HMS GROUP

Engineering Flow Solutions

- PUMPS
- COMPRESSORS
- OIL & GAS EQUIPMENT
- EPC & TURNKEY PROJECTS

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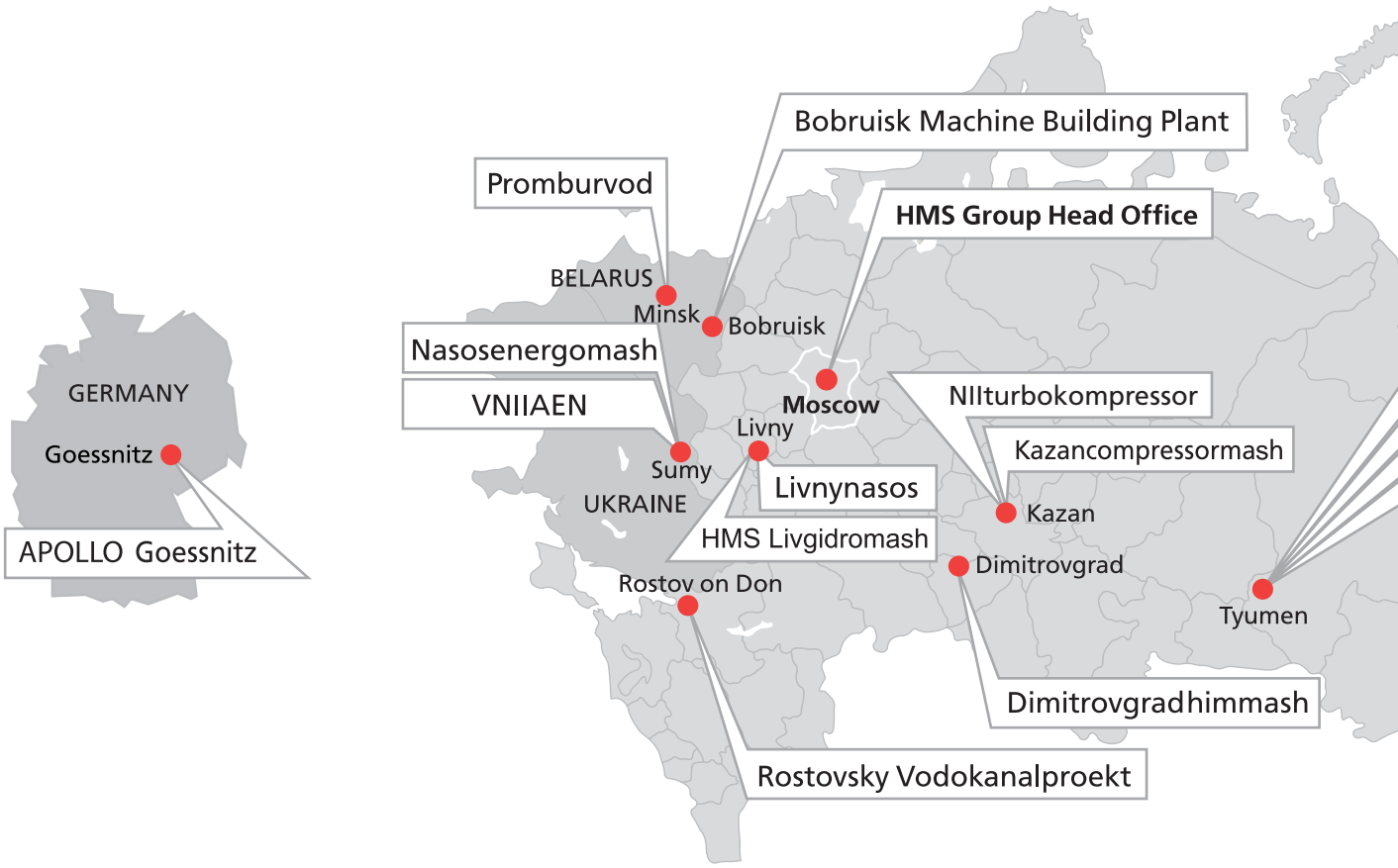


PUMPS

APOLLO Goessnitz GmbH, Goessnitz, Germany

Manufacturing pumps and systems for oil, gas and condensate upstream (including offshore), midstream, and downstream processes as well as thermal power applications

Nasosenergomash, Sumy, Ukraine

Manufacturing pumps for oil & gas, nuclear and thermal energy, water & utilities

Bobruisk Machine Building Plant, Bobruisk, Belarus

Manufacturing pumps for oil & gas processing, petroleum chemistry, mining industry, metallurgy and other industries

Promburvod, Minsk, Belarus

Manufacturing pumps for water & utilities and agriculture

HMS Livgidromash, Livny, Russia

Manufacturing a wide range of pumps for various industries

Livnynasos, Livny, Russia

Manufacturing borehole submersible centrifugal pumps for water & utilities

Dimitrovgradhimmash, Dimitrovgrad, Russia

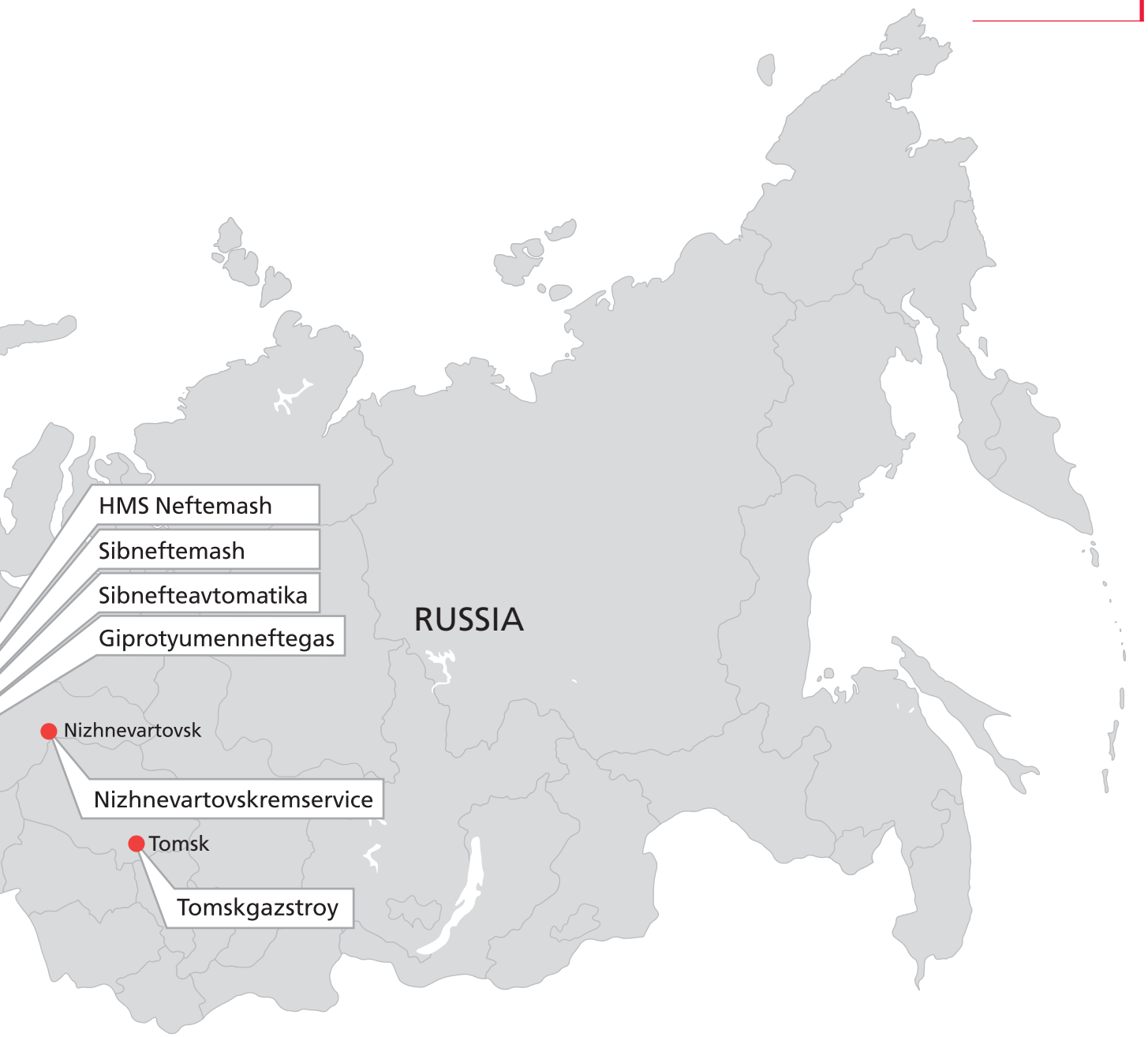
Manufacturing pumps, storage tanks, pressure vessels, separators and heat exchangers

Nizhnevartovskremservice, Nizhnevartovsk, Russia

Centrifugal pumps manufacturing as well as repair, retrofit and service of pumping and oilfield equipment

VNIIAEN, Sumy, Ukraine

R & D and design engineering works on pumping equipment for nuclear and thermal power plants



COMPRESSORS

Kazancompressormash, Kazan, Russia

Manufacturing compressors, gas compression systems and complete compressor stations for various industry applications

NIIturbokompressor, Kazan, Russia

The leading in Russia and CIS R&D institute of compressor equipment design engineering

OIL & GAS EQUIPMENT AND PROJECTS

HMS Neftemash, Tyumen, Russia

Manufacturing a wide range of skid-mounted and modular process equipment for oil & gas

Sibneftemash, Tyumen, Russia

Engineering and manufacturing of specialized oilfield equipment

Sibnefteavtomatika, Tyumen, Russia

Flow rate meters engineering and manufacturing

Giprotyumenneftegaz, Tyumen, Russia

Design engineering of oil, gas and condensate field facilities integrated development projects

Institute Rostovsky Vodokanalproekt, Rostov-on-Don, Russia

Design engineering of water supply & sewage disposal facilities as well as hydraulic engineering structures

