



DRILLING, CAPITAL AND OVERLAND REPAIR OF OIL WELLS



## LTD GROUP of COMPANIES "RUSGROUP MOSCOW"

Drilling, capital and overland repair of oil wells

Dear partners we are glad to inform you that we perform as the most successful and reliable company in the building field.

LTD GROUP of COMPANIES "RUSGROUP MOSCOW" was organized for alliance and international operation of Russian leading firm in many spheres, for example:

- · Building of houserooms, social objects and commercial broker;
- Modernization, rebuilding and maintenance of parallel-flow and concerned equipment;
- Performance of single project works;
- · Oil and gas output, their refining.

Company has all required licenses and permissions for all performed actions.

Our company sets ambitious targets and never is satisfied with achieved results. We want that client could completely trust our experience and expertise not only in Russia but in all countries where they need professionally fulfilled objectives. We believe that there is always an opportunity for continuous improvement of our product, improvement of employees' qualification level, waste reduction and quality guarantee for our customers.

We always carefully listen to customers' requirements and partners' wishes, cohering our experience with experience of leading companies.

We are interested in using of new technologies and try to be in the swim of all gadgets at the market. Our company cooperates with partners from the Ukraine, Belorussia, Kazakhstan, Turkey, United Arabs Emirates, Syria and Jordan.

One of the objectives for establishing of this company group is to support economy and infrastructure development in Iraq. We are also interested in development of commercial and economical relationship between Russia and Iraq, particularly successful returning of Russian companies to Iraq market. It is possible due to cooperation with Iraqi partners in oil and gas output, electrical, building and other industries.

We are sure that together we can achieve the success and will be glad to take part in sharing projects and cooperation.



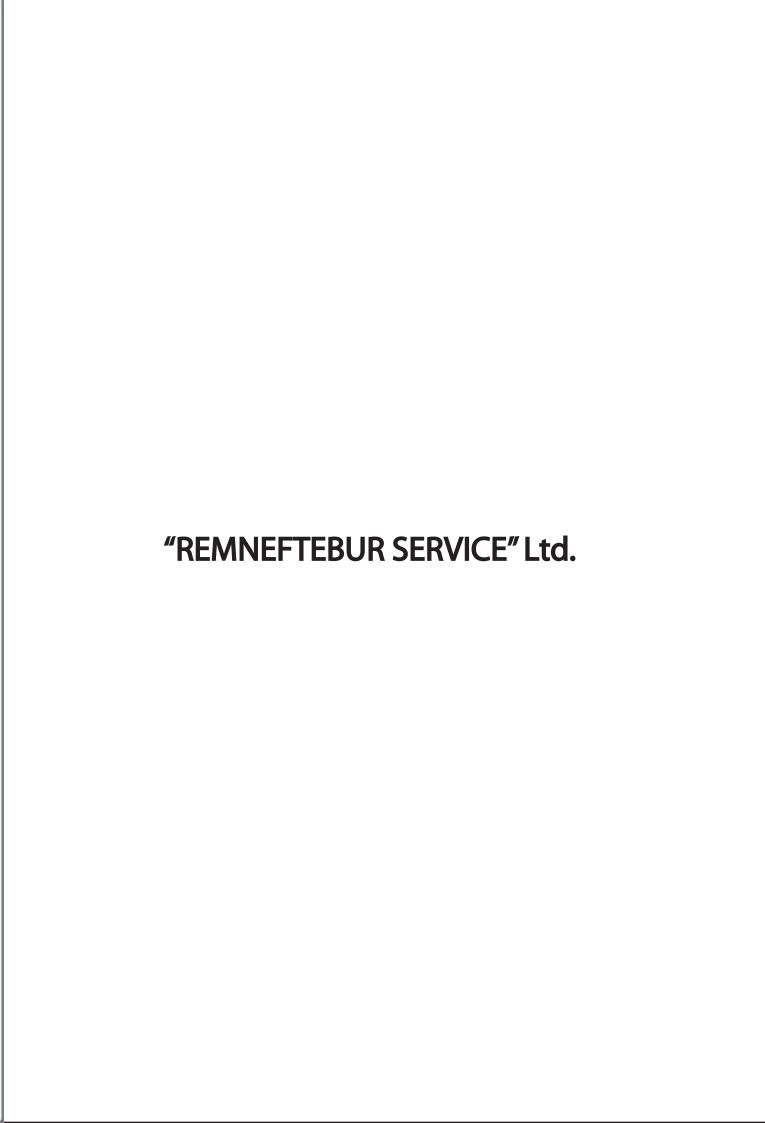
"REMNEFTEBUR SERVICE" Ltd.

"ALMETEVSK BORING COMPANY" Ltd.

"BASHKIR BORING ADMINISTRATION" Ltd.

OJSC "MOBILE DRILLING SYSTEMS"

"ZAVYALOVOSPEZSERVICE" Ltd.

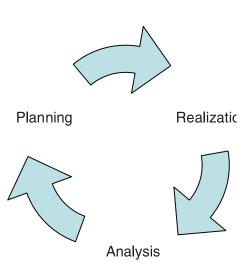




## "REMNEFTEBUR SERVICE"Ltd.

### About "REMNEFTEBUR SERVICE" Ltd.

REMNEFTEBUR SERVICE Ltd. renders services of boring. For our company's longlife under our specialists' supervising there were drilled more than 50 wells all over Russia and CIS. Our specialists have an experience of boring in East and West Siberia, Komi Republic, Kazakhstan, Uzbekistan, Volga Ural region, Orenburg region, and other countries. Our staff get a wide productive experience from Russian and foreign companies. While USSR times our chief engineer E. Vasilevskiy detected several large deposits in East Siberia including Verkhnechonskoe and Dulisminskoe ones. Moreover some of our highly skilled specialists have experience of work in East Siberia, Yakutia. They deal with from analysis geological and geographical characteristics, building ground, up to working out documentation and putting projects to a client. Our company develops and uses its own programs of projects management and engineering. Such large Russian and CIS companies as Gaspromneft, Zarubezhneft, Komnedra and etc. trust professionalism of Remneftebur Service Ltd.





At the planning stage our boring engineers gather and analyse information.

