Engineering Flow Solutions

INTEGRATED SOLUTIONS FOR WATER & UTILITIES




HMS GROUP AT A GLANCE

HMS Group is the leading in Russia and CIS manufacturer or pumps, compressors, skid–mounted and modular process equipment for oil & gas, nuclear and thermal power generation, water supply & sewage disposal, and the other industries.

KEY FACTS & FIGURES

- HMS Group foundation: 1993
- Manufacturing facilities in Russia, CIS and Europe
- Extensive track record of the integrated projects for oil & gas and water & utilities
- Over 15,000 employees worldwide
- Representative offices in Turkmenistan, Uzbekistan, Kazakhstan, Iran, Italy, and UAE

For water supply and sewage disposal applications HMS Group offers its state-of-the-art, reliable and energy-efficient solutions at any level: from design engineering, manufacturing, and procurement of any main and auxiliary pumps and systems to realization of the integrated turnkey EPC projects.

RESEARCH & DEVELOPMENT

The contemporary R&D base of HMS Group is represented by the own engineering centers located in Russia, CIS and Europe with integrated management and application of the latest 3D design and flow modeling software based on SolidWorks, PumpLinx, ANSYS CFX and other platforms.

The HMS Group engineers cooperate closely with the customers and participate actively in the development of technical requirements as well as adjust the newest engineering solutions to the customer's process environment.

MANUFACTURING

The pumping equipment including all critical parts and components is manufactured at the HMS Group's factories equipped with up-to-date processing centers and NC machine tools by the leading manufacturers from Germany, Great Britain, and South Korea. The casing parts and impellers are fabricated at the large foundries equipped with the new molding lines and induction furnaces.

TESTING

The HMS Group production facilities have the unique equipment for in-situ testing of pumps and systems in accordance with the international standard ISO 9906:2012 Grade 2B requirements or by the special customer-approved methods within the following range of the main operating parameters:

- Capacity: up to 16,000 m^3/h
- Head: up to 4,200 m
- Drive power: up to 14,000 kW

SERVICE

The HMS Group customers are provided with a full range of related services for pumps & systems including installation & commissioning supervision, routine maintenance, repair and overhaul, supply of original spare parts, integrated retrofit, extended engineering and technical support.

STANDARDS & QUALITY

The companies of HMS Group engineer and manufacture the pumps for water supply and sewage disposal applications in a strict compliance with the Russian state standard (GOST) as well as in compliance with the main international standards: ISO, DIN EN, ANSI, NEMA.

MANUFACTURING ASSETS FOR WATER SUPPLY AND SEWAGE DISPOSAL APPLICATIONS

APOLLO GOESSNITZ GmbH (Goessnitz, Germany)

Manufacturing of sophisticated pumps and pumping systems for water & utilities, oil refining, gas processing, offshore oil & gas production platforms, thermal power plants, and other industrial applications

HMS LIVGIDROMASH (Livny, Russia)

Manufacturing of the pumping equipment for water supply & sewage disposal, oil & gas, thermal and nuclear power generation, shipbuilding and other industries

LIVNYNASOS (Livny, Russia)

Manufacturing of the borehole submersible pumps

PROMBURVOD (Minsk, Belarus)

Manufacturing of a wide range of the pumping equipment for water supply, sewage disposal, and agriculture applications

HMS GROUP FOR WATER SUPPLY AND SEWAGE DISPOSAL

- Technical audit
- Pumping equipment & systems design and manufacturing
- Factory and site acceptance in-situ tests
- Installation supervision and commissioning

– Pumps and systems from HMS Group

- Engineering, construction, and refurbishment of the water supply & sewage disposal facilities
- Complex procurement of the main and auxiliary equipment
- Maintenance, repair and general overhaul of equipment and process facilities
- Pumping systems retrofit in accordance with customer requirements

PUMPS FOR WATER SUPPLY

HMS Ciris borehole submersible pumps: new series

Intended for pumping of water with temperature below 30 °C from boreholes and reservoirs

Application

Industrial, residential, and rural water supply, pressure boosting, irrigation and firefighting, groundwater lowering systems

Q: up to 290 m^3/h **H**: up to 550 m

Design Features

- Casing parts, pump and motor shafts of stainless steel
- Impellers are made of polymer reinforced with stainless steel or completely of stainless steel (for 8" diameter pumps)
- 10" and 12" diameter pumps are completely made of stainless steel
- New DAP motor series with increased performance and durability