CONSTRUCTION

Tomskgazstroy, Tomsk, Russia

Construction and retrofit of pipelines, oil and gas treatment and transportation facilities; oil & gas fields development structures

PUMPS

PUMPS FOR OIL & GAS

OIL, GAS AND GAS CONDENSATE UPSTREAM AND DOWNSTREAM

PROCESS PUMPS

KRH/KRHL, KRHA

Q: up to 5,000 m³/h
H: up to 390 m
T: up to 450 °C
P: up to 900 kW

Centreline-mounted, single-stage overhung pumps. Inducer is optionally available

Compliant with API 610/ISO 13709, type OH2

2NK

Q: up to 720 m³/h
H: up to 255 m
T: up to 400 °C
P: up to 630 kW

Centreline-mounted, single-stage overhung pumps. Inducer is optionally available

Compliant with API 610/ISO 13709, type OH2

2NKG

Q: up to 600 m³/h
H: up to 255 m
T: up to 250 °C
P: up to 400 kW

Centreline-mounted, single-stage overhung hermetic pumps with a magnetic coupling based on permanent magnets. Inducer is optionally available

Compliant with API 685

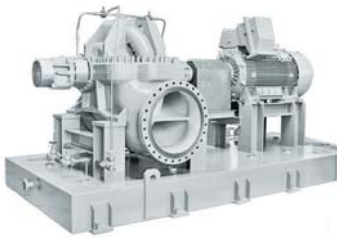
KRI/KRIL

Q: up to 600 m³/h
H: up to 320 m
T: up to 385 °C
P: up to 300 kW

Vertical, in-line, single-stage overhung pumps with separate bearing brackets

Compliant with API 610/ISO 13709, type OH3

ZMK/ZMKV



Q: up to 10,000 m³/h
H: up to 140 m
T: up to 150 °C
P: up to 3,000 kW

Axially split, single-stage, between-bearings pumps, with double-entry impeller. All material options in accordance with API 610 are available. The pump design ensures low NPSHr

Compliant with API 610/ISO 13709, type BB1

ZPR/ZPRA, NND

Q: up to 4,000 m³/h
H: up to 400 m
T: up to 450 °C
P: up to 2,500 kW

Radially split, single-stage, between-bearings pumps with double suction impeller

Compliant with API 610/ISO 13709, type BB2

KGR/KGRD

Q: up to 1,600 m³/h
H: up to 600 m
T: up to 400 °C
P: up to 1,700 kW

Radially split, two-stage, between-bearings pumps with back-to-back arranged impellers. Available with double-suction first stage impeller or with single/double-flow first stage inducer as an option

Compliant with API 610/ISO 13709, type BB2

AMG, NPS

Q: up to 3,800 m³/h
H: up to 2,400 m
T: up to 250 °C
P: up to 7,000 kW

Axially split, multistage, between-bearings pumps with back-to-back impellers arrangement. Replaceable rotors are optionally available to match the hydraulic performance required by the customer

Compliant with API 610/ISO 13709, type BB3

HP/GP, GMHD

Q: up to 1,400 m³/h
H: up to 2,600 m
T: up to 200 °C
P: up to 5,000 kW

Single-casing, radially split, multistage, ring-section, between-bearings pumps with in-line or back-to-back impellers arrangement. Single-flow or double-flow first stage inducer is optionally available. Supplied with single or double balance piston or hydraulic balancing disc

Compliant with API 610/ISO 13709, type BB4

CNSDp

Q: up to 1,840 m³/h
H: up to 2,800 m
T: up to 400 °C
P: up to 6,000 kW

Double-casing, radially split, multistage, ring-section, between-bearings pumps (barrel pumps) with back-to-back impellers arrangement. Supplied with the thermal barriers for high-temperature applications

Compliant with API 610/ISO 13709, type BB5

HB

Q: up to 1,528 m³/h
H: up to 650 m
T: up to 260 °C
P: up to 1,300 kW

Double-casing, radially split, multistage, ring-section, between-bearings pumps (barrel pumps) with in-line impellers arrangement. Supplied with the sleeve bearings with forced lubrication and mechanical seals

Compliant with API 610/ISO 13709, type BB5

TL/TG, TGDX

Q: up to 1,500 m³/h
H: up to 4,200 m
T: up to 450 °C
P: up to 5,000 kW

Double-casing, radially split, multistage, ring-section, between-bearings pumps (barrel pumps) with in-line or back-to-back impellers arrangement. Supplied with the first stage inducer with improved suction capabilities

Compliant with API 610/ISO 13709, type BB5

HPV/HPVX

Q: up to 600 m³/h
H: up to 600 m
T: up to 180 °C
P: up to 800 kW

Vet pit, vertically suspended, single-casing diffuser pumps with discharge through the column. Supplied with radial flow impellers with improved suction capabilities and the balance piston for axial forces compensation; bearings are lubricated and cooled by the pumped liquid. First stage suspended impeller is optionally available

Compliant with API 610/ISO 13709, type VS1

GLKV/GSTV, HPTV

Q: up to 3,000 m³/h
H: up to 1,400 m
T: up to 260 °C
P: up to 2,000 kW

Double-casing, diffuser, vertically suspended pumps with bearings lubricated and cooled by the pumped liquid or combined bearings with oil lubrication. Supplied with the balance piston for axial forces compensation. Single- or double-flow first stage inducers (including suspended ones) are optionally available

Compliant with API 610/ISO 13709, type VS6

GDV, GDTV

Q: up to 3,200 m³/h
H: up to 460 m
T: up to 160 °C
P: up to 2,000 kW

Vertical multistage single- or double-casing process pumps. Bearings lubricated and cooled with the pumped medium; balance piston. Single- or two-flow first stage impeller with or without inducer is optionally available

Compliant with API 610/ISO 13709, type VS1, VS6

AUXILIARY PROCESS PUMPS IN OIL, GAS AND GAS CONDENSATE UPSTREAM AND DOWNSTREAM

K-E, KM-E

Q: up to 100 m³/h
H: up to 55 m
T: up to 85 °C
P: up to 15 kW

Foot-mounted, single-stage overhung pumps; supplied with a single mechanical seal and auxiliary sealing ring or double mechanical seal. Available in close-coupled version (KM-E model)

Compliant with API 610/ISO 13709, type OH1

H, H-E

Q: up to 100 m³/h
H: up to 90 m
T: up to 120 °C
P: up to 45 kW

Foot-mounted, single-stage overhung pumps.
The flow path is made of corrosion-resistant stainless steel

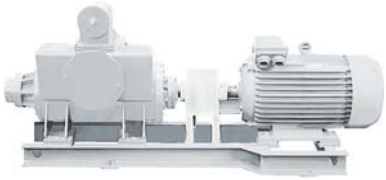
Compliant with API 610/ISO 13709, type OH1

2VV, 2VG

Q: up to 500 m³/h
Pressure: up to 63 bar
T: up to 100 °C
P: up to 800 kW

Twin-screw horizontal pumps. Available as multiphase (2VV model) or general industry applications version (2VG). Internal or external bearings are optionally available as well as casing heating jacket. Supplied with single or double mechanical seals

3V



Q: up to 500 m³/h
Pressure: up to 160 bar
T: up to 150 °C
P: up to 200 kW

Three-screw pumps in horizontal or vertical version. Supplied with single or double mechanical seals. Available options with internal or external bearings

NV-M

Q: up to 60 m³/h
H: up to 110 m
T: up to 80 °C
P: up to 45 kW

Vertically suspended, single-stage, axial entry pumps with open type impeller. The pumped liquid is discharged through a separate vertical pipe; the pump is supplied with double mechanical seal

Wet pit submersion depth: up to 6 m

NV-Mg

Q: up to 25 m³/h
H: up to 110 m
T: up to 250 °C
P: up to 37 kW

Vertically suspended, axial entry, hermetic pumps with a magnetic coupling based on permanent magnets; the pumps are supplied with one or two open/closed type impellers

Wet pit submersion depth: up to 6 m

VNCS

Q: up to 50 m³/h
H: up to 350 m
T: up to 80 °C
P: up to 110 kW

Vertically suspended, single-stage, axial entry pumps. The pumped liquid is discharged through a separate vertical pipe; the pump is supplied with double mechanical seal

Wet pit submersion depth: up to 6 m

UNDM-L

Q: up to 7,600 l/h
Pressure: up to 650 kgf/cm²
T: up to 200 °C
P: up to 7.5 kW

Membrane & plunger dosing pumping systems with metallic or teflon membranes and leak sensors. The flow path is made of stainless steel (including duplex) or nickel and titanium alloys. A modular version including several pumping units with a single drive is optionally available

Compliant with API 675

OIL, PETROLEUM PRODUCTS AND GAS CONDENSATE MIDSTREAM

TRUNK PIPELINE PUMPS

NM (type BB1)

Q: up to 13,000 m³/h
H: up to 470 m
T: up to 60 °C
P: up to 13,000 kW

Axially split, one-stage, between-bearings pumps with double entry impeller; replaceable flow paths are optionally available for specific customer requirements

Compliant with API 610/ISO 13709, type BB1

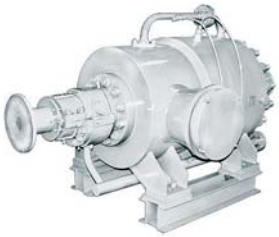
NM (type BB4)

Q: up to 900 m³/h
H: up to 1,000 m
T: up to 60 °C
P: up to 2,000 kW

Single- casing, radially split, ring-section, multistage, between-bearings pumps with in-line impellers arrangement; supplied with hydraulic balancing disc or balancing piston

Compliant with API 610/ISO 13709, type BB4

NM (type BB5)



Q: up to 1,500 m³/h
H: up to 800 m
T: up to 60 °C
P: up to 1,600 kW

Double casing, radially split, ring-section, multistage, between-bearings pumps with in-line impellers arrangement; supplied with hydraulic balancing piston

Compliant with API 610/ISO 13709, type BB5

AMG, NPS

Q: up to 3,800 m³/h
H: up to 2,400 m
T: up to 250 °C
P: up to 7,000 kW

Axially split, multistage, between-bearings pumps with back-to-back impellers arrangement. Replaceable flow paths are optionally available