It includes a working project for a well building, data about drilled wells, borehole log data, transport schema, possible ways of transportation for equipment, materials and shift teams, analysis of geological and some temporary factors.

Next boring programs are worked out for specifying the project technology, used equipment and tools specifications are made in details and production plan with accurate tasks are made as well. Alongside there are signed contracts of work and labour and contracts with supervising companies.

Well building is guided according to the project of boring programs and operation work plans.

Well building is supervised constantly at the place and daily reported to our central office and our Client central office.

When well building is finished the well pass is made for our Client. Everyday our specialists control and correct if building execution is necessary.

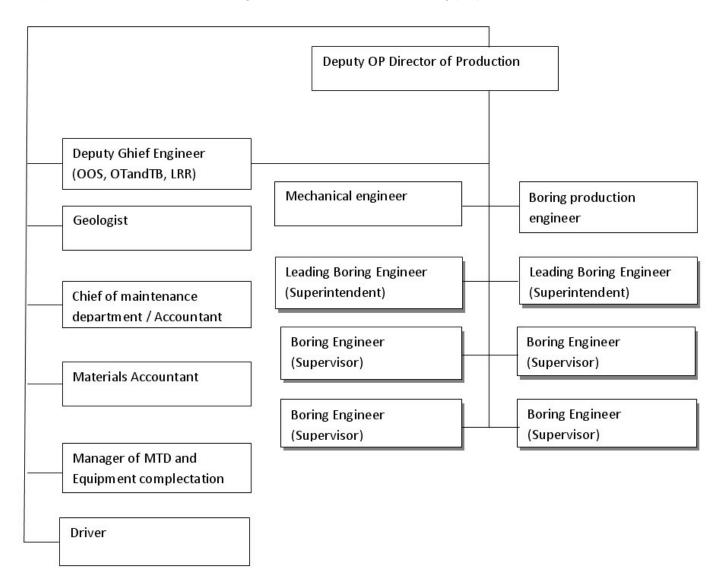
Together with boring our company renders service of supervising and engineering support. Our main partners for this service are:

- Almetevsk Boring Company Ltd.
- Bashkir Boring Administration Ltd.

## "REMNEFTEBUR SERVICE"Ltd.



We proved and offer to use next organization structure for a boring project realization:



According to this scheme we sort our engineering and office staff. Engineering staff is a boring team and boring engineers for technological supervising of well building. Office staff is represented by all the Client's services that are necessary for operative work.











# "ALMETEVSK BORING COMPANY" Ltd.

### "ALMETEVSK BORING COMPANY" Ltd.

Almetevsk Boring Company Ltd. renders boring services of all range. We uses only optimal technologies respectively industrial and environmental safety, and work effectiveness as well.

Our rich experience, highly technology basis and high quality works let us render specific services of any type well boring.

We constantly broaden our professional activity area and distribute our work beyond the Russian Federation borders long ago.

Our main task is our clients' satisfaction, we meet all their needs and consider specific terms of each order and deposit features.

Our main rule is to offer the best work quality and optimal time-frame for affordable price. We are open for cooperation!



### Our business

Our wide range of highly productive equipment ensures high quality and fast time-frame for our projects.

We drill wells with the help of contemporary Russian and foreign reagents and supply constant supervising of the boring process. It helps us to avoid a lot of troubles in spite of geological terms complexity.

Our company's 10 boring teams have drill units for exploratory and operational boring. All equipment obtains high technological characteristics that let to make structurally difficult well boring with wide diameter of operational stand of pipes and shift more than 2 km.

Our company builds wells for diverse tasks: exploratory, searching, operational, forcing. Both horizontal and hydro geological. We have an experience in boring the wells with separate formation exposing and side kickoff from the operational stand of pipe. Also we can drill the searching wells for evaluation and exploratory wells.







# "ALMETEVSK BORING COMPANY" Ltd.











### "BASHKIR BORING ADMINISTRATION" Ltd.

Bashkir Boring Administration Ltd revives the liquid but ruined company Bashkir Boring Administration, which was a branch of public corporation Podzemburgas. Bashkir Boring Administration Ltd administrative office and productive basis is situated in Bashkortostan Republic in 15 km to North-West from Kumertau City. Our company main activity is oil wells boring and gas wells, maintenance and repair of boring equipment.

So, for Kanchurino-Musinskoe deposit we drilled about 150 wells from 1600 to 2500 meters deep, for Karashurskoe deposit we made about 50 wells 1200 to 2500 meters deep.

For Orenburg oil and gas deposit our boring team drilled three wells 2500 meters deep with horizontal pipe 700-800 meters long.

Our company made capital repair of wells, set up underground equipment Recourse 1 and Recourse 2, packers PRO-yamo, PRO-yag for relief of operational stand of pipes. While well reconstruction we cut a part of stand of pipes for further widen of borehole and cement injection of this part.



Bashkir Boring Administration Ltd makes the full packaging arrangement of drill unit from next set of equipment:

- Uralmash-3D-76, Uralmash-3D-86-1 according to manufacturer specification. We can organize delivery of additional equipment and change technological specification if the client needs.
- A rig and foundation manufactured 2008 by Zabratskiy Engineering Plant in Baku.
- New or from stock sets of boring equipment and boring machines Uralmash-3D-86-1 from Uralmash Boring Equipment plant.
- Power drive supplied with a diesel engine YAMZ (alternatives possible), modular diesel engines with warmth-keeping with diesel engines YAMZ.
- Sets of boring equipment and boring machines Uralmash-3D-76 after capital repair. Diesel engine with drive B2-450, B2-500.
- Packaged with unit for upper worker evacuation.
- Warranty time for new equipment is according to manufacturers' terms
- Equipment after capital repair has warranty time for 6 months after bringing into service.
- Boring units have all documentation package according to Specification and Regulations.