HMS FRS borehole submersible pumps: standard series

Intended for pumping of water with temperature below 30 °C from boreholes and reservoirs

Application

Industrial, residential, and rural water supply, pressure boosting, irrigation and firefighting, groundwater lowering systems

Q: до 250 m^3/h **H**: up to 420 m

Design Features

- Water-filled asynchronous electric motor with «Squirrel cage» made of copper
- Impellers and diffusers of stainless steel and polymer materials
- Built-in non-return valve

HMS DAP submersible sealed asynchronous electric motors

Intended to drive borehole submersible pumps of the HMS Ciris series and their analogs

Power: up to 130 kW

Speed: 3,000 rpm

Voltage: 50 Hz, 380/400V

Design Features

- Casing of stainless steel
- Spline or keyed shaft coupling
- NEMA flanges
- High temperature (PE2/PA) insulated winding wire (up to 100 °C)

PRODUCT RANGE

ZMD double suction pumps: new series

Intended for pumping of water with temperature up to 150 °C, with solids inclusions up to 0.2% of mass and up to 4 mm in size

Application

Water supply pumping stations, irrigation & firefighting systems, oil & gas, nuclear and thermal power plants processes

Q: up to 10,000 m^3/h **H**: up to 250 м

Advantages

- High energy efficiency and reliability
- Excellent suction capability (low NPSH)
- ISO/DIN/AISI flanges
- Gland or mechanical seals
- A wide range of material options including Duplex steel
- Vertical installation as a standard option

D and HMS DeLium double suction pumps: standard series

Intended for pumping of water with temperature up to 95 °C, with solids inclusions up to 0.05% of mass and up to 0.2 mm in size

Application

Water supply pumping stations, irrigation & firefighting systems, general industrial applications

Q: up to 12,500 m^3/h **H**: up to 125 m

Advantages

- Excellent suction capability (low NPSH)
- Gland or mechanical seals
- A wide range of material options

CN multistage pumps

Intended for pumping of water with temperature up to 100 °C, solids inclusions below 0.05% of mass, solids size up to 0.2 mm

Application

Water supply systems of industrial facilities and residential areas, agricultural irrigation and drainage systems

Q: up to 3,600 m^3/h **H**: up to 210 m

Design Features

Centrifugal two- or four-stage pumps with horizontally split volute type casing. The pumps are equipped with single-suction impellers. Gland or mechanical seals are optionally available

PUMPS FOR WATER SUPPLY

Kordis overhung pumps

Intended for pumping of water with temperature up to 120 °C, solid inclusions below 0.1% of mass, solids size up to 0.2 mm

Application

Process water supply and circulation units, water and heat supply of buildings, industrial facilities and utilities

Q: up to 2,000 m^3/h **H**: up to 150 m

Design Features

The pumps are supplied in overhung, and closed-coupled overhung version, including in-line nozzles arrangement. The pumps are equipped with gland or mechanical seal

K, 1K overhung pumps

Intended for pumping of water with temperature up to 105 °C, solids inclusions below 0.1% of mass, solids size up to 0.2 mm

Application

Water supply and centralized heating systems, general industrial application

Q: up to 290 m^3/h **H**: up to 80 m

Design Features

The pumps are equipped with gland seals of thermally expanded graphite, or single mechanical seals with friction pairs of compound materials

2K overhung pumps

Intended for pumping of water with temperature up to 120 °C, solids inclusions below 0.1% of mass and solids size up to 0.2 mm

Application

Hot & cold water supply systems as well as centralized heating systems at industrial facilities and residential areas

Q: up to 100 m^3/h **H**: up to 32 m

Design Features

Closed type impeller with radial blades; gland seals of thermally expanded graphite or single mechanical seals

PRODUCT RANGE

KM, 1KM overhung close–coupled pumps

Intended for pumping of water with temperature up to 85 °C, solids inclusions below 0.1% of mass, solids size up to 0.2 mm

Application

Water supply and centralized heating systems at industrial facilities and residential areas

Q: up to 200 m^3/h **H**: up to 80 m

Design Features

The pumps are supplied as a single unit coupled with a flanged electric motor; cast iron impellers and gland seals or mechanical seals are applied