Compliant with API 610/ISO 13709, type BB3

NMV

Q: up to 2,250 m³/h
H: up to 420 m
T: up to 50 °C
P: up to 2,000 kW

Double-casing, diffuser, vertically suspended pumps with in-line nozzles arrangement

Compliant with API 610/ISO 13709, type VS6

BOOSTER AND PRODUCT HANDLING PUMPS

NGPN-M

Q: up to 5,600 m³/h
H: up to 190 m
T: up to 85 °C
P: up to 2,000 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller. The pump design ensures low NPSHr. Inducers are optionally available

Compliant with API 610/ISO 13709, type BB1

20NDsN-M

Q: up to 3,600 m³/h
H: up to 80 m
T: up to 60 °C
P: up to 1,000 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller. The pump design ensures low NPSHr

Compliant with API 610/ISO 13709, type BB1

NCN-E

Q: up to 1,600 m³/h
H: up to 150 m
T: up to 80 °C
P: up to 600 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller. The pump design ensures low NPSHr

Compliant with API 610/ISO 13709, type BB1

ND

Q: up to 1,500 m³/h
H: up to 95 m
T: up to 85 °C
P: up to 250 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller. The pump design ensures low NPSHr

Compliant with API 610/ISO 13709, type BB1

NPV/NPV-M

Q: up to 6,000 m³/h
H: up to 150 m
T: up to 50 °C
P: up to 2,000 kW

Double-casing, volute, vertically suspended pumps with single-/double-flow first stage axial impeller. The pump design ensures low NPSHr

Compliant with API 610/ISO 13709, type VS7

HMS DeLium

Q: up to 10,000 m³/h
H: up to 250 m
T: up to 150 °C
P: up to 3,750 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller. The pump design ensures high efficiency and low NPSH. Available in a wide range of construction materials including duplex steel versions

PUMPS FOR OIL, PETROLEUM PRODUCTS AND OIL–CONTAINING MIXTURES DRAINAGE & STORAGE TANKS

NOU

Q: up to 50 m³/h
H: up to 800 m
T: up to 60 °C
P: up to 200 kW

Vertically suspended, ring-section, multistage pumps with in-line impellers arrangement and axial entry at the first stage. Outer casing (oil tank) is optionally available

Wet pit submersion depth: up to 4.6 m

12NA9x4

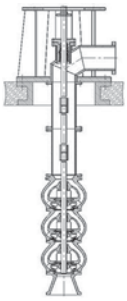
Q: up to 80 m³/h
H: up to 43 m
T: up to 80 °C
P: up to 14 kW

Wet-pit, vertically suspended, single-casing diffuser pumps with discharge through the column, with single-entry impellers. The pumps are installed on a storage tank flange or on a support plate

Wet pit submersion depth: up to 9.7 m

Compliant with API 610/ISO 13709, type VS1

20NV/24NV



Q: up to 1,200 m³/h
H: up to 65 m
T: up to 50 °C
P: up to 300 kW

Wet-pit, vertically suspended, single-casing diffuser pumps with discharge through the column, with single-entry axially balanced impellers and inducer

Wet pit submersion depth: up to 15 m

Compliant with API 610/ISO 13709, type VS1

NV/NV-M

Q: up to 60 m³/h
H: up to 110 m
T: up to 80 °C
P: up to 45 kW

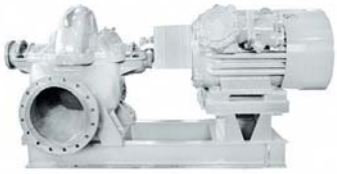
Vertically suspended, single-casing, volute, line-shaft-driven sump pumps with axial entry impeller. The pumped liquid is discharged through a separate vertical pipe

Wet pit submersion depth: up to 6.2 m

Compliant with API 610/ISO 13709, type VS4

AUXILIARY PROCESS PUMPS IN OIL, GAS AND GAS CONDENSATE UPSTREAM AND MIDSTREAM

CN, NDs, NDv



Q: up to 1,250 m³/h
H: up to 112 m
T: up to 85 °C
P: up to 290 kW

Axially split, one-stage, between-bearings pumps, with double-entry impeller

Compliant with API 610/ISO 13709, type BB1

VK, VKS

Q: up to 36 m³/h
H: up to 45 m
T: up to 85 °C
P: up to 27 kW

Vortex, single-stage overhung pump with single (version 1G) or double (version 2G) mechanical seals available as an option. Self-priming versions are equipped with a discharge cap mounted on a discharge nozzle (model VKS)

SH, NMSH, NMSHF, NMSHG

Q: up to 37,5 m³/h

Pressure:
up to 150 bar

T: up to 250 °C

P: up to 15 kW

Gear pumps with heating/cooling jacket available as an option (model NMSHG); could be supplied with flanged nozzles (model NMSHF)

PUMPS FOR OIL & GAS: SELECTED PROJECTS

MOBIN PETROCHEMICAL COMPLEX BANDAR ASSALUYEH (IRAN)
High-pressure boiler feed water pumps

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply
Skid-mounted pumping units based on API 610 compliant axially split, multistage, between-bearings pumps AMG-150/5-508/CN (type BB3): 2 units

Equipment supply: 2017

PORVOO OIL REFINERY (FINLAND)
Pumps for solvent de-asphalting unit and oil processing systems

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply
Pumping units based on API 610 compliant pumps with lube oil and seal supply systems on separate skids:
- Centreline-mounted single-stage overhung pumps (type OH2): 7 units
- Double-casing, radially split, multistage, between-bearings pumps (type BB5): 2 units

Equipment supply: 2016

ZUBAIR OIL FIELD (IRAQ)
Water injection booster pumps

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply
Skid-mounted pumping units based on API 610 compliant axially split, one-stage, between-bearings pumps ZMK-150/550-618/CN (type BB1): 7 units

Equipment supply: 2016

WEST QURNA–2 OIL FIELD (IRAQ)
Main pumps for water injection system

Scope of works: engineering, manufacturing, factory tests, delivery, installation supervision and commissioning

Scope of supply
Pumping units based on API 610 compliant pumps for water injection system:
- Double-casing, radially split, multistage, between-bearings pumps CNSDp 240-1422 (type BB5): 7 units
- Axially split, between-bearings pumps ZMK-400/700-618/CN (type BB1): 2 units

Equipment supply: 2015

KRAKEN OFFSHORE OIL FIELD (NORWAY)
Pumps for floating production, storage and offloading vessel process systems

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply

Skid-mounted pumping units based on API 610 compliant pumps:
- Centreline-mounted, single-stage overhung pumps (type OH2): 2 units
- Radially split, one-stage, between-bearings pumps (type BB2): 3 units

Equipment supply: 2015

RUMAILA OIL FIELD (IRAQ)
Water treatment facility for water injection system

Customer: BP Iraq NV

Scope of works: site audit, manufacturing, complex procurement, equipment repair and retrofit, installation supervision and commissioning, acceptance tests

Scope of supply
Pumping equipment with spare parts and expendables:
- 4 main pumps D 6300-27
- 2 main pumps CN 3000-197
- 10 auxiliary pumps
- Water intake structure components, piping & fittings, auxiliaries

Commissioning (phased): 2012 – 2014

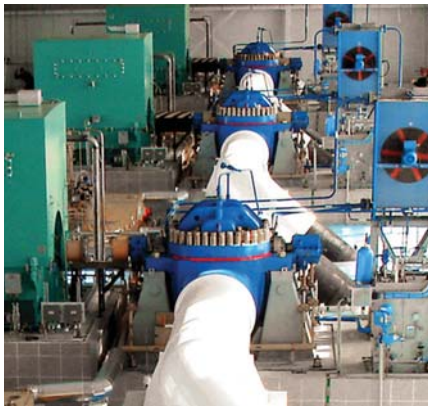
MOSCOW REFINERY (RUSSIA)
Pumps for sulfurous-alkaline drains treatment unit and catalytic cracking unit

Customer: Gazprom Neft

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply
Pumping units based on API 610 compliant pumps:
- Centreline-mounted single-stage overhung pumps (type OH2): 11 units
- Radially split, one- and two-stage, between-bearings pumps (type BB2): 6 units
- Single-casing, radially split, multistage, between-bearings pumps (type BB4): 3 units
- Double-casing, diffuser, vertically suspended pumps (type VS6): 4 units

Equipment supply: 2016



ESPO–1 and ESPO–2 OIL PIPELINES (RUSSIA)
Trunk pipeline pumping units for oil pumping stations

Customer: Transneft

Scope of works: engineering, manufacturing, factory tests, delivery, installation supervision and commissioning, personnel training, integrated maintenance

Scope of supply
- Pumping units based on API 610 compliant axially split, one-stage, between-bearings pumps (type BB1):
  - NM 10000-380-2: 20 units
  - NM 10000-250-3: 16 units
  - NM 7000-250: 12 units
- Auxiliary equipment: 490 units

Project duration: 2010 – 2013

PUMPS FOR NUCLEAR POWER PLANTS

FEED WATER PUMPS

PEA

Q: up to 2,500 m³/h
H: up to 980 m
T: up to 200 °C
P: up to 8,000 kW

Single- or double-casing, radially split, multistage, between-bearings pumps with in-line arranged impellers and mechanical seals

PTA 3750

Q: up to 3,750 m³/h
H: up to 860 m
T: up to 200 °C
P: up to 9,603 kW

Turbine-driven, double-casing, radially split, multistage, between-bearings pumps with in-line arranged impellers and mechanical seals

PTA 3800

Q: up to 3,800 m³/h
H: up to 170 m
T: up to 200 °C
P: up to 1,826 kW

Turbine-driven, radially split, between-bearings pumps with double entry impellers and mechanical seals

CONDENSATE PUMPS

KsVA

Q: up to 2,500 m³/h
H: up to 250 m
T: up to 200 °C
P: up to 1,600 kW

Vertically suspended, double-casing, ring-section multistage pumps with gland or mechanical seals