# HOIST PARAMATERS

| Nº | Technical characteristics               | Hook-block type |          |
|----|---|-----------------|----------|
|    |   | LBU-1200D1      | LBU-1200 |
| 1  | Maximal lifting capacity, ton           | 200/320         | 225/250  |
| 2  | Rated capacity of hoist inlet, kilowatt | 710             | 710      |
| 3  | Drill line diameter, mm                 | 35              | 32       |
| 4  | Revving                                 | 5x6/6x7         | 5x6/6x7  |
| 5  | Speed stages of lifting shaft rotation  | 5               | 5        |



| 6  | Size of lifting drum, mm |                          |                 |
|----|--------------------------|--------------------------|-----------------|
|    | - diameter               | 800                      | 800             |
|    | - length<br>-            | 1030                     | 1030            |
| 7  | Brake system             | band brake with controll | ing balance arm |
| 8  | Additional brake         | UTG- 1450                | UTG- 1450       |
|    |                          |                          |                 |
| 9  | Size of brake disk, mm   |                          |                 |
|    | - diameter               | 1450                     | 1450            |
|    | - length<br>-            | 250                      | 250             |
| 10 | Clutches                 | 2MSHU-1070               | 2MSHU-1070      |
|    |                          | MSH-700                  | MSH-700         |
|    |                          | 2MSH-500                 | 2MSH-500        |
| 11 | Mass, kg                 | 23872                    | 26547           |

### Crownblock Crownblock parameters

| Nº | Technical characteristics                               | Hook-block type |            |
|----|---|-----------------|------------|
|    |   | UKB-7-400       | UTBK-5-225 |
| 1  | Maximal loading, kN                                     | 4000            | 2700       |
| 2  | Number of cable pulley                                  | 7               | 6          |
| 3  | Tackle diameter, mm                                     | 32              | 32         |
| 4  | Tackle diameter, mm                                     |                 |            |
|    | <ul><li>outside</li><li>at the bottom of slot</li></ul> | 1120            | 1120       |
|    | - at the bottom of slot                                 | 1000            | 1000       |
| 5  | Axes diameter, mm                                       | 260             | 220        |
| 6  | Mass, kg  | 23872           | 26547      |



# Diesel engines Diesel engines parameters

| Nº | Technical characteristics               | Diesel engine type |                |
|----|---|--------------------|----------------|
|    |   | V2-500-TK-C4       | YAMZ-8501      |
| 1  | Number and place of cylinders           | 12V                | 12V            |
| 2  | Cylinder diameter, mm                   | 150                | 140            |
| 3  | Piston stripping, mm                    | 180                | 140            |
| 4  | Boosting and cooling                    | no                 | Turbo boosting |
| 5  | Nominal capacity, hp                    | 450                | 440            |
| 6  | Nominal rotation frequency, rpm         | 1600               | 1800           |
| 7  | Specific fuel consumption, g/hph        | 162+8              | 153            |
| 8  | Specific oil consumption, g/hph         | 1,2                | 0,6            |
| 9  | Length of life before capital repair, h | 5000-10000         | Up to 30000    |
| 10 | Diesel engine mass, kg                  | 1450               | 2050           |

# Hoisting swivel Hoisting swivel parameters

| №  | Technical parameters                    | Hook block types |                    |
|----|---|------------------|--------------------|
| 1. | Permissible load, kN                    | UV 320<br>3200   | <b>UV 250</b> 2500 |
| 2. | Dynamic load (100rpm), kN               | 2000             | 1600               |
| 3. | Rotary table opening diameter, mm       | 75               | 75                 |
| 4. | Circulating-fluid maximum pressure, MPa | 32               | 25                 |
| 5. | Maximum stem rotation, rpm              | 200              | 200                |
| 6. | Bail upper section, mm                  | 150x170          | 140x150            |
| 7. | Stem mounting thread (left)             | 3-171L           | 3-152L             |
| 8. | Weight, kg                              | 2980             | 2300               |



# Rotary table Rotary table parameters

| №  | Technical parameters                          | Hook b | Hook block types |  |
|----|---|--------|------------------|--|
|    |   | P-700  | P-560            |  |
| 1. | Rotary-table opening diameter, mm             | 700    | 560              |  |
| 2. | Permissible rotary table dead load, kN        | 5000   | 3200             |  |
| 3. | Rotary table power, kW                        | 370    | 370              |  |
| 4. | Accumulative rotary count, rpm, not more      | 350    | 250              |  |
| 5. | Transmission ratio between driving shaft      |        |                  |  |
|    | and rotary table                              | 3,61   | 3,61             |  |
| 6. | Rotary table pin to outside row teeth pin, mm | 1353   | 1370             |  |
| 7. | Weight (excl. bushing), kg                    | 4790   | 5800             |  |

# Drilling rig basic parameters and characteristics

| $N_{2}$ | Parameters                                      | Drilling rig types  |              |  |
|---------|---|---------------------|--------------|--|
|         |   | Uralmash<br>3D-86-1 | NBO-76       |  |
| 1.      | Permissible hook load, kN                       | 320                 | 320          |  |
| 2.      | Relative drilling depth, m                      | 5000                | 3600         |  |
| 3.      | Design horsepower of drive at                   |                     |              |  |
|         | the hoist unit input shaft, kW                  | 690                 | 710          |  |
| 4.      | Rotary table opening diameter, mm               | 700                 | 560          |  |
| 5.      | Mud pump horsepower, kW                         | 600                 | 600          |  |
| 6.      | Design horsepower of rotor drive, kW            | 218                 | 370          |  |
| 7.      | Height floor (from drilling floor), m           | 6,5                 | 6,1          |  |
| 8.      | Line string-up                                  | 6x7                 | 5x6          |  |
| 9.      | Drilling line diameter, mm                      | 32                  | 32           |  |
| 10.     | Mud pumps number, pcs.                          | 2                   | 2            |  |
| 11.     | Pump pressure, MPa                              | 25                  | 25           |  |
| 12.     | Height from base plates up to                   |                     |              |  |
|         | the top of jig frame, m                         | 53,5                | 53,5         |  |
| 13.     | Effective total volume of circulating system, m | 160                 | not supplied |  |
|         |   |                     |              |  |



|    | mud pump: group drive geared by two |  |      |
|----|-------------------------------------|--|------|
| 3. | Basic mechanisms drive              | hoist, rotary table and one mud pump: gro<br>drive geared by three diesel engines; secon |      |
| 2. | Derrick base                        | OB53M  | OB53 |
| 1. | Number of refinery stages           | 4  | 3    |