CVK overhung centrifugal–vortex pumps

Intended for pumping of water with temperature up to 105 °C, solids inclusions below 0.01% of mass, solids size up to 0.05 mm

Application

Pressure boosting and water circulation units in water supply and centralized heating systems at industrial facilities and residential areas

Q: up to 23 m^3/h **H**: up to 160 m

Design Features

The vortex type impeller with inserts represents a high-pressure stage in the pump while the centrifugal type impeller provides cavitation-free operation of the high-pressure stage

CNSg, 1CNSg multistage pumps

Intended for pumping of water with temperature up to 105 °C, solids inclusions below 0.1% of mass, solids size up to 0.1 mm

Application

Hot water circulation units in the centralized water supply & heating systems at industrial facilities and residential areas; feed water supply to the steam boilers at small-size CHHPs

Q: up to 600 m^3/h **H**: up to 600 m

Design Features

Single-casing ring-section multistage pumps with in-line impellers and gland seals of thermally expanded graphite or mechanical seals. 1CNSg model is equipped with an inducer at the first stage

PUMPS FOR WATER SUPPLY

VK, VKS, VKO vortex pumps

Intended for pumping of water with temperature up to 85 °C, solids inclusions below 0.01% of mass, solids size up to 0.05 mm

Application

Water supply systems, general industrial processes

Q: up to 36 m^3/h **H**: up to 45 m

Design Features

The pumps are supplied with single or double mechanical seal. Self-priming pumps (VKS series) are equipped with a cap on a discharge nozzle or heating chamber (VKO series)

DNA diesel-driven pumping units

Intended for pumping of water with temperature up to 95 °C, solids inclusions up to 0.05% of mass, solids size up to 0.2 mm

Application

Emergency water supply, firefighting systems, agriculture

Q: up to 3,500 m^3/h **H**: up to 450 m

Design Features

The units are available in stationary, skid-mounted or truck-mounted version

BOOSTA automated pressure boosting systems

Intended for pumping of water with temperature up to 120 °C, solids inclusions up to 0.1% of mass, solids size up to 0.1 mm

Application

Pressure boosting and automatic pressure retention in the water supply systems at industrial facilities and residential areas

Q: up to 700 m^3/h **H**: up to 270 m

Design Features

The pressure boosting systems are equipped with vertical centrifugal multistage sectional pumps, valves, protection and control panels

PUMPS FOR SEWAGE DISPOSAL

SM overhung pumps

Intended for pumping of waste water with temperature up to 80 °C, solids inclusions up to 2% of mass, solids size up to 5 mm

Application

Waste water disposal and drainage systems, residential and industrial waste water treatment facilities

Q: up to 800 m^3/h **H**: up to 80 m

Design Features

The pumps are available in versions with gland or mechanical shaft seal

SD overhung pumps

Intended for pumping of waste water and other non-aggressive liquids with temperature up to 80 °C, gas content up to 5%, solid inclusions up to 2% of mass and size up to 5 mm

Application

Waste water disposal and treatment, drainage and sewage systems of industrial facilities and residential areas

Q: up to 800 m^3/h **H**: up to 80 m

Design Features

The pumps are equipped with a closed type impeller and a gland seal with supply of the barrier & cooling liquid

SMS overhung torque flow pumps

Intended for pumping of waste water and other non-aggressive liquids with temperature up to 90 °C, gas content in the pumped fluid no more than 5%, abrasive particles below 1% by weight and up to 5 mm in size (maximum concentration of the pumped media is 8%)

Application

Waste water disposal and treatment systems, drainage and sewage systems at industrial facilities and residential areas

Q: up to 200 m^3/h **H**: up to 60 m

Design Features

The pumps are equipped with a completely recessed open-type impeller and supplied with a gland seal

PUMPS FOR SEWAGE DISPOSAL

N1V single-screw horizontal pumps

Intended for pumping of water with temperature up to 85 °C, solids inclusions up to 5% of mass, solids size up to 2 mm

Application

Pumping of return sludge in waste water treatment facilities, sewage run-off at industrial facilities and residential areas

Q: up to 70 m^3/h **P**: up to 100 kgs/cm^2

Advantages

- Pumping of liquids within a wide range of viscosity, density and solids content
- Available application as a reversible pump
- A set of gear and variator to regulate the pump flow is optionally available

SVN overhung torque flow pumps

Intended for pumping of water with temperature up to 80 °C, with fibrous, solid and abrasive inclusions