Ks, 1Ks

Q: up to 80 m³/h
H: up to 155 m
T: up to 160 °C
P: up to 75 kW

Single-casing, radially split, multistage, between-bearings pumps with in-line arranged single-entry impellers and gland or mechanical seals

SAFETY SYSTEMS PUMPS

CNSA

Q: up to 1,000 m³/h
H: up to 250 m
T: up to 150 °C
P: 630 kW

Double-casing, radially split, multistage, between-bearings pumps with in-line impellers arrangement; supplied with the first stage inducer and mechanical seals

CNA

Q: up to 250 m³/h
H: up to 1,800 m
T: up to 150 °C
P: 1,000 kW

Double-casing, radially split, multistage, between-bearings pumps with in-line arranged impellers and mechanical seals

CNR

Q: up to 5,000 m³/h
H: up to 230 m
T: up to 100 °C
P: 1,000 kW

Axially split, between-bearings pumps with double-entry impellers and mechanical seals

LUBE OIL SUPPLY SYSTEM PUMPS

MV

Q: up to 60 m³/h
H: up to 500 m
T: up to 105 °C
P: 200 kW

Vertically suspended, three-stage, ring-section pumps with single-entry impellers; supplied with shaft neck ring, bottom sleeve bearing and top roller bearing

MKV

Q: up to 550 m³/h
H: up to 37 m
T: up to 105 °C
P: 75 kW

Vertically suspended, single-stage, volute pumps with single-entry impeller; supplied with shaft neck ring, bottom sleeve bearing and top roller bearing

SE

Q: up to 5,000 m³/h
H: up to 200 m
T: up to 180 °C
P: 3,150 kW

Axially split, one- or two-stage between-bearings pumps with volute casing and double-entry impeller; supplied with gland or mechanical seals

1CNA

Q: up to 800 m³/h
H: up to 1,300 m
T: up to 160 °C
P: 500 kW

Foot-mounted, single-stage overhung pumps with axial entry impeller; supplied with single or double cartridge type mechanical seals and stainless or carbon steel flow path elements

H, AS-H

Q: up to 135 m³/h
H: up to 125 m
T: up to 120 °C
P: 110 kW

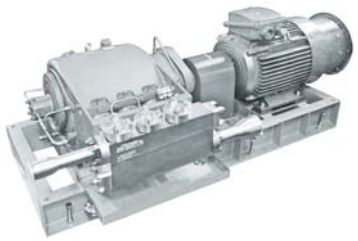
Foot-mounted, single-stage overhung pumps with closed-type impeller and corrosion-resistant stainless steel flow path; supplied with single or double mechanical seal with external cooling

AS-VK, AS-VKS

Q: up to 2 m³/h
H: up to 26 m
T: up to 85 °C
P: up to 4 kW

Vortex, single-stage overhung pumps with single or double mechanical seal. Self-priming models are supplied with a discharge cap mounted on a discharge nozzle (model AS-VKS)

AS-3LPNA



Q: up to 14,5 m³/h
Discharge pressure: up to 255 bar
T: up to 105 °C
P: up to 250 kW

Horizontal three-plunger, crank-shaft electric-driven pumping units with adjustable capacity. Supplied with a reducing gearbox built in the pump drive section

1CNSg

Q: up to 320 m³/h
H: up to 600 m
T: up to 105 °C
P: up to 800 kW

Single-casing, ring-section multistage pumps with in-line impellers arrangement. Supplied with the first-stage inducer and gland seals based with thermal-expanded graphite. Mechanical seals are optionally provided

PUMPS FOR NUCLEAR POWER PLANTS: SELECTED PROJECTS

TIANWAN NUCLEAR POWER PLANT (CHINA)

Power Units No 1, No 2, No 3, No 4

Customer: Jiangsu Nuclear Power Corporation and China Nuclear Energy Industry Corporation

Scope of works: equipment manufacturing, supply, installation supervision and commissioning

Scope of supply

- 16 pumping units ACNA 150-60 and 32 pumping units ANCSA 750-140a for power plant safety systems
- 24 pumping units for process water circulation in a cooling system of essential equipment

Equipment supply: 2003 – 2004, 2015 – 2016

NOVOVORONEZH NUCLEAR POWER PLANT (RUSSIA)

Power Unit No 1, No 2

Customer: Concern Rosenergoatom

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply

- 10 main feed water pumping units APEA 1840-80
- 6 condensate transfer pumping units AKsVA 650-135

Equipment supply: 2010 – 2016

ROSTOV NUCLEAR POWER PLANT (RUSSIA)

Power Unit No 1, No 2, No 3, No 4

Customer: Engineering company ASE for Concern Rosenergoatom

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply

- 12 complete feed water pumping units PTA 3750-75 and PTA 3800-20
- 30 condensate transfer pumps AKsVA and AKsV
- Over 100 pumping units ACNA for power plant safety systems and pumping units AMV, AMKV, AD, ASE, AS-NMSH, 1CNA for auxiliary systems

Equipment supply: 2009 – 2016

LENINGRAD NUCLEAR POWER PLANT – 2 (RUSSIA)

Power Units No. 1 and No 2

Customer: Concern Rosenergoatom

Scope of works: engineering, manufacturing, supply of equipment

Scope of supply

- 14 feed water pumps APEA 1840-80 and APEA 250-80
- 8 condensate transfer pumps AKsVA 650-135 and AKsV 125-55
- 8 pumping units ACNA 150-60 and 8 ACNSA 750-140 for safety systems

Equipment supply: 2013 – 2016

PUMPS FOR THERMAL POWER PLANTS

FEED WATER PUMPS

PE

Q: up to 720 m³/h
H: up to 2,300 m
T: up to 180 °C
P: up to 5,000 kW

Single- or double-casing, radially split, multistage, between-bearings pumps with in-line impellers arrangement and hydraulic balancing disc; supplied with mechanical seals. Hydraulic coupling or variable speed drive is optionally available

PE 560-315-1, PE 600-300-4, PTN 1150-150

Q: up to 1,150 m³/h
H: up to 3,500 m
T: up to 180 °C
P: up to 12,500 kW

Double-casing, radially split, multistage, between-bearings pumps with in-line impellers arrangement; supplied with a balance piston or hydraulic balancing disc and mechanical seals. Hydraulic coupling or variable speed drive is optionally available

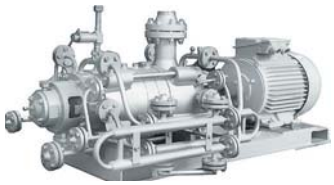
PD

Q: up to 1,660 m³/h
H: up to 194 m
T: up to 177 °C
P: up to 954 kW

Radially or axially split, one-stage, between-bearings pumps with double-entry impeller; driven by electric motor or turbine (model PD 1600-180-2)

CONDENSATE PUMPS

Ks



Q: up to 80 m³/h
H: up to 155 m
T: up to 160 °C
P: up to 55 kW

Single-casing, radially split, multistage, between-bearings pumps with in-line arranged single-entry impellers and hydraulic balancing disc; supplied with gland packing or mechanical seal

KsV

Q: up to 2,200 m³/h
H: up to 260 m
T: up to 150 °C
P: up to 630 kW

Vertically suspended, double-casing, ring-section multistage pumps in-line impellers arrangement; supplied with gland packing or mechanical seal

1KsV

Q: up to 320 m³/h
H: up to 220 m
T: up to 160 °C
P: up to 250 kW

Vertically suspended, single-casing, multistage, ring-section pumps with high-speed and low-speed rotors with turbine and booster impellers; supplied with double mechanical seals

KsD

Q: up to 230 m³/h
H: up to 140 m
T: up to 150 °C
P: up to 160 kW

Axially split, three-stage, between-bearings pumps with semi-volute inlet and volute outlet, double suction impeller at the first stage; supplied with a gland packing

KO, 2KO, 3KO

Q: up to 200 m³/h
H: up to 160 m
T: up to 160 °C
P: up to 75 kW

Foot-mounted, one-, two- or three-stage overhung pumps with axial entry impeller; supplied with a gland packing

KOSH, 2KOSH

Q: up to 125 m³/h
H: up to 140 m
T: up to 160 °C
P: up to 75 kW

Foot-mounted, one- or two-stage overhung pumps with axial entry impeller; supplied with inducer and gland packing

MAIN PIPELINE PUMPS

SE

Q: up to 5,000 m³/h
H: up to 200 m
T: up to 180 °C
P: 3,150 kW

Axially split, single- or two-stage, volute casing, between-bearings pumps with double-entry impeller; supplied with a gland packing or mechanical seals

PUMPS FOR THERMAL POWER PLANTS: SELECTED PROJECTS

DESALINATION PLANT (UNITED ARAB EMIRATES)

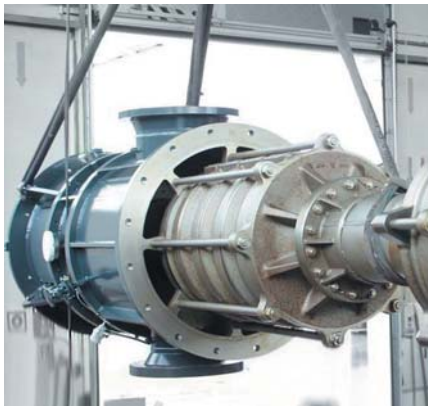
Scope of works: equipment engineering, manufacturing and supply

Scope of supply
Fuel oil supply system skid-mounted pumping units based on API 610 compliant centreline-mounted single-stage overhung pumps (type OH2): 14 units

- Capacity: up to 350 m^3/h
- Head: up to 80 m

Auxiliary systems including filters, flow meters, accumulators and other equipment

Equipment supply: 2016



OZMEN–1 GEOTHERMAL POWER PLANT (TURKEY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply
ORC power unit n-Butane circulation pumps GSTV-300I/1+4-305/CN with auxiliary systems and components: 3 units

- Capacity: 111 m^3/h
- Head: 419 m

Equipment supply: 2016

WIRYE COMBINED HEAT & POWER PLANT (SOUTH KOREA)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply
Deaerator condensate skid-mounted pumping units based on GH-125C1/4-508/CN pumps with measuring devices, cooling systems, pressure gauges and junction boxes for measuring points: 3 units