### Derrick man evacuation device

| Nº  | Principal characteristics                              |     | Value |
|-----|--|-----|-------|
|     |  |     |       |
| 1.  | Cab lifting capacity, kgf                              | 120 |       |
| 2.  | Messenger average inclination, grade                   | 30  |       |
| 3.  | Messenger diameter, mm                                 |     | 16,5  |
| 4.  | Eccentric normally closed brake                        |     |       |
| 5.  | Handle force at brake release, kgf                     | 20  |       |
| 6.  | Running speed restriction - hydrodynamic brake         |     |       |
| 7.  | Running speed using hydrodynamic brake,                |     |       |
|     | not more, m/s  | 4   |       |
| 8.  | Towing hawser diameter, mm                             | 6,3 |       |
| 9.  | Cab lifting from the lower position up to the platform |     |       |
|     | by the wind  |     |       |
| 10. | Weight, kg   |     | 1471  |

# Hook blocks Hook blocks parameters

| Nº | Technical parameters  | Hook block ty | Hook block type |  |  |
|----|-----------------------|---------------|-----------------|--|--|
|    |                       | UTBK-6-320    | UTBK-5-225      |  |  |
| 1. | Maximum hook load, kN | 3200          | 2250            |  |  |
| 2. | Rope sheaves number   | 6             | 5               |  |  |
| 3. | Rope diameter, mm     | 32            | 32              |  |  |



| 4. | Sheave diameter, mm     |          |      |
|----|-------------------------|----------|------|
|    | - outer                 | 1120     | 1120 |
|    | - at sheave base        | 1010     | 1000 |
| 5. | Sheave pin diameter, mm | 260      | 220  |
| 6. | Hook design             | lamellar |      |
| 7. | Weight, kg              | 7520     | 6100 |

### **PROJECTS**

Here are our implemented and implementing projects

| Nº | Subject of the Contract, area of work  | Client  |
|----|--|---|
| 1  | Contract of work and labour in East part of Orenburg gas distillate deposit.   | CJSC Gaspromneft Orenburg                       |
| 2  | Contract for wells drilling in Kolgansk deposit of Orenburg oblast   | CJSC Preobrazhenskneft                          |
| 3  | Supervising Contract for building works of evaluation and exploratory wells, area: investment blocks of Usturtskiy region of Uzbekistan Republic       | CJSC Zarubezhneftegas                           |
| 4  | Contract for well drilling №55, area: Kamenskoe deposit  | CJSC Invest Trade                               |
| 5  | Specification №1, engineering supervising of wells building, area:<br>Tomsk oblast   | PJSC Tomskneft                                  |
| 6  | General Supervising Contract for building of operational wells, area:<br>Luzskoe deposit of Komi Republic  | Concorde LLC / Pechorskaya<br>Energetic Company |
| 7  | General Supervising Contract for building of evaluation and exploratory wells, area: Rodnikoviy deposit of Orenburg                                    | Promgeotech Ltd.                                |
| 8  | Well building №30 Mastrelskoye.<br>Building of mildly sloping well 3100 meters deep, area: Komi Republic   | PJSC Komnedra                                   |
| 9  | Well building №31 Mastrelskoye.<br>Building of mildly sloping well 3100 meters deep, area: Komi Republic   | PJSC Komnedra                                   |
| 10 | Drilling of second borehole with horizontal ending, well № 5/1, Severo-Mastrelskoye. Building of horizontal well 3100 meters deep, area: Komi Republic | PJSC Komnedra                                   |
| 11 | Well building №1, Ziminskaya. Planning of drilling program and technological parameters for well drilling.   | CJSC Sayankhimplast                             |



| 12 | Well building, area: Khandinskaya square and Kovyktinskoye deposit.<br>Engineer supervising of boring and tests. | PJSC RusiaPetroleum                 |
|----|--|-------------------------------------|
| 13 | Building of 100 operational wells 500 meters deep, area:<br>Karazhanbas, Kazakhstan                              | Machinery Plant<br>Karazhanbasmunai |
| 14 | Building of two evaluation and exploratory wells, №51 Yuzhno-<br>Nizevaya, № 19 Shtchelyayr, area: Komi Republic | CJSC RKM Oil                        |
| 15 | Drilling of searching well 4500 meters deep, area: Aktubinskaya oblast, Kazakhstan Republic                      | LLC TEPCO                           |









# OJSC "Mobile Drilling Systems"

The Open joint stock company "Mobile Drilling Systems" was established in May 2006.

The purpose for the creation of OJSC "Mobile Drilling Systems" was: the consolidation of the core resources of the oil and gas machine-building and investments in modernization of industrial facilities and technologies; the widening of the nomenclature of the qualitative goods and services; the forming of a large Russian high-technology machine-building group, supplying the oil and gas sector of Russian economy with the equipment; the reconstruction of marketability of the domestic oil and gas machine-building and oil servicing branch.

The Company's main profile is the drilling machines and drilling tools production and service.

Present days OJSC "Mobile Drilling Systems" consists of: OJSC "Kungur machine-building plant" (KMZ), OJSC "Ishimbay machine-building plant" (IMZ) and "Engineering company "Kungur machine-building plant". The activity of the companies is the one smoothly running united mechanism, which guarantees a fulfillment of the most complicated industrial tasks and a satisfaction of the permanently increasing demands of the clients.

On the facilities of the company we actively introduce the programs of the production modernization, brand new products developing, produced types of the equipment improving, professional level of the specialists increasing. The high quality of the produced products is achieved by the effective work in conformity with the quality system ISO 9001:2000.

Today the exported part of the products of the OJSC "Mobile Drilling Systems" is approximately 10%. On the Russian market the company occupies approximately 25% in turbo drill and screw-formed downhole motors segment, and in well repairing and well drilling aggregates segment – over 30%.

The products of the company are represented in all traditional oilfield regions of the Russian Federation and work for all main Russian and international oil and gas companies.

The Mobile Drilling Systems are ready to offer you the widest spectrum of the well exploration and repair equipment, which meets all the demands of Russian and international markets of oil and gas machine-building.

### MBU-125 BAZ-69099 chassis



Mobile drilling rig MBU-125 is designed for drill production and surveying boreholes with the help of rotary table and downhole engines.

Conditional borehole drilling depth amounts to 27000 meter (at drilling with stalk of 28 kg/m).

