- The rig is driven by an imported small-sized internal combustion engine with a capacity of 22 horse-power, which allows to use different diameters of auger and core pipe.

Specifications

Drilling depth:	
For carbide drilling ∅59 mm, m	*50*
For drilling with augers ∅70/100/140 mm, m	*30/15/10*
Engine type	**Briggs & Statton, Honda, Flash**
Engine power, l.s. (kVt)	**22 (16,2)**
Rotator type	**mobile**
Rotator tilt angle, degrees	**45**
Drill rotation speed:	
I transmission (range 1/2/3), r/min	
II transmission (range 1/2/3), optional, r/min	*60/120/240*
Rotator stroke, mm	*264/527/1000*
Maximum feed force, kgs	*300*
Maximum torque, Nm	*1200*
Lifting capacity of the hook, kgs	*1250*
Overall dimensions, no more than:	
in transport position, mm	*2033x80x1580*
in working position, mm	*1814x880x4084*
Total weight of the unit with oil station, kg	*384*

Chassis

For moving, the unit is mounted on a sled base. It is also possible to mount it on:
a self-propelled chassis
a wheel base
a GAZelle-type car.

Optional equipment

Drilling pump NB1-25/16 (for wells flushing)

Core instrument set
∅ 59/76/93/112 mm

Auger instrument set
∅ 62/80/90/100/140 mm

Learn more about the terms of purchase and maintenance of drilling rigs by calling **8-800-250-19-40** and **8-800-775-46-79** or by visiting our websites: **www.zavodbt.ru** and **www.zivv.ru**

KM-10I & M-10I

PORTABLE DRILLING RIGS

КМ-10И

М-10И

Functionality

Portable drilling rigs KM-10I and M-10I designed for drilling wells in sediments of I-IV categories of drillability up to 10 m deep using auger drilling 62 mm and hard-alloy bits 59 mm without flushing for researching, surveying, mapping, engineering geological investigation and other operations of a similar nature in hard-to-reach areas.

Specifications

	KM-10I	M-10I
Drilling depth (up to IV category):		
For carbide drillingØ 59mm, m		
For drilling with augers Ø 62 mm, m	*10*	*10*
Maximum feed force up and down N(kgs)	*no less than 1176 (120)*	–
Feed	*chain*	*manual*
Rotator type	*mobile*	–
The highest torque, Nm	*262*	*262*
Drill rotation speed, r/min	*120/400*	*110/382*
Rotator tilt angle, degrees	*45...90*	*45...90*
Engine type	*Briggs & Stratton 750 Series I/C DOV*	
Engine power, l.s. (kVt)	*4,5 (3,3)*	*6,5 (4,7)*
Overall dimensions, mm	*700x600x1270*	*700x306x540*
Feed stroke length, m	*0,9±0,1*	–
Lenght of the candle (auger, rod) nominal, m	*0,80±0,05*	*0,80±0,05*
Total weight of the unit, no more than:		
portable drilling rig, kg	*45*	*16*
portable drilling rig (with spare parts, mounting and drilling		
spare paarts and engine accessories), kg	*95*	*75*

Outstanding feature of KM-10I

Due to the presence of a stand, which perceives torque and vibration during drilling, the KM-10I is more convenient to use.

Outstanding feature of M-10I

The M-10I motoboor, unlike the KM-10I motoboor, does not have a stand with a feed mechanism, a frame and a strut, but fitted with handles for manual drilling. The handles have shock absorbers and a stand.

GEOGRAPHICAL SUPPLY OF OUR EQUIPMENT OVER THE LAST 50 YEARS

4 CONTINENTS

28 COUNTRIES

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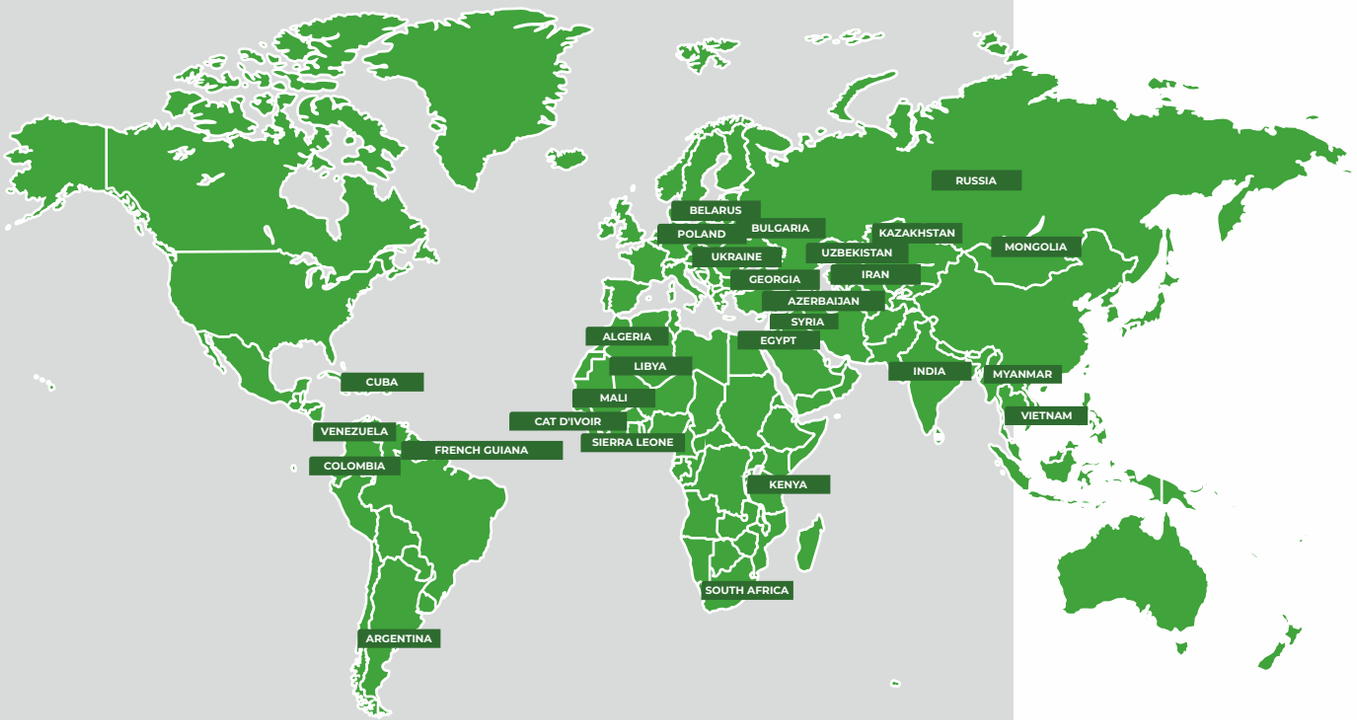

Many years of experience in exporting our products is the best confirmation of the quality and reliability of our drilling rigs.

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The catalogue was printed 21.06.2021

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