- Capacity: 383 m^3/h
- Head: 348,4 m

Equipment supply: 2016

NIEHL–3 COMBINED HEAT & POWER PLANT (GERMANY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply
Two pumping units based on KRH-100/180-308/CN for hot water supply in the district heating system

- Capacity: up to 129 m^3/h
- Head: up to 25 m

Equipment supply: 2014

PUMPS FOR STEEL AND MINING

PUMPS FOR HYDRAULIC DESCALING

CNS, CNSz

	**Q**: up to 1,000 m³/h **H**: up to 2,400 m **T**: up to 60 °C **P**: 5,000 kW	Single-casing, radially split, multistage, between-bearings pumps with in-line impellers arrangement; supplied with a gland or mechanical seals. Thrust bearing is optionally available (model CNSz) **Compliant with API 610/ISO 13709, type BB4**

PUMPS FOR SLURRIES AND ABRASIVES

HDP

	**Q**: up to 8,000 m³/h **H**: up to 100 m **T**: up to 80 °C **P**: up to 3,200 kW	Double-casing, one-stage, overhung pumps; supplied with a gland or mechanical seals. Inner casing is made of Ni-resist cast iron with rubber or polyurethane lining

Gr (A,K), GrU, GrAU, GrAK, GrAR

	**Q**: up to 3,000 m³/h **H**: up to 80 m **T**: up to 120 °C **P**: up to 1,000 kW	Single-casing, one-stage, overhung pumps; supplied with a gland seal. Flow path is made of steel or Ni-resist cast iron with rubber or polyurethane lining

GrT, GrAT

	**Q**: up to 5,000 m³/h **H**: up to 120 m **T**: up to 80 °C **P**: up to 1,600 kW	Double-casing, one-stage overhung pumps; supplied with a stuffing box. Inner casing is made of Ni-resist cast iron, rubber or polyurethane lining

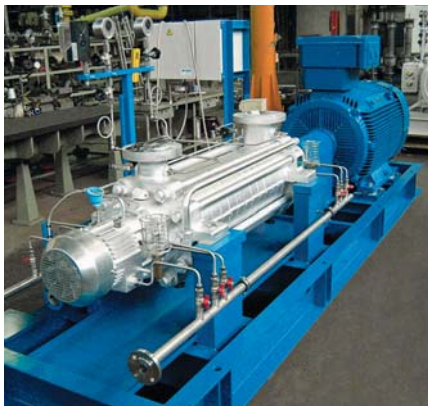
PR

	**Q**: up to 65 m³/h **H**: up to 25 m **T**: up to 70 °C **P**: up to 15 kW	Single-casing, one-stage, overhung pumps with a gland seal and rubber or polyurethane lining of the flow path

PRVP

	**Q**: up to 130 m³/h **H**: up to 60 m **T**: up to 70 °C **P**: up to 75 kW	Vertical, single-casing, one-stage semi-submersible pumps. The pumped media is supplied through protective grid on the top (model PVP) or through the axial entry suction nozzle (model PRVP); rubber or polyurethane lining of the flow path is optionally available

PUMPS FOR STEEL AND MINING: SELECTED PROJECTS



KALISCHACHT POTASH MINING SONDERSHAUSEN (GERMANY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply

A high-pressure pumping unit based on horizontal multistage pump GP-100C/6-608/S2 with back-to-back impellers layout designed for brine conveyance at potash mining

- Capacity: up to 120 m^3/h
- Head: up to 760 m

Equipment supply: 2016

ABS CARGNACCO STEEL PLANT (ITALY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply

2 heat recovery system circulation pumping units based on KRH-200/400-508/CN pumps (API 610, OH2 type) with cooling systems and personnel thermal protection covers

- Capacity: up to 400 m^3/h
- Head: up to 45 m

Equipment supply: 2013

MIRNY, NYURBA, AND AIKHAL MINING AND PROCESSING DIVISIONS (YAKUTIA, RUSSIA)

Customer: ALROSA

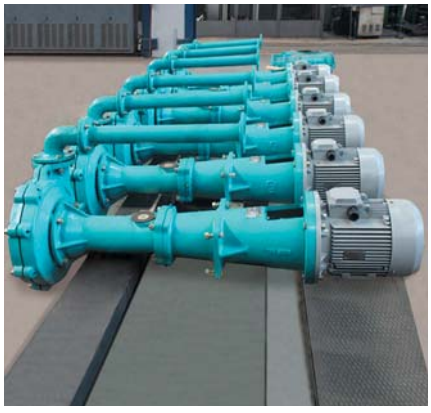
Scope of works: equipment manufacturing and supply

Scope of supply

15 pumping units of the GrAT series with electric motors for diamond-containing slurries hydraulic transport

- Capacity: up to 1,800 m^3/h
- Head: up to 67 m

Equipment supply (phased): 2016-2017



POTASH FERTILIZERS PRODUCTION COMPLEX (REPUBLIC OF BELARUS)

Customer: BELARUSKALI

Scope of works: equipment manufacturing and supply

Scope of supply

Over 70 pumping units of the GrAU, GrT, GrAK, GrA, GrAT, PRVP, PKVP series for pumping 30% potassium chloride solutions with clay and sand mixtures in ore processing

- Capacity: up to 1,400 m^3/h
- Head: up to 40 m

Equipment supply (phased): 2015-2017

PUMPS FOR WATER AND UTILITIES

BOREHOLE WATER INTAKES

HMS Ciris

Q: up to 280 m³/h
H: up to 550 m
T: up to 30 °C
P: up to 130 kW

Borehole submersible multistage pumps with stainless steel casings. The impellers and diffusers are made of polymer or stainless steel (for 10 and 12 inch pumps). Supplied with submersible hermetic electric motors of the DAP series

Available size range: from 6 to 12 inches

HMS FRS

Q: up to 250 m³/h
H: up to 420 m
T: up to 30 °C
P: up to 130 kW

Borehole submersible multistage pumps with carbon steel casings. Impellers and diffusers are made of high quality plastic or stainless steel (for models over 8 inches). Supplied with submersible electric motors of PEDV or DAP series

Available size range: from 4 to 12 inches

WATER SUPPLY AND HEATING SYSTEMS

HMS DeLium

Q: up to 10,000 m³/h
H: up to 250 m
T: up to 150 °C
P: up to 3,750 kW

Axially split, one-stage, between-bearings pumps with double-entry impeller. The pump design ensures high efficiency and low NPSH. Available in a wide range of construction materials including duplex steel versions

D/1D/2D

Q: up to 12,500 m³/h
H: up to 125 m
T: up to 95 °C
P: up to 2,000 kW

Axially split, one-stage, between-bearings pumps with double-entry impeller, with semi-volute inlet and volute outlet; supplied with gland or mechanical seals

CN

Q: up to 3,200 m³/h
H: up to 220 m
T: up to 100 °C
P: up to 1,000 kW

Axially split, two- or four-stage between-bearings pumps; supplied with gland or mechanical seals

Kordis

Q: up to 2,000 m³/h
H: up to 160 m
T: up to 120 °C
P: up to 500 kW

Single-stage overhung end-suction pumps. Available in close-coupled version including the one with in-line nozzles arrangement. Supplied with gland or mechanical seals

K/1K/2K

Q: up to 200 m³/h
H: up to 90 m
T: up to 120 °C
P: up to 55 kW

Foot-mounted, single-stage overhung pumps with axial entry impeller; supplied with a gland seal of expanded graphite gasket, compound-based rings seal (model 2K) or single mechanical seal

KM/1KM

Q: up to 240 m³/h
H: up to 80 m
T: up to 105 °C
P: up to 45 kW

End-suction overhung monoblock pumps mounted with a flanged electric motor; supplied with cast iron impellers and gland or mechanical seal

CVK

Q: up to 23 m³/h
H: up to 160 m
T: up to 105 °C
P: up to 29 kW

Foot-mounted, overhung vortex or centrifugal pumps with a suction inducer, gland or mechanical seal

CNSg/1CNSg/CNSv

Q: up to 320 m³/h
H: up to 600 m
T: up to 105 °C
P: up to 800 kW

Radially split, multistage, between-bearings pumps with in-line impellers arrangement. 1CNSg model is supplied with inducer. Available with gland or mechanical seals. CNSv model (vertical version) is supplied with gland seal

DNA

Q: up to 3,500 m³/h
H: up to 450 m
T: up to 95 °C
P: up to 800 kW

Diesel driven pumping units supplied with axially split, single-stage, between-bearings pumps or with foot-mounted, single-stage overhung pumps coupled with a diesel motor through the gear box or power takeoff shaft. Available in stationary, skid-mounted or truck-mounted versions

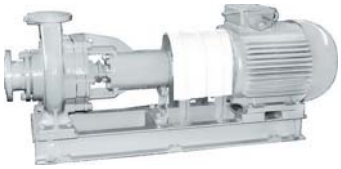
SEWAGE DISPOSAL SYSTEMS

SM

Q: up to 800 m³/h
H: up to 80 m
T: up to 80 °C
P: up to 250 kW

Foot-mounted, single-stage overhung pumps with axially balanced closed-type impeller; supplied with cooled gland seal or mechanical seal

SMS



Q: up to 200 m³/h
H: up to 60 m
T: up to 90 °C
P: 46 kW

Foot-mounted, single-stage, overhung vortex pumps with gland seal

SVN

Q: up to 200 m³/h
H: up to 50 m
T: up to 80 °C
P: up to 75 kW

Foot-mounted, single-stage, overhung vortex pumps with open type impeller bearing radial type vanes; supplied with a gland seal

SVNM

Q: up to 12,5 m³/h
H: up to 20 m
T: up to 80 °C
P: 2.2 kW

End-suction overhung monoblock pumps mounted with a flanged electric motor; supplied with mechanical seal

GNOM

Q: up to 100 m³/h
H: up to 25 m
T: up to 60 °C
P: 11 kW

Single-stage, close-coupled submersible drainage pumps for handling contaminated liquids