•



### MBU-125 MZKT-7003 chassis

The rig consists of the following units:

- traveling block at heavy-duty all-well drive chassis BAZ-69099, MZKT-7003;
- mobile block of wellhead platform and pipeways at triaxial trailer OZTOP4703V.



### **Travelling Block Performances**

| Safe hook load, kN (ton-force | e) 1226 ( | (125) |
|-------------------------------|-----------|-------|

**Device Drive** BAZ propelling motor of chassis YMZ-8424

MZKT propelling motor of chassis TMZ-8431.10  $\,$ 

**Drive power, kW (hp)** 330 (450)

Derrick:

• distance from ground to crownblock axis, mm 37 000

• traveled stalk length, mm 16 000, 19000, 21000, 24 000

Derrick platform drill pipe magazine capacity, m:

• drill pipe of 114 and 127 mm in diameter
• drill pipe of 73 and 89 mm in diameter
5400

Tackle system:

stringing
hoist wireline diameter, mm
28

Draw works:

traction power, kN (tone-force)
 tackle block lifting speed, m/s
 191 (19,5)
 0.15...1.5

Hydromatic brake:

• engagement on-line, by means of disk pneumatic clutch

• lowering speed of hook-block with load of 75 ton, m/s 0.9

Auxiliary hydraulic hoist:

• safe load, kN (ton-force) 29.5 (3)

Manifold (riser and rotary hose):

• passage diameter, mm 76

• operating pressure, MPa (kg/cm2) 19.6 (200)

**Emergency electric drive:** 

electric motor power, kW
hook block speed at safe load no a than 30 t/s, m/min
max hook block speed, m/min
2.9

**Explosion-proof lighting V** 220, (emergency 24)

Overall dimensions of traveling block (in over-the-road position), Chassis BAZ - Chassis MZKT-7003

mm 69099 26500x3100x4500 without platform 26500x3250x4500 26500x3100x4700 with platform

Traveling block mass in over-the-road position, kg 60 000 60 000



### ARB-100 BAZ-69096 chassis



ARB-100 is designed to drill by means of rotary table and downhole engines, develop, repair and recover oil-and gas-wells.

### ARB-100 MZKT-7004 chassis

Conditional borehole drilling depth at repair and development is 5000 meter (tubing strings 14 kg/m). Conditional borehole drilling depth is 2500 meter (at drilling with column of 28 kg/m)

The rig consists of the following main components:

- traveling block at all-wheel drive cross-country chassis BAZ- 69096, KZKT-8014, MZKT-7014;
- mobile block of wellhead platform and pipeways at triaxial trailer OZTP-84703V.



### **Travelling Block Performances**

Safe hook load, kN (ton-force)

Device drive:

Drawworks:

• tractive force at bailing drum, kN (ton-force)

• tackle block lifting speed, m/s

**Bailing winch:** 

• tractive force at drilling drum, kN (ton-force)

• bailing rope lifting speed, max, m/s

• bailing drum ripe capacity, m

981 (100)

motor of chassis YMZ-8424 within power of 330 kW

137 (14)

0.15...1.5

68.7 (7)

10

2000 (Ø15 mm) ... 2500 (Ø13 mm)



#### Derrick

• distance from ground to crown block axis, mm

• traveled stalk length, mm

#### Darrickman platform drill pipe magazine capacity:

• drilling pipe Ø114 and 127 mm, running length, m

• tubing strings and drilling pipes Ø 73 and 89 mm, running length, m

#### Tackle system:

• stringing

· hoist wireline diameter, mm

#### Auxiliary hydraulic hoist:

• safe load, kN (ton force)

#### Operation erection hydraulic system:

pump type and model

• rated pressure, MPa (atm.)

• rated supply, l/min

#### Hydraulic brake:

• rod stroke, mm

• developed power, kN (ton force)

#### Manifold (riser and rotary hose

• passage diameter, mm

• operating pressure, MPa (kg/cm2)

#### **Emergency electric drive:**

• electric motor power, kW

• hook-block speed at safe load, m/min

• max hook-block speed, m/min

#### Explosion-proof lighting V

Overall dimension of traveling block (in over-the-road position), mm

Traveling block weight in over-the-road position, kg

Telescopic, two-sectional, incline with open front

side

30 000

16000....18000

2500

5 000

With hoist wireline cross-over unit

4 x 5

25; 25,5

29.5 (3)

axial-piston pump 310.2.112 - 2 pcs/NSh-50m4-1 pcs

11.8 (120) / 13.7 (140)

380

2 pcs

1000

49 (5,5)

76

20 (200)

30

0,5

1.5

220, (emergency 24)

Chassis MZKT-7004

Chassis BAZ -69096

20000x3250x4500 without platform

20000x3250x4700 with platform

20000x3250x4500

57000 57000

### A60/80M1 BAZ-690902 chassis



Rig A60/80M1 is designed to repair and develop oil and gas wells, drill by means of rotary table and downhole engines.

Rig units are mounted at all-wheel drive chassis BAZ-690902, as well as at KZKT-80052, MZKT-7001, MZKT-70011. Conditional well depth for repair and development is 4000 meter (tubing strings of 14 kg/m). Conditional well drilling depth is 2000 meter (at drilling with drilling string of 24 kg/m).



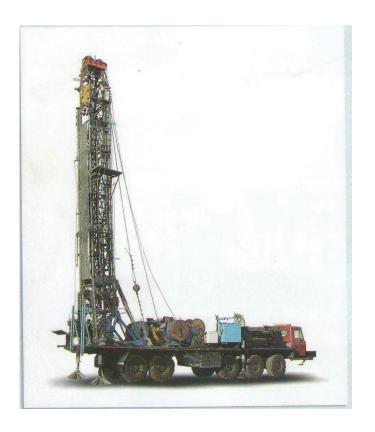
### ARB-100 BAZ-69096 chassis

#### Special features:

- single- or double-drum hoist with disk pneumatic clutches allowing immediate switching over from one to another speed range and not needing additional compressor;
- drawworks drum with Lebus grooves providing uniform cable winding;
- oil-filled chain gears of drawworks drive;
- hydromatic break with adjustable breaking torque;
- break shoes of 230 mm width from fixed drilling rigs;
- upper section extending by hydraulic hoist from remote control panel;
- hydraulic hoist for auxiliary operations;
- two-way hydraulic jacks (outriggers) with travel of 800 mm:
- rotary table drive reversing gear;
- band break of rotary table pneumatic drive;
- rotary table torque and speed indicator;
- capability to install wellhead platform at height of 2 m (for rotary table with cardan gear) and 3 m (for rotary table with cardan gear and verti-cal chain gear);
- capability to operate with safe load without installing rig guys to the ground;
- · emergency electric drive;

• tackle block lifting speed, m/s

- drum to cross-over for drilling line;
- equipment set in accordance with preferred destination and operation specific.