Application

Pumping of waste water from industrial facilities and residential areas on sewage pumping stations and water treatment facilities

Q: up to 200 m^3/h **H**: up to 50 m

Design Features

- Open type impeller with radial blades
- Supplied with a gland seal

SVNM overhung torque flow close-coupled pumps

Intended for pumping of water with temperature up to 80 °C, with fibrous, solid and abrasive inclusions

Application

Pumping of waste water from industrial facilities and residential areas on sewage pumping stations and water treatment facilities

Q: up to 12.5 m^3/h **H**: up to 20 m

Design Features

The pumps are supplied on a common baseplate with a flanged electric motor and installed mechanical seal

PRODUCT RANGE

Burun PF single-screw submersible closed-coupled pumps

Intended for pumping of waste water and other liquids with temperature up to 35 °C (up to 70 °C for short durations), and solid/viscous inclusions up to 5% of mass, with solid particles size up to 2 mm and viscosity of liquids up to 2,000 mPa*s

Application

Rainwater and waste water disposal from cesspits, settlers and mud sumps, pumping of solutions and suspensions at water industry and utilities facilities, drainage and dewatering systems

Q: up to 1.8 m^3/h **P**: up to 4 kgs/cm^2

Advantages

- Casing and working parts material: stainless steel
- Guide tube made of elastomer with adjustable clamping ratio
- Supplied with mechanical seal

GNOM submersible drainage pumps

Intended for pumping of contaminated water with temperature up to 60 °C, solids content below 10% by mass and solids size below 5 mm

Application

Dewatering systems, drainage of reservoirs, open pits, collectors, water wells

Q: up to 100 m^3/h **H**: up 25 m

Advantages

- High efficiency
- Open type impeller of high durability material
- Stable parameters within entire operation range
- High reliability and simple maintenance
- Motor is separated from pump by the system of seals with oil chamber
- Stationary or portable installation with rigid or flexible pipeline

Sidus submersible sewage pumps

Pumping of waste water and other liquids with desity up to 1250 kg/m^3, pH values ranging from 5 to 12, solid inclusions size up to 160 mm and long fibered inclusions

Application

Pumping of waste water from industrial facilities and residential areas, storm waters, subway wastes, drainage of cesspits, settlers and mud sumps, dewatering systems

Q: up to 2,500 m^3/h **H**: up to 80 m

Advantages

- Dry or submersible installation
- Motor cooling with pumped liquid or cooling jacket
- Fast installation with automatic pipe coupling

PUMPING EQUIPMENT PROTECTION AND CONTROL SYSTEMS

HMS Control L2 panels for protection & control of a single pump

Intended for protection and control of a single pumping unit equipped with asynchronous electric motor

Features

- Pump motor power: up to 90 kW
- Manual, automatic or remote control
- Easy and flexible adjustment of operation modes and protection parameters
- Output dispatching signals

HMS Control L3 panels for protection & advanced control functions of a single pump

Intended for protection and control of a single borehole or submersible pump

Features

- Pump motor power: up to 132 kW
- Direct-on-line or soft start of a motor
- Manual, automatic or remote control
- Adjustable pump ON/OFF switch delay timer
- Output dispatching signals
- Consistent operation of several panels in a common hydraulic system

HMS Control L4 panels for protection & wireless control of a single pump

Intended for protection and remote control of a single borehole, submersible or surface installation pump

Features

- Pump motor power: up to 132 kW
- Direct-on-line or soft start of a motor
- Complex protection of pump, electric motor and hydraulic system
- Extended range of features for manual, automatic (by sensor signals) and remote control and monitoring of equipment:
  - RS-485/RS-232 interface, Modbus RTU
  - GSM/GPRS modem or 433 MHz radio band (option)
  - Pump control & status reports by SMS (Short Messaging Service) an option

PRODUCT RANGE

HMS Control ST protection & control panels for a set of surface installed pumps

Intended for protection and control of up to 4 surface installation or submersible pumps

Features

- Number of protected pumps: up to 4
- Motor power of each pump: up to 75 kW (higher power is optional)
- Cascade or cascade-frequency regulation with soft start of motors
- Extended range of features of manual, automatic and remote control
- Pump energy consumption decrease by 10-50%
- Reservation/equalization of the pumps running hours
- Connection of additional equipment, sensors and SCADA systems