CMF

Q: up to 160 m³/h
H: up to 80 m
T: up to 35 °C
P: 77 kW

Single-stage, close-coupled submersible pumps with sealed motor and four-channel closed-type impeller. Electric motor is separated from a pump with oil chamber with double mechanical seal

PUMPS FOR WATER AND UTILITIES: SELECTED PROJECTS

PUBLIC UTILITY ERFURT (GERMANY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply

A pumping unit based on ZMD-200/560B-100/S2 axially split between-bearings pump for water supply in the district public utilities system

- Capacity: up to 710 m^3/h
- Head: up to 90 m

Equipment supply: 2016

DEN HAAG DISTRICT HEATING SYSTEM (NETHERLANDS)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply

A pumping unit based on ZMLK-250/620-308/CN axially split between-bearings pump for hot water supply in the district heating system

- Capacity: up to 1250 m^3/h
- Head: up to 115 m

Equipment supply: 2016

NIEHL–3 COMBINED HEAT & POWER PLANT (GERMANY)

Scope of works: equipment engineering, manufacturing and supply

Scope of supply

- Centreline-mounted single-stage overhung pumps (type OH2): 7 units
- Double-casing, diffuser, vertically suspended pumps (type VS6): 2 units
- Horizontal, single-stage volute casing pump: 4 units
- Horizontal, multistage process pump with axial inlet and special NPSH impeller: 2 units

Equipment supply: 2014

SOUTHERN WATER TREATMENT PLANT (ST. PETERSBURG, RUSSIA)

Customer: Vodokanal of St. Petersburg

Scope of works: site audit, engineering, manufacturing and supply of equipment , installation supervision and commissioning

Scope of supply

Pumping units based on the double suction pumps HMS DeLium with asynchronous electric motors and variable frequency drives

- Pumping units DeLium D 700-1000A (3 units)
- Pumping units DeLium D 600-720 (2 units)

Equipment supply: 2016

PUMPING STATIONS No. 10, 13, 14 OF VORONEZH VODOKANAL (VORONEZH, RUSSIA)

Customer: RVK-Voronezh (Rosvodokanal Group)

Scope of works: engineering, manufacturing and supply of equipment, construction, installation and commissioning works supervision

Scope of supply

- Pumping units based on the double suction pumps HMS DeLium with asynchronous electric motors (4 units)
- Electric power transformers
- Valves and fittings
- Equipment control and automation systems

Commissioning: 2016

ZAHMET–TURKMENGALA MACHINE CHANNEL (TURKMENISTAN)
Pumping stations

Customer: Ministry of Water resources of Turkmenistan

Scope of works: design and exploration works, manufacturing of the main process equipment, outsourcing of auxiliaries, complex procurement, turnkey construction, installation supervision and commissioning

Technical data

- Total rated power: 40,000 kW
- Total capacity: over 515,000 m^3/h

Commissioning: 2014

YILGYNAGYZ WATER SUPPLY CHANNEL (TURKMENISTAN)
First main pumping station

Customer: Ministry of Water resources of Turkmenistan

Scope of works: exploration works, manufacturing of the main process equipment, outsourcing of auxiliary equipment and systems, complex procurement, turnkey construction, installation supervision and commissioning

Technical data

- Station total capacity: 35 m^3/sec
- Main pipelines diameter: 1000 – 1200 mm

Commissioning: 2011

SHUR–CHANNEL (UZBEKISTAN)
Water pumping station

Customer: Ministry of Agriculture and Water Resources of Uzbekistan

Scope of works: design and exploration works, manufacturing of the main equipment and outsourcing of auxiliaries, complex procurement, turnkey construction, installation supervision and commissioning

Constructed facilities

- Pumping station
- Pressure pipeline 1200 mm diameter
- High-voltage substation and electric power line

Commissioning: 2006

AUTOMATION SYSTEMS

PUMPS PROTECTION & CONTROL PANELS

HMS Control L2

	Number of sensors: up to 4 pcs **Electric motor parameters:** number of motors: 1 pc motor power: up to 90 kW operating current: up to 205 A	Protection and control of a single submersible borehole or drainage pump as well as any three-phase induction electric motor with short-circuit rotor. Manual, automatic (by signals from sensors) or remote control

HMS Control L3

	Number of sensors: up to 5 pcs **Electric motor parameters:** number of motors: 1 pc motor power: up to 132 kW operating current: up to 300 A	Protection and control of a single surface or submersible borehole pump. Manual, automatic (by signals from sensors) or remote control and monitoring of the equipment. Direct or soft start of the electric motor

HMS Control L4

	Number of sensors: up to 10 pcs **Electric motor parameters:** number of motors: 1 pc motor power: up to 132 kW operating current: up to 300 A	Protection and control of a single surface or submersible borehole pump. Extended functions of manual, automatic (by signals from sensors) or remote control and monitoring including wireless (radio channel, GSM/GPRS, SMS). Direct or soft start of the electric motor

HMS Control ST

	Number of sensors: upon request **Electric motors parameters:** number of motors: up to 4 pcs motor power: up to 132 kW operating current: up to 300 A	Protection and control of a group of four (4) surface pumps. Extended functions of manual, automatic (by sensor signals) or remote control and monitoring including wireless (radio channel, GSM/GPRS, SMS). Cascade or cascade-frequency regulation of pumping units with soft start of electric motors

HMS Control G

	Number of sensors: 1 pc **Electric motor parameters:** number of motors: 1 pc motor power: up to 5.5 kW operating current: up to 13 A	Protection and control of a single drainage pump of the GNOM series or similar close-coupled submersible drainage pumps. Manual or automatic control (by signal from sensor)

HMS Control PP

Number of sensors:

temperature: up to 12 pcs

vibration: up to 10 pcs

pressure: up to 2 pcs

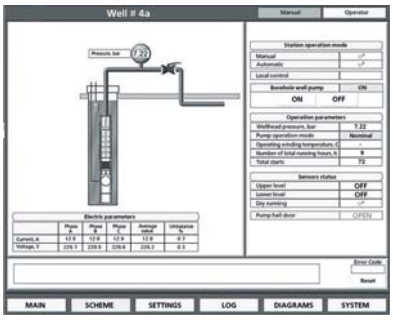
dry running: 1 pc

Reception, conversion, indication and transmission of signals from a massive of sensors to the supervisory control and data acquisition (SCADA) system via a number of interface channels including optionally available RS-485; alarm and warning signals when the process parameters exceed the preset values

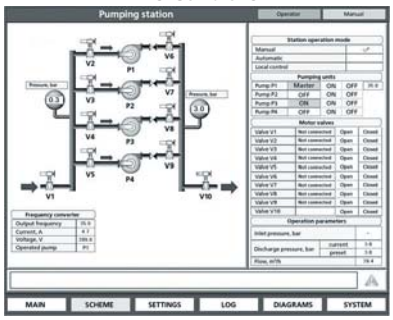
SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEMS

based on HMS Control series of the pump control and protection panels

HMS Control L4



HMS Control ST



Objects of automation:

borehole water intakes

water storage tanks

pumping stations of the 2nd and 3rd lift

booster stations

auxiliary equipment

Complex automation of the water supply facilities providing automatic or manual (including remote) control of the process equipment, its status and parameters of operation, logs of events, and reports of the process systems operation

COMPRESSORS

CENTRIFUGAL COMPRESSORS

COMPRESSORS WITH HORIZONTALLY SPLIT CASING

Capacity: up to 1,400 m³/min
Pressure: up to 45 bar
Power: up to 32,000 kW

The compressors bear embedded flow path elements; consist of one or several casings (compression stages) depending on required discharge pressure.

Applicable for compression of any industrial gases including toxic, corrosive and explosive

COMPRESSORS WITH VERTICALLY SPLIT CASING

Capacity: up to 900 m³/min
Pressure: up to 450 bar
Power: up to 32,000 kW

The compressors consist of of one or several casings (compression stages) depending on required discharge pressure.

Applicable for compression of any industrial gases including toxic, corrosive and explosive

REFRIGERATING SYSTEMS

REFRIGERATING COMPRESSORS WITH HORIZONTALLY SPLIT CASING

Capacity: up to 20,000 kW
$T_{boiling}$: up to -130 °C
$T_{condensing}$: up to +50 °C
Power $_{consumed}$: up to 10,000 kW

Refrigerating systems based on horizontally split centrifugal compressors with embedded flow path elements.

Supplied package includes anti-surge control and automation system

REFRIGERATING COMPRESSORS WITH VERTICALLY SPLIT CASING

Capacity: up to 20,000 kW
$T_{evaporator\ outlet}$: up to -15 °C
$T_{condenser\ inlet}$: up to +40 °C
Power $_{consumed}$: up to 10,050 kW

Refrigerating systems based on vertically split centrifugal compressors with built-in multiplier.

Supplied package includes anti-surge control and automation system

GAS COMPRESSION SYSTEMS

Capacity: up to 1,400 m³/min
Pressure: up to 450 bar
Power: up to 32,000 kW

Gas compression systems and compressor stations are designed and manufactured in accordance with customer requirements.

Application: treatment, transport and processing of natural and associated petroleum gas; gas injection into formation and underground storage facilities; gas lift oil production; utilization of associated petroleum and flare gases.