### **Travelling Block Performances**

Safe hook load, kN (ton-force) 787 (80)

**Device drive** Engine of chassis YMZ-7511 with power of 294 kW (400 hp)

single-drum, with disk pneumatic clutches and double-pulley

with hoist wireline cross-over unit

band break.

0,015...1,5

30

25

Tower design

Drawworks

single-section, height, m
double section, height, m
22,6

• double section, height, m

Hydromatic break

• engagement On-line, by means of disk pneumatic clutch

• lowering speed of traveling block with load of 48 ton, m/s

no more than

Tackle system

• stringing 3x4 (4x5 with 30-m tower)

host wireline diameter, mm



#### Bailing drum:

• rope capacity, m 3000 (within wireline dia 14 mm)

Carrying capacity limiter:

Electropneumatic with load indication by GIV or IBE 50M

Auxiliary hydraulic hoist:

• safe load, kN (ton-force) 29.5 (3)

Operation erection hydraulic system:

• pump type and model Axual-piston 3102,112 — 2 pcs ./NSh-50

• rated pressure, MPa (atm) 20 (200) / 16 (160)

• rated supply, l/min 370/50

Hydromatic brake:

• number, pcs 2 • rod stoke, mm 1000

• developed power, kN (ton-force) 54 (5,5)

Manifold (riser and rotary hose)

passage diameter, mm
 operating pressure, MPa (kg/cm2)
 20 (200)

**Emergency electric drive:** 

electric motor power, kW
tackle block lifting speed with maximal safe load, m/min
1,8

Bedplate under rear outriggers

for operation without derrick guys to the ground composite

• overall dimensions, m 6x0.7x0.1 or 4.5x0.7x0.1 **Emergency explosion-proof lightning V** 220 (emergency 24)

Overall dimensions (in over-the-road position), mmchassis BAZ-690902chassis MZKT-7001(in over-the-road position), mm15370x3200x450016200x3200x4500

Traveling block weight in over-the-road position, kg 53000 53000

### A60/80 KrAZ-63221.0000044 chassis



A60/80 rig is designed for repair and develop oil and gas wells, drill by means of rotary table and downhole engines.

Rig units are mounted at all-wheel drive chassis KrAZ-63221.0000044 or MZKT-8077-20 (since 2007). Conditional well depth for repair and development is meter (tubing strings of 14 kg/m). Conditional well drilling depth is 2000 meter (at drilling with drilling string of 24 kg/m).



#### Special features:

- single- or double-drum hoist with disk pneumatic clutches allowing immediate switching over from one to another speed range and not needing additional compressor;
- drawworks drum with Lebus grooves providing uniform cable winding;
- upper section extending by hydraulic hoist;
- hydraulic hoist for auxiliary operations;
- emergency electric drive;
- oil-filled chain gears of drawworks drive;
- two-way hydraulic jacks (outriggers) with travel of 800 mm;
- carrying capacity limiter, traveling block lift height limiter;
- equipment set in accordance with preferred destination and operation specific. with preferred destination and operation specific.

### **Travelling Block Performances**

| Safe hook load, kN (ton force) | 785 (80) |
|--------------------------------|----------|
|--------------------------------|----------|

Engine of chassis YMZ-238DE2 with power of 243 kW or Device drive:

YMZ-7511 with power of 294 kW

Single-drum or double-drum winch, with disk pneumatic Drawworks:

clutches and double-pulley belt break

- tackle block lifting speed, m/s 0.15...1.9

- line capacity of bailing drum, m 2000 (015 mm)...2500 (013 mm)

Telescopic, directional

22 600 - height of crown block above the ground level, mm - height of traveling block lift, mm 18 500

Derrickman platform (pipe capacity) 280/3400 (drilling pipes of Ø 89 mm, and length 12-13 m,

With hoist wireline cross-over unit Tackle system:

- stringing  $3 \times 4$ - hoist wireline diameter, mm 25

Auxiliary hydraulic hoist:

- safe load at hook, kN (ton-force) 29.5(3)

Operational/Installation hydraulic system:

- pump type and model Axial-piston 3102.112 2 pcs /NSh-50

19.6 (200)/15.7 (160) - rated pressure MPa (kg/cm2)

 $6.168 \times 10^{-3} (370) / 0.833 \times 10^{-3} (50)$ - rated supply m3/s (l/min)

Drill pipe breaker:

1000 - rod stroke, mm - max traction power, kN (ton-force) 54 (5,5)

Manifold (riser and rotary hose):

76 or 50 - passage diameter, mm - working fluid pressure, MPa (kg/cm2) 19.6 (200)

**Emergency electric drive:** 

30 - electric motor power, kW - tackle block lifting speed with max load at hook, m/s (m/min) 0.02 (1.2)

Base-plate under rear outriggers Composite

- overall dimensions, m 6x0.7x0.1 or 4.5x0.7x0.1 220 (emergency 24) Emergency explosion-proof lightning V

Overall dimensions (in over-the-road position), mm 14 400 x 3 400 x 4 500

Weight in over-the-road position, kg 32000 at KrAZ-63221.0000044 chassis



### UPA 60A (60×80)

Hoisting rig for oil- and gas- well development and repair UPA-60A is designed to develop, conduct current and major repair of oil- and gas-wells in conditions of regions with temperate and cold macroclimate.

It enables to conduct the following operations:

- to lower and lift tubing, drill pipes, to circulate wells;
- repair and accident elimination works, cement plug drilling in pipes O5-6";
- to install operational equipment at wellhead;
- to conduct drilling works.