HMS Control G protection & control panels for a single drainage pump

Intended for protection and control of a single submersible drainage pump by the signals from a liquids level sensor

Features

- Pump motor power: up to 5.5 kW
- Manual or automatic control
- Easy installation, adjustment and operation
- Front-panel operation mode indicators
- Automatic switch off the motor in case of short circuit or overheating

HMS Control PP remote monitoring panels for a pumping equipment

Sensors' signals collection, conversion, indication and further transmission for processing by the supervisory control and data acquisition system (SCADA)

Available sensor types

- Temperature: up to 12 pcs.
- Pressure: up to 2 pcs.
- Vibration: up to 10 pcs.
- Dry running: 1 pcs.

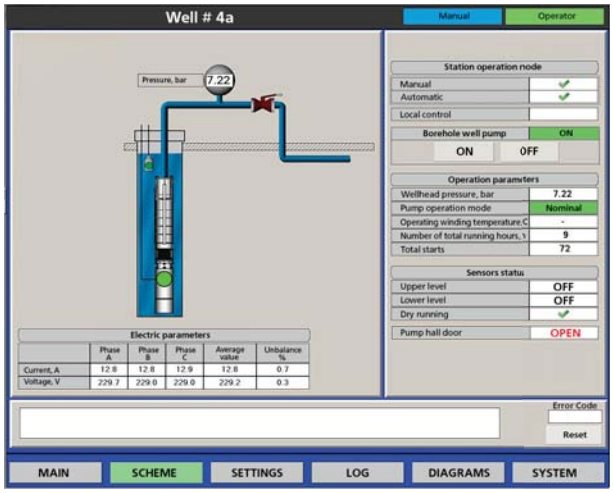
Features

- RS-485 standard support for a signal transmission
- Warnings and alarms in case of overrange/underrange of the process preset parameters

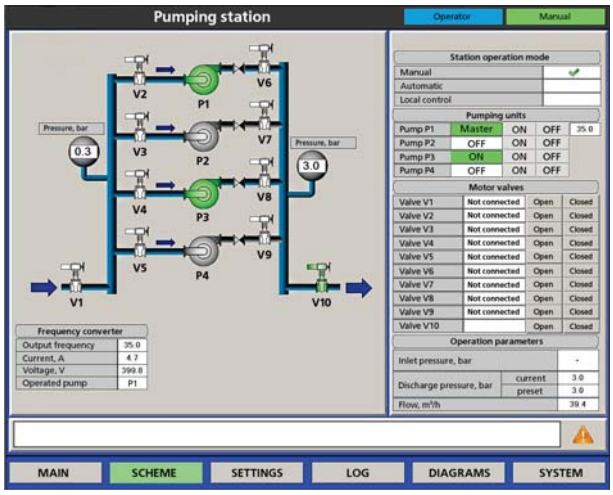
SCADA SYSTEMS

Pumps supervisory control and data acquisition system (SCADA) based on HMS Control series panels

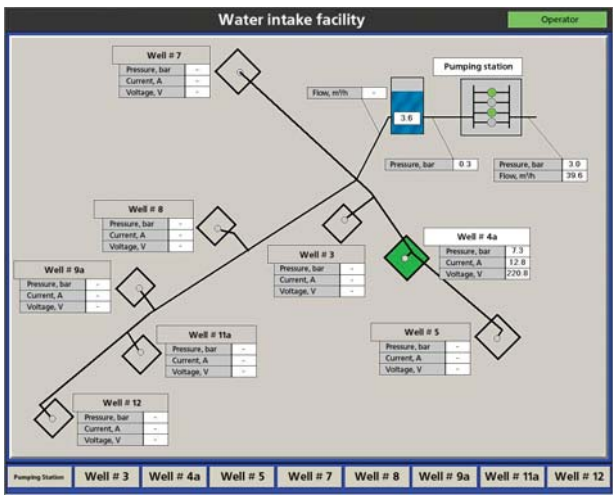
HMS Control L4



HMS Control ST



Site supervisory control system



Intended for complex supervisory control of water supply and sewage disposal facilities with automatic or supervisory control (including remote) of the process equipment

Supervised facilities

- Boreholes water intakes
- 2nd and 3rd stage pumping stations
- Water treatment systems
- Water storage tanks
- Pressure boosting stations
- Hydraulic engineering structures