Available in containerized versions and easily constructed buildings with modular design of all systems

COMPRESSORS: SELECTED PROJECTS

KHARYAGINSKOYE FIELD AND USINSK GAS PROCESSING PLANT (RUSSIA)

Two compressor stations with complete gas compression systems 6GC2-260/2-38 GTU (5 units)

Customer: LUKOIL-Komi

Application

Compression of a low-pressure associated petroleum gas

Technical data of a single gas compression system

- Capacity: 250 million Nm^3/year
- Suction pressure: 2 bar
- Gas turbine drive power: 6,300 kW
- Discharge pressure: 38 bar

Commissioning: 2015 – 2017

STAVROLEN PETROCHEMICAL FACILITIES (RUSSIA)

Complete gas compression system 5GC2-287/15-57 GTU

Customer: LUKOIL

Application

Compression of dry stripped gas

Gas compression system technical data

- Capacity: 2,220 million Nm^3/year
- Suction pressure: 15 bar
- Gas turbine drive power: 25,000 kW
- Discharge pressure: 57 bar

Commissioning: 2016

YUZHNO–BALIKSKY GAS PROCESSING PLANT (RUSSIA)

Complete gas compression system 4GC2-242/12-80 GTU

Customer: SiburTyumenGaz

Application

Compression of a dry stripped gas

Gas compression system technical data

- Capacity: 489 million Nm^3/year
- Suction pressure: 12 bar
- Gas turbine drive power: 18,000 kW
- Discharge pressure: 80 bar

Supply of equipment: 2016

LUKOIL–PERMNEFTEORGSINTEZ PETROCHEMICAL FACILITIES (RUSSIA)

Complete turbine-driven gas compression systems 4GC2-70/17-62 GTU (3 units)

Customer: LUKOIL

Application

Compression and supply of dry stripped gas into the trunk pipeline

Technical data

- Capacity: 70,000 Nm^3/h
- Discharge pressure: 62 bar
- Gas turbine drive power: 6,000 kW

Commissioning: 2014

COMPRESSORS: SELECTED PROJECTS

VYNGAPUR GAS PROCESSING PLANT (RUSSIA)

Compressor station with a complete gas compression system 6GC2-375/4-77 GTU

Customer: SiburTyumenGas

Application

Compression of low-pressure associated petroleum gas

Technical data

- Capacity: 780 million Nm^3/year
- Discharge pressure: 76 bar
- Gas turbine drive power: 18,000 kW

Commissioning: 2012

NOVY–URENGOY LICENSE AREA (RUSSIA)

Complete turbine driven gas compression systems 4GC2-75/30-83 GTU (5 units)

Customer: ROSPAN INTERNATIONAL (Rosneft)

Application

Compression of a low-pressure hydrocarbon gas

Technical data of a single gas compression system

- Capacity: 1,150 million Nm^3/year
- Gas turbine drive power: 8,200 kW
- Suction pressure: 28 bar
- Discharge pressure: 84 bar

Supply of equipment: 2015 (1st batch); 2016-2017 (2nd batch)

PUNGINSKOYE UNDERGROUND GAS STORAGE FACILITY (RUSSIA)

Centrifugal compressors NC-16 PHG.0000-000 (4 units)

Customer: Gazprom

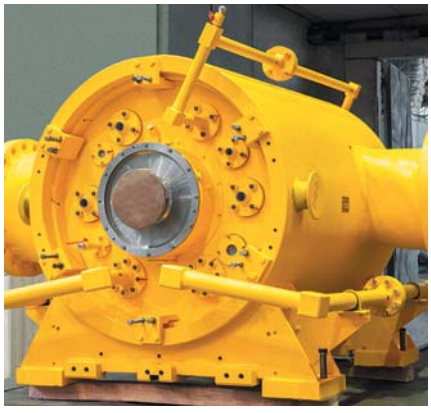
Application

Injection of natural gas into underground storage facilities

Technical data

- Capacity: 460 Nm^3/h
- Discharge pressure: 81 bar
- Gas turbine drive power: 16,000 kW

Commissioning: 2016



EKATERINOVKA, PISAREVKA, BUBNOVKA COMPRESSOR STATIONS (RUSSIA)

Natural gas superchargers NC16-76/1.35 (4 units), NC16-101/1.7 (7 units), NC16-76/1.44 (6 units)

Customer: Gazprom

Application

Compression of natural gas in the trunk pipelines gas compression systems

Technical data

- Capacity: up to 1.8 million Nm^3/h
- Discharge pressure: up to 99 bar
- Gas turbine drive power: 16,000 kW

Commissioning: 2015

COMPRESSORS: SELECTED PROJECTS

OFFSHORE STATIONARY PLATFORM PRIRAZLOMNAYA (RUSSIA)

Complete compressor systems based on vertically split centrifugal compressors: 32GC2-52/2-29M3.1, 5GC2-310/0.66-5M3.1, 3GC2-46/6-35M3.1

Customer: Gazprom Neft

Application
- Compression and supply of associated petroleum gas to the gas turbine
- Compression and supply of absorbing (hydrocarbon) gas to the stripping column for crude oil purification from the sulfur-containing impurities

Technical data
- Capacity: up to 12,300 Nm^3/h
- Discharge pressure: up to 35 bar
- Electric motor drive power: up to 2,500 kW

Commissioning: 2014

YARUDEYSKOYE FIELD (RUSSIA)

Centrifugal compressor systems 4GC2-65/18-101 (2 units) and 6GC2-384/4-49 (2 units) powered by a gas turbine

Customer: NOVATEK

Application
Compression of stripped/non stripped associated petroleum gas

Technical data
- Capacity: up to 384 m^3/min
- Discharge pressure: up to 99 bar
- Gas turbine drive power: 16,000 kW

Commissioning: 2016

SHURTAN FIELD BOOSTER STATION (UZBEKISTAN)

Compressor system based on centrifugal compressor 6GC2-380/10-37 powered by a gas turbine

Customer: National Holding Company «Uzbekneftgaz»

Application
Compression of natural gas with variable suction pressure from 14 to 6 bar

Technical data of a single compressor system
- Capacity: 268,740 Nm^3/h
- Discharge pressure: 37 bar
- Gas turbine drive power: 18,000 kW

Commissioning: 2015

PANJIN ZHENAO BUTYL RUBBER PLANT (CHINA)

Compressor system based on centrifugal compressor 5GC1-387/12 powered by electric motor

Customer: Panjin Zhenao Chemical Co. Ltd

Application
Compression of chloromethyl-containing gas in butyl rubber production

Technical data
- Capacity: 387 m^3/min
- Discharge pressure: 12 bar
- Electric motor power: 4,000 kW

Commissioning: 2013

OIL & GAS FIELD EQUIPMENT

The oil and gas field process systems are supplied in modular and skid-mounted versions with all necessary main and auxiliary equipment according to the project requirements

PUMPING STATIONS OF WATER INJECTION SYSTEMS

BLOCK-TYPE CLUSTER PUMPING STATIONS

Water injection into productive formations at the oil fields

FLOATING PUMPING STATIONS

Water intake from the open water sources rivers, lakes, etc. and its supply to water injection systems at the oil fields

Auxiliary onshore facilities including pipelines and valves are optionally available

PUMPING STATIONS FOR TRANSFER OF FORMATION LIQUID, OIL AND PETROLEUM PRODUCTS

OIL TRANSFER PUMPING STATIONS

Pumping of oil, petroleum products and liquids with similar viscosity and chemical activity

Pumped media contents:

- Gas (volume content): up to 3%
- Paraffine: up to 20%
- Hydrogen sulphide: up to 6%

MODULAR MULTIPHASE PUMPING STATIONS

Pumping of liquid-gas mixture from production wells to oil treatment units without prior gas separation. Supplied with twin-screw multiphase pumps

Pumped medium: water, oil and gas mixture with gas content up to 90%

PUMPING STATIONS FOR OILFIELD INFRASTRUCTURE FACILITIES

WATER WELL MODULAR PUMPING STATIONS WITH WATER TREATMENT SYSTEM

Water intake from artesian wells for drinking and industrial purposes as well as fire-fighting water supply at the oilfields

WASTEWATER PUMPING STATIONS

Collection of wastewater, rainwater and industrial sewage and their transfer to a disposal unit. The station consists of the pumping equipment module and two underground tanks mounted on-site as a single facility

FIRE-FIGHTING STATIONS

Water or high-expansion foam supply for ring pipeline systems at the fields, tank farms and industrial facilities as well as carbon dioxide supply for extinguishing of class A, B, C fire including electrical equipment under voltage

OIL AND WATER TREATMENT UNITS

OIL TREATMENT UNITS

Dehydration and desalination of oil emulsions received from oilfields, and commercial oil treatment

MOBILE OIL SEPARATION & TRANSPORT UNITS

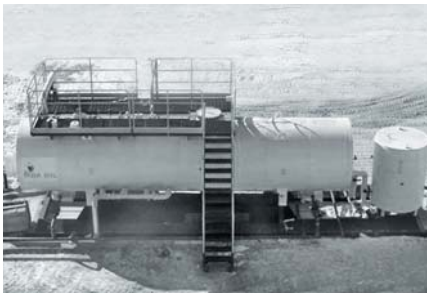
Automated measuring of oil and gas wells output with various pressure rate; associated petroleum gas flare system is optionally available

FREE WATER KNOCK-OUT UNITS

Formation water separation from and oil-gas-water mixture at oilfield cluster facilities, oil treatment units and booster pumping stations

- Liquid output: up to 5000 m^3/day
- Working pressure: up to 7 bar
- Volumetric capacity: up to 50 m^3

FORMATION WATER TREATMENT UNITS



Formation water separation from gas, oil and solids as well as dosing of chemicals

- Liquid output: up to 5000 m^3/day
- Pressure (rated): up to 10 bar
- Media temperature: up to 90 °C

OIL SEPARATION & LOADING PLANTS

Oil well products separation and loading into the trucks at the modular pumping stations

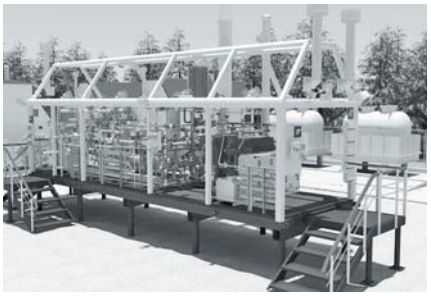
GAS TREATMENT AND PROCESSING SYSTEMS

GAS PROCESSING PLANTS EQUIPMENT AND SYSTEMS

Main types of equipment for gas treatment and its feed rate (raw media):

- Blocks of inlet separators: up to 50 mln m^3/day
- Sour components removal units: up to 30 mln m^3/day
- Drying and mercury removal units: up to 30 mln m^3/day
- Gas dehydration adsorbers: up to 50 mln m^3/day
- Gas fractionation units: up to 5 million ton/year
- Condensate stabilization unit: up to 5 mln t/year