Distinction from basic model (rig A50M) is that it meets "Oil and Gas Industry Safety Regulations PB 08-624-03", as well as usage of new technical solutions:

- the rig is equipped with four hydraulic support jacks with mechanical locks, front and rear foundation girders:
- tire-pneumatic clutches are replaced with pneumatic friction clutches of diaphragm type with low air consumption which do not need an additional compressor;
- carrying capacity limiter (limit torque clutch) is installed into transmission;
- front tower support is excluded, tower guys are remounted to the support behind the driver cab, that enables to improve driver's field of view;
- tower lifting control is made as remote control from distance of 20 m;
- derrikman platform equipped with emergency evacuation device;
- rig's tower is equipped with audio and visual warning of upper section installation;
- tackle block is replaced with multi-purpose hook-block;
- the rig is equipped with spark-arrester and rectifier for battery recharging,
- the transmission has an oil-bath for double-cain gear of hoist drive.

Hoisting rig for oil- and gas-well development and repair UPA-60A(60x80) is designed for all operation which are the same as for UPA-60A and has additional feature of short-term overloading up to 80 ton-force.

Difference from rig UPA-60A:

- has higher carrying capacity:
- max load at hook 800 kN (ton-force).

The following rig components were improved:

- construction of tower, rig's frame and hoist frame was reinforced;
- hoist brake system was redesigned to provide more effective braking;
- hook-block was replaced with reinforced traveling block.



Well major repair teams requirements are met as much as possible during complex repair works.

The set additionally includes the following units:

Wellhead operation platform, manifold riser unit, swivel VB-80, stem, drill hose, mechanical rotary table unit.

The rig can be additionally equipped with:

- pipe racks;
- derrickman racks;
- emergency electric drive designed to use for tower upper section lowering and putting into over-the-road position when the chassis motor fails;
- additional electric-driven compressor for emergency situations;
- tower upper section lifting system with hydraulic hoist;
- drum for hoist wireline over-crossing;
- electronic inclinometer designed to put the rig into level position;
- pump block driven from the rig by means of cardan gear.

### **Travelling Block Performances**

Installation-and-transport base Chassis KrAZ-65101b, KrAZ-65053-02 or KrAZ-63221

Safe load at hook, kN (ton-force) 600 (60) max short-term load for UPA-60A(60x80) 800 (80)

Directional telescopic tower with fender at lower section

Tower height from crown block axis to the ground  $22.0\pm0.4$  Traveling system stringing 3x4 Wire diameter, mm 25

Device drive propelling motor of YMZ-238M2 or YMZ-238DE2

Max drive power, kW (hp) 132.4 Hook-block lifting speed (180)

Hoist single-drum with chain gear, two-band breaks and pneumatic

clutches of drum engagement

Hoist speed number 4

Auxiliary hoist hydraulic or electric of explosion-proof design

Auxiliary hoist hook load, kN from 12.5 to 35
Auxiliary hoist hook lifting speed, m/s from 0.4 to 0.8
Hoisting rig overall dimensions in over-the-road position,

mm (length, width, height) 14000x2900x4300

Hoisting rig fully loaded weight in over the road position, 24000 – for UPA-60A

kg, no more than 26200 – for UPA-60A (60x80)

Total target life, years

### **AR-60**

Rig AR-60 is designed to repair and develop oil and gas wells, drill by means of rotary table and downhole engines.

Rig units are mounted at all-wheel drive chassis KrAZ-63221.0000044. 63221.0000044 or MZKT-8077-20 (since 2007). Conditional well depth for repair and development is 3000 meter (tubing strings of 14 kg/m). Conditional well drilling depth is 1500 meter (at drilling with drilling string of 24 kg/m).



## AR-60 for MI-26 transportation

#### Special features:

- single- or double-drum hoist with disk pneumatic clutches allowing immediate switching over from one to another speed range and not needing additional compressor;
- · drawworks drum with Lebus grooves providing uniform cable winding;
- · upper section extending by hydraulic hoist;
- oil-filled chain transmission of drawworks drive;
- two-way hydraulic jacks (outriggers) with travel of 0,8 m;
- · carrying capacity limiter, tackle block lift height limiter;
- equipment set in accordance with proffered destination and operation specific.

### Travelling Block Performances

Safe hook load, kN (ton-force) 589 (60)

Device drive Engine of chassis YMZ-238DE2 with power of 243 kW

Drawworks single- or double-drum, with disk pneumatic clutches and double-pulley band break.

AR-60

tackle block lifting speed, m/s
 0.15...1.9

- capacity of bailing drum, m 2000 (Ø 15 mm)...2500 (Ø 13 mm)

Tower: telescopic, directional

- height of crown-block axis above the 22600

ground level, mm

- height of traveling block lifting, mm 18500

Traveling system: with hoist wireline cross-over unit

- stringing 3x4
- hoist wireline diameter, mm 25

- hoisting capacity limiter

Auxiliary hydraulic hoist

- safe load at hook, kN (ton-force) 29.5 (3)

#### Operational/Installation hydraulic system:

- pump type and model Axial-piston 3102.112 2 pcs/NSh-50

rated pressure, MPa (kg/cm2)
 19.6 (200)/15.7 (160)

- rated supply, m<sup>3</sup>/s (l/min) 6.168x10<sup>-3</sup> (370) / 0.833x10<sup>-3</sup> (50)

Drill pipe breaker:

- rod stroke, mm 950 - max traction power, kN (ton-force) 54(5,5)

Derrickman platform (capacity pcs/m) 280/3400 (drill pipes of Ø 89 mm and length of 12-13 m) on request

#### Manifold (riser and rotary hose)

passage diameter, mm 76 or 50
 working fluid pressure, MPa (kg/cm2) 19.6 (200)

#### Emergency electric drive:

- electric motor power, kW 30 and 5
- tackle block lifting speed with max load at hook, m/s (m/min) 0.02 (1.2)

Base-plate under rear outriggers Composite

- overall dimensions, m 6x0.7x0.1 or 4.5x0.7x0.1

Emergency explosion-proof lightning V 220 (emergency 24)

Overall dimensions (in over-the-road position), mm

32000

Weight in over-the-road position, kg

AR-60 for MI-26 transportation



| "ZAVYALOVOSPEZSERVICE" Ltd. |  |
|-----------------------------|--|
|                             |  |



### "ZAVYALOVOSPEZSERVICE" Ltd.

Stability and efficiency are main principles which "Zavyalovospezservice" Ltd holds since it was setting-up. Stability is reliability in relationship with partners and clients, when any worker of the company can rely on us in all affairs. Also it's reliability of the company's management and employees in tomorrow. Stability doesn't mean stagnancy, but, on the contrary I think that the stable company can be only in the case of continual development. Efficiency is the key word to detect any actions and company's decision, which combine determination on the results and skills to achieve the goal, overcoming difficulties.