Features

- Direct, remote and automatic equipment control
- Collection of real-time equipment status and process parameters
- Event logging and reporting on process systems operation
- Warning and alarm signals
- Security and fire alarms at facilities

Communication features

- Support of RS-485/RS-232 Modbus RTU
- Wireless radio channel 433 MHz
- GSM/GPRS modem

Advantages

- Real-time control
- Accurate control of operating parameter values
- Failures and alarms tracking, predictive prevention of abnormal operation and accidents
- Reduction of maintenance staff headcount
- Maintenance planning capability
- Automated collection, recording and analysis of equipment operating conditions and resources
- Reduction of energy consumption and operational expenses due to equipment optimal operation
- Optional connection of auxiliary process equipment

WATER SUPPLY & SEWAGE DISPOSAL FACILITIES: ENGINEERING AND CONSTRUCTION



HMS Group apply an integrated approach to the engineering, procurement and construction projects, as well as retrofit of the water supply and sewage disposal facilities and related hydraulic structures: from the site survey and early design stage to equipment commissioning and personnel training.

The engineering of the process facilities and hydraulic structures (especially in areas with severe geological and climatic conditions) are performed by a specialized institute – **Rostovsky Vodokanalproekt** (HMS Group), established in 1932.

According to the projects of the Institute over 5,000 water supply and sewage disposal facilities in cities, towns and industrial areas have been built and successfully operated over the years.

FACILITIES ENGINEERING

- Water supply and sewage disposal systems of industrial facilities and residential areas
- Pumping stations of potable water supply, sewage disposal, drainage and irrigation, waste water disposal
- Waste treatment plants of industrial enterprises and residential areas
- Water supply and sewage disposal mainline networks
- Water circulation and water cooling systems of industrial facilities
- Hydraulic engineering structures (surface and underground water intakes, dams, water storage basins, ponds and other facilities)

A dedicated team of HYDROMASHSERVICE – an integrated commercial company of HMS Group – performs the complex management of the EPC projects in accordance with the international project management standards.

PROJECT MAIN STAGES

1. Audit: site survey works, feasibility study, conceptual design
2. Consulting: development of the project road map in accordance with audit results and customer requirements
3. Process solutions development: feasibility study, preliminary design of the process systems
4. Design and working documentation development, projects schedule approval
5. Manufacturing of the key equipment and systems
6. Outsourcing of auxiliary equipment and systems
7. Complex procurement of equipment
8. Construction works supervision
9. Installation and commissioning supervision,
10. Customer personnel training
11. Comprehensive after-sales service
12. Retrofit of the pumping equipment and the process systems

HYDROMASHSERVICE remains solely responsible for the project implementation at all its stages.

INTEGRATED PROJECTS FOR WATER SUPPLY & SEWAGE DISPOSAL



Competencies and resources of the HMS Group companies provide an optimal system of the complex projects management to ensure timely and high-quality solution of the customer tasks that significantly increases efficiency of the implemented projects.

An extensive portfolio of various implemented projects allows realization of any complexity tasks, taking into account all the nuances and characteristics of each specific object, as well as guarantee the reliability and efficiency of the developed systems and process solutions and their compliance with sanitary and hygienic standards and applicable safety requirements

Project Management	Complex Procurement	After-Sales Service
■ Risk management	■ Basic & detailed engineering, as-build documentation	■ Technical audit and inspection
■ Works quality control	■ Main process equipment manufacturing	■ Site inspection by the equipment manufacturer's representatives
■ Meeting the deadlines	■ Outsourcing of auxiliary systems and equipment	■ Servicing on site or in service centers
■ Installation & commissioning management	■ Factory assembling	■ Supply of original spare pars
■ Building & construction supervision	■ Stress tests (optional)	■ Optimization and adjustment of process systems
■ Logistic support and supply chain optimization	■ Transportation to site of operation	■ Retrofit of the process equipment, facilities and structures
■ Production management	■ Installation & commissioning works	■ Complex automation of facilities including SCADA systems