ASSOCIATED PETROLEUM GAS TREATMENT UNIT



Gathering, treatment, measuring and adjustment of volumetric flow rate of associated petroleum gas separated from gas-liquid mixture of wells in order to be used as a fuel or for further treatment

COMPREHENSIVE NATURAL GAS TREATMENT UNITS

Separation of natural gas and condensate from productive fluid coming from wells for further transportation to the treatment facilities

- Gas production: up to 15 million Nm^3/day
- Liquid output: up to 25,000 Nm^3/day
- Suction pressure: up to 250 bar

GAS DISTRIBUTION PLANTS

Gas treatment, pressure reduction and maintenance at a predetermined level for supply of the gas consumers

The station include several process modules mounted on-site as a single facility or a complex of facilities

NITROGEN PLANTS

Production of gaseous nitrogen with concentration up to 99.9999% from atmospheric air directly on site for purging of the process systems as well as fire extinguishing plants at industrial facilities

GAS CONDENSATE WELLS SURVEY UNITS

Survey of wells to obtain initial data of oil, gas and condensate content calculation as well as facilities operational characteristics

- Gas production: up to 600,000 Nm^3/day
- Liquid output: up to 400 m^3/day
- Working medium pressure: up to 200 bar

RESERVOIRS, SEPARATORS, HEAT EXCHANGERS

RESERVOIRS AND VESSELS

Loading, storage and offloading of oil and petroleum products with optional heating or cooling; drainage of residual oil and petrochemicals, gas condensate, oil-water mixtures from process pipelines and machines

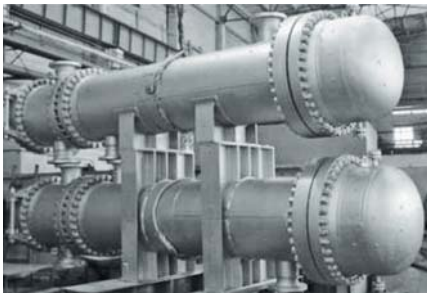
- Working volume: up to 200 m^3
- Working pressure: up to 0.7 bar
- Residual pressure: up to 0.1 bar
- Reservoir wall temperature: down to -70 °C
- Media density: up to 1,000 kg/m^3

SEPARATORS

Oil degassing, treatment of associated petroleum gas as well as separation of dropping liquid from a gas mixture at the oilfield products collection and treatment units

- Crude oil capacity: up to 560 m^3/h
- Gas capacity: up to 75,000 m^3/h
- Volumetric capacity: up to 200 m^3
- Working pressure: up to 100 bar
- Media temperature: up to 550 °C

TUBE AND SHELL HEAT EXCHANGERS



Heat exchange between liquid and gaseous media having different temperatures in various processes

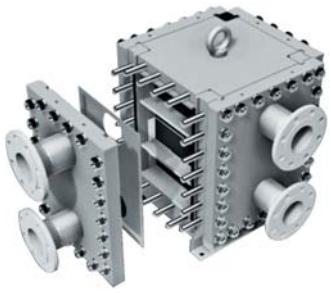
- Heat exchange surface: up to 8,550 m^2
- Rated pressure: up to 160 bar
- Media temperature: up to 600 °C

DISMOUNTABLE PLATE HEAT EXCHANGERS

Heat exchange between liquid and gaseous media with different temperatures in various processes. The design features enable complete dismantling of the plates pack for mechanical cleaning of the heat-exchanging surfaces, replacement of plates, as well as installation of additional plates for increased capacity

- Maximum media temperature: 190 °C
- Maximum working pressure: 25 bar
- Plates total surface area: up to 1,200 m^3
- Plates material: steel AISI 316, steel SMO254, titanium, Hastelloy C-276

SPLIT BODY WELDED HEAT EXCHANGERS



Heat exchange between liquid or gaseous media with different temperatures in various processes. The casing design enables compact piping layout and a small footprint as well as complete disassembly for mechanical cleaning of flow channels and plates replacement

- Maximum media temperature: 315 °C
- Maximum working pressure: 32 bar
- Plates total surface area: up to 100 m^3
- Plates material: steel AISI 316, steel SMO254, Hastelloy C-276

WELDED AND DISMOUNTABLE PLATE AND SHELL HEAT EXCHANGERS

Heat exchange between liquid or gaseous media with different temperatures in high-pressure processes or high pressure drop between media flows.
The casing of a cylindrical design enables replacement of the plates in a pack

- Maximum media temperature: 500 °C
- Maximum working pressure: 110 bar
- Plates total surface area: up to 673 m^3
- Plates material: steel AISI 316, steel SMO254, Hastelloy C-276

AIR COOLING UNITS

Cooling and condensing of vaporous, gaseous and liquid media in various processes

- Rated pressure: up to 160 bar
- Residual pressure (vacuum): above 6,650 bar
- Temperature: up to 400 °C
- Medium output density: up to 2 x 10^{-6} m^2/sec

OILFIELD EQUIPMENT

DOWNHOLE EQUIPMENT

Hermetic separation of production string intervals, pipe string fixation in the well and isolation of pipe string from working media during maintenance and process operations

- Packers and anchors
- Downhole tools

WELL WORKOVER OPERATIONS EQUIPMENT

Cleaning of wells from sand plugs, wells purging, uplifting of the downhole equipment for maintenance

Main types of equipment:

- Instrumentation shops
- Cleaning units
- Trip tanks
- Cleaning reservoirs
- Mud buckets
- Cable coiling machines

EQUIPMENT FOR HYDRAULIC FRACTURING

Stimulation of oil production by injection of the fracturing fluid (mixture of water, proppant and agents) into formation under pressure to form fracturing channels in the structure

Main types of equipment:

- Proppant silos volume: up to 40 m^3
- Gel tanks volume: up to 75 m^3
- Process reservoirs volume: up to 75 m^3
- Hydration reservoirs volume: up to 33 m^3

STATIONARY AND MOBILE CEMENT STORAGES

Intake, mixing, storage and distribution of dry cement mixtures and other bulk materials at the oilfields

- Maximum volume of a single storage tank: up to 285 m^3
- Maximum diameter of a single storage tank: up to 4.5 m
- Working pressure in the air system: - 0.7…8 bar
- Nominal inside diameter of input/output cement pipelines: up to 150 mm

CHEMICALS DOSING STATION

Chemical treatment of the well products in the oil, gas and condensate collection, processing and transport facilities

- Capacity: up to 6,300 l/h
- Pressure: up to 400 bar
- Temperature: up to 70 °C
- Media viscosity: up to 800 cSt

BRINE PREPARATION UNITS

Preparation of liquids based on fresh, produced or formation water using various additives, chemical agents and salts for control of wells during repair operations

BRINE REGENERATION UNITS

Cleaning of brine solution from organic, colloid and suspended solids and its supply to a regular brine preparation unit for reuse

- Output solids content: up to 20 mg/l
- Output oil content: up to 20 mg/l

FLOW CONTROL AND MEASUREMENT SYSTEMS

WELL FLOW RATE METERING UNIT MERA®-MR

Continuous or discrete flow rate and content metering of oil, gas and water coming from a well without preliminary components separation

- Temperature: up to 121 °C
- Viscosity: up to 50 x 10^{-6} m^2/sec
- Density: up to 1,180 kg/m^3
- Water content: up to 100%

WELL FLOW RATE METERING UNIT MERA®-MASSOMER

Automatic flow rate metering of separated liquid (crude oil) and associated petroleum gas extracted from wells with determination of monthly well production rate by components

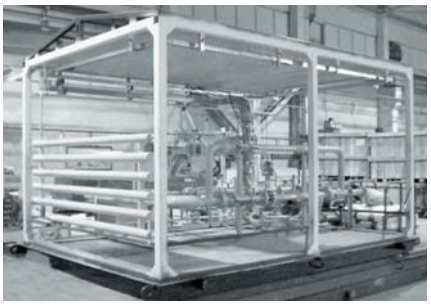
- Temperature: up to 90 °C
- Viscosity: up to 150 x 10^{-6} m^2/sec
- Density: up to 1,100 kg/m^3
- Water content: up to 98 %

WELL FLOW RATE METERING UNIT MERA®

Discrete metering of mass and mass flow rate of separated liquid (crude oil), oil and water as well as volume and volumetric flow rate of non-associated petroleum gas at standard conditions

- Temperature: up to 90 °C
- Viscosity: up to 150 x 10^{-6} m^2/sec
- Density: up to 1,100 kg/m^3
- Water content: up to 98 %

GAS FLOW RATE METERING UNITS

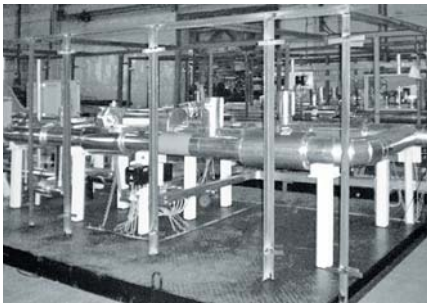


Automated metering and record-keeping of temperature, pressure, volume/mass flow rate and content of transferred natural or associated petroleum gas

OIL FLOW RATE METERING UNITS

Automated routine metering and commercial accounting, determination of physical and chemical properties of crude or commercial oil and petroleum products at oilfields, refineries, industrial facilities, trunk or infield pipelines

WATER FLOW RATE METERING UNITS



Automated collection, processing, calculation and displaying of quantitative and physical parameters of transferred formation water at oilfields

GAS CONDENSATE WELLS YIELD METERING UNITS

Metering of volume, mass flow rate, amount, density, pressure, and temperature of double-phase multi-component mixtures of gas and condensate extracted from wells without prior separation

- Temperature: up to 50 °C
- Liquid phase content: up to 15%
- Mixture flow rate: up to 2,500 m^3/h
- Excessive pressure: up to 160 bar
- Density: up to 200 kg/m^3

COUNTERS AND FLOW METERS

Routine and commercial accounting of consumed natural, associated petroleum and other gases (air, nitrogen, oxygen), water, oil and petroleum products