Actually, new horizons of activity are opened before the company, after five years of working in the market of manufacturing and repairing of oil equipment: in the expansion of geography of works and in transition to qualitatively new level of their execution as well. Two facts, that in 2007 "Zavyalovospezservice" Ltd was certified of international quality standard ISO 9001: 2001 and also handed objects for the Russian and foreign customers mean that it's not onlywords.



Viktor Beliaev General director

### COMPANY'S DIRECTIONS OF ACTIVITES





Supply of drilling and oil equipment, training of personnel how to operate with supplied equipment, oil well drilling, throughout and overland.

Overground repair of wells Ecological works on the wells of different purposes

### **HISTORY**

The history "Zavyalovospezservice" Ltd is related with Zavyalovo georesearching expedition (ZGE), which was the organization department of the public enterprise "UdmurtGcologhiya". ZGE was one of the leading companies, subordinated to Ministry of Geology of the USSR. ZGE won repeatedly in industry's competitions and the workers were rewarded with professional and government awards. ZGE developed material and technical base in more than 20 years and served as a "place" for training of many professional people oilman and drillers, who's long experience serves nowadays for "Zavyalovospezservice" Ltd, which was formed in 2002.

One of the employees is Viktor Beliaev, general director

of "Zavvalovospezservice" Ltd. Viktor Beliaev after he was

graduated from georesearching technical school in Novochersky (Rostov region) and started to work in joint stock company (JSC) "UdmurtGeologhiya" as car repair man. Then he began to work as machine engineer of drilling rigs. In 1982 started to work as plant engineer in ZGE and then expeditions' deputy chief of production.

Viktor Beliaev worked in ZGE under Nikolai P. Bozhko supervision, who was one of the "pioneers", who started searching and extraction of different minerals, including oil, in Udmurt Republic. Viktor Beliaev considers Nikolai Bozhko as his tutor, who gave examples of fair and effective management of the big collecter.

One of the characteristic feature of the general director of "Zavyalovospezservice" Ltd is inspiration for raising his own professional level. When Viktor Beliaev was plant engineer in ZGE, he was graduated from Ufa Oil Institute and then was graduated from Udmurt Public University (department of law)

In 1996 he was appointed deputy general director of the company "Nefteburkomplekt", which also form part of OJSC "UdmurtGeologhiya". In 1999 ZGE became independent and (after it was renamed some times more) in 2002 became "Zavyalovospezservice" Ltd, which Viktor Beliaev leads.

### **MANUFACTURE**

"Zavyalovospezservice" Ltd is engaged not only in assembling of equipment of different units of the factories but produces the equipment. Basically, it is non-standart oil and drilling equipment, which goes to complete drilling rigs. Engineering department of "Zavyalovospezservice" Ltd designs these equipment. Nowadays, company's production and technical base allow to produce:

Drilling equipment, spare parts for drilling equipment and accessories (pump block with pumps of different types; mud systems, tanks for oil storage of different types, capacity 3 m1 - 5 m1, oil terminals, capacity up to 1 000 mJ.

The feature of "Zavyalovospezservice" Ltd is that the customer, who wants to buy a drilling rig, receives individual project, which is made especially for concrete project, taking into account all characteristics. Specialists of "Zavyalovospezservice" Ltd repair oil and drilling equipment, trucks for oil transportation,

cisterns, tractors, maintenance of equipment, including mounting, starting and testing.

Produced equipment is the same quality of foreign analogues and also is cheaper. That's why "Zavyalovospezservice" Ltd equipment is demanded in Russian market and also provide success in international market.



### **PARTNERS**

The success of the company in many cases depends on leadership skills to choose reliable partners and to keep in long touch with them. Actually "Zavyalovospezservice" Ltd collaborate with many famous Russian companies, which produce oil equipment: Kungur and Elabuga machine building plants, OJSC Uralmash, Pervouralsk pipe plant, Taganrog metallurgic plant and also several companies of the cities like Tyumen, Yekaterinburg, Kazan, Naberezhniyc Chelni etc.

The company is proud of having exclusive right to supply equipment to Africa and Latin America of JSC Uralmash - drilling equipment, which is designer and producer of drilling rigs, units and original spare parts to drilling rigs. Dominant role in gain the confidence is employee qualification of "Zavyalovospezservice" Ltd , which oblige to instruct customer how to operate and train personnel when the company supply and assembling equipment. "Zavyalovospezservice" Ltd obtained such kind of certificates from OJSC Volzhskii Dizcl, JSC Izhneftemash, OJSC Reduktor.



"Never stay in a place" is the slogan of Viktor Bcliaev, General Director of "Zavyalovospezservice" Ltd , which he uses since he worked in ZGE. He proved how this motto affect, improving himself on the way of becoming top manager. In bad period

for the company, he could save not only staff resources and production facilities of ZGE, but increase it. The company management is not going to stop in that they achieved. They spend 40 % of benefits to develop company. Extends company production base, appear new vacancies for engineering personnel and drillers.

The most important indices of the production quality, which is produced by "Zavyalovospezservice" Ltd is getting of international quality certificate ISO 9001: 2001, and also certificates



of ecological and labor security in production. It will be stimulus for the further increasing of equipment sale.

The company extends permanently its business relationships in the Udmurt republic and outside. Recently "Zavyalovospezservice" Ltd became a member of Udmurt Commerce and Industry Chamber together with another developing companies.













**BRANCH IN IRAQ ADDRESS** LTD GROUP of COMPANIES "RUSGROUP MOSCOW" Iraq-Kurdistan-Erbil Al-Salam Street. POBox 140305 Tel. +964 750 789 29 14 +964 750 793 9712 +964 770 139 87 98

e-mail: rusgroup-2009@yandex.ru