REFERENCES: RUSSIA



PS–10, PS–13, PS–14 PUMPING STATIONS OF VORONEZH VODOKANAL COMPLEX PROCUREMENT OF PUMPING EQUIPMENT

Customer	RVK-Voronezh (Rosvodokanal Group)
Scope of works	Site audit Engineering, manufacturing, and supply of the process equipment Construction, installation and commissioning works Integrated automation of the process facilities
Supplied equipment	Pumping units based on a new double suction pumps series DeLium with electric motors and variable frequency drives Transformer electric substation Shut-off and control valves Automation and control systems
Pumping units technical data	▪ Capacity: up to 2,800 m^3/h ▪ Head: up to 57 m
Design features and advantages	The pumps are equipped with bearings' temperature and vibration control systems Electric motors are equipped with the control systems for bearing vibration and windings temperature
Result	Integrated retrofit of the process equipment at the pumping stations Automation of the facilities and adjustment of equipment operation in optimal modes Achieved energy savings of about 40% due to the smooth control of the pumping units performance using frequency converters
Comissioning	2016

REFERENCES: RUSSIA



LENINOGORSK WATER DISTRIBUTION FACILITY RETROFIT OF PUMPING STATION NO 2

Customer	Mosvodokanal
Scope of works	Site audit Engineering, manufacturing, and supply of the process equipment Construction, installation and commissioning works
Supplied equipment	Pumping units based on double suction pumps series D 3200-33-2 with electric motors (3 units)
Pumping units technical data	▪ Capacity: 2,500 m^3/h ▪ Head: 17 m
Design features and advantages	Pumps efficiency is increased by 2% due to a special hydrophobic coating applied by electroplating to the impellers and the inner surfaces of the casings
Result	The project was implemented as an energy-saving service contract at the expense of funds on lower electricity bills due to the new energy efficient pumping equipment at the station Reduced specific energy consumption of the pumping equipment from 146 kWh/m^3 down to 103.5 kWh/m^3 due to proper selection of pumps according to hydraulic system requirements Provided maximum efficiency and reliability of the pumping units due to the adjustment of their operation in optimal modes
Project duration	2014 – 2015

REFERENCES: RUSSIA



SOUTHERN WATER TREATMENT PLANT, VODOKANAL OF ST. PETERSBURG: COMPLEX PROCUREMENT OF PUMPING EQUIPMENT

St. Petersburg, Russia

The Southern Water Treatment Plant is the largest one in the city servicing the southern districts of St. Petersburg

Customer	Vodokanal of St. Petersburg
Scope of works	Site audit Engineering, manufacturing, and supply of the process equipment Installation supervision and commissioning
Supplied equipment	Pumping units based on the new series of the double suction pumps HMS DeLium with asynchronous electric motors and variable frequency drives ■ Capacity: 5,000 m^3/h ■ Head: 34 m
Pumping units design features & advantages	High energy efficiency due to variable frequency drives Improved operational reliability Perfect suction ability (low NPSH) Increased operational lifetime Simple installation and easy maintenance
Year of supply	2016

REFERENCES: RUSSIA



3RD LIFT PUMPING STATION AT NOVO–SAKMARSKY WATER INTAKE: COMPLEX PROCUREMENT OF PUMPING EQUIPMENT

Orenburg, Russia

The Novo-Sakmarsky water intake facility is one of the largest municipal water intakes providing centralized utility and drinking water supply in the city of Orenburg and neighboring residential areas

Customer	Orenburg Vodokanal (ROSVODOKANAL)
Scope of works	Site audit Engineering, manufacturing and supply of the process equipment Installation supervision and commissioning
Supplied equipment	Pumping units based on the new series of the double suction pumps HMS DeLium with asynchronous electric motors and variable frequency drives: ■ Capacity: 2,250 m^3/h ■ Head: 60 m Electric transformer substation Pump control and protection panels
Result	Maximum efficiency of the pumping units due to exact matching of their parameters and the hydraulic system characteristics Up to 30% energy saving due to smooth regulation of the pumping units capacity by the variable frequency drives Automatic retention of preset pressure in the pumping station output pipelines Decreased number of accidents, leaks, and water hammer in the water distribution system due to soft start/stop of the pumping units
Year of commissioning	2015

REFERENCES: RUSSIA



2ND LIFT PUMPING STATION AT KUMAK WATER INTAKE FACILITY: PUMPING EQUIPMENT RETROFIT

Orsk, Russia

The pumping stations at the Kumak Water Intake Facility provide utility and drinking water supply for the city of Orsk

Customer	Orsk Vodokanal (Russia)
Scope of works	Site audit Project engineering Equipment manufacturing and procurement Site installation and commissioning
Supplied equipment	Pump AD4000-95-2 with electric motor Power transformer KTPNT 1000-6/0.66 Variable Frequency Drive 710 kW, 690 V Pipes and fittings
Result	Maximum efficiency of the pumping unit operating with 630 kW electric motor (instead of 1,250 kW applied previously) due to correct pump selection by the hydraulic system requirements 40% energy saving due to VFD application and variable control of the pump rotation speed depending on the water supply demand Reduced number of water supply system accidents, leakages, and water hammer due to soft start/stop of the pumping unit
Year of commissioning	2013

REFERENCES: TURKMENISTAN



PUMPING STATIONS OF THE ZAHMET–TURKMENGALA MACHINE CHANNEL: ENGINEERING AND TURNKEY CONSTRUCTION

Mary Velayat, Turkmenistan

The Zahmet-Turkmengala machine channel is a complex hydraulic engineering structure that provides lifting of water by tens of meters over the water level in the Karakum channel to Hindu Kush water storage reservoir for irrigation and drinking water supply system for inhabited areas

Customer	Ministry of Water Resources of Turkmenistan
Scope of works	Design and exploration works Manufacture of main process equipment Purchase of utility systems Complex procurement of equipment Turnkey construction Installation supervision and commissioning
Pumping stations features	■ Total rated power: 40,000 kW ■ Total capacity: over 515,000 m^3/h
Site features	The stations are located in area with seismicity of up to 7 by MSK-64
Result	Reliable water supply was arranged for irrigation of about 45,000 hectares of the farmlands as well as utility and drinking water supply for a number of Mary Velayat inhabited areas
Year of commissioning	2014

REFERENCES: IRAQ



WATER TREATMENT FACILITY AT RUMAILA OILFIELD: COMPLEX REFURBISHMENT

Basra, Iraq

Qarmat Ali Water Treatment Facility supplies water for the injection systems at Rumaila oilfield

Customer	BP Iraq NV
Scope of works	Site audit Main equipment manufacturing Outsourcing of auxiliary equipment and systems Complex procurement of equipment Refurbishment and retrofit works Installation and commissioning Site acceptance tests
Supplied equipment	Water intake structure components 4 new 1-st lift main pumps 2 new 2-nd lift main pumps 10 new auxiliary pumps Pipeline elements and fittings Spare parts, tools and accessories
Result	Reliable and uninterrupted water supply was arranged for the water injection systems at Rumaila oilfield
Year of commissioning	Phased, within 2012 - 2014

REFERENCES: TURKMENISTAN



1ST PUMPING STATION OF YILGYNAGYZ WATER SUPPLY CHANNEL: ENGINEERING AND TURNKEY CONSTRUCTION

Lebap Velayat, Turkmenistan

The pumping station is a basis of a new hydrotechnical system of Turkmenistan that provides water supply for irrigation of farmlands and drinking water supply system for inhabited areas and industrial facilities

Customer	Ministry of Water Resources of Turkmenistan
Scope of works	Design and exploration works Manufacturing of main process equipment Outsourcing of auxiliary equipment and systems Complex procurement of equipment Turnkey construction Site installation and commissioning
Pumping station features	■ Capacity: 35 m^3/sec ■ Main pipelines diameter: DN 1000-1200
Site features	The station is located in area with seismicity of up to 8 by MSK-64
Result	The station provides reliable water supply for 31,000 hectares of irrigated farmlands, potash and cement plants, and numerous residential areas
Year of commissioning	2011

REFERENCES: UZBEKISTAN

SHUR–CHANNEL PUMPING STATION ENGINEERING AND TURNKEY CONSTRUCTION

Andijan Region, Uzbekistan

The Shur-Channel pumping station is a basis of a hydrotechnical system providing water supply for irrigation of numerous farmlands in Bukhara Region

Customer	Ministry of Agriculture and Water Resources of Uzbekistan
Scope of works	Design and exploration works Manufacturing of main process equipment Outsourcing of auxiliary equipment and systems Complex procurement of equipment Turnkey construction Site installation and commissioning
Constructed facilities	Pumping station Pressure pipeline with 1,200 mm diameter High-voltage substation and electric power line
Result	Reliable water supply was arranged for irrigation of about 100,000 hectares of the farmlands in a number of agricultural areas in the Bukhara Region
Year of commissioning	2006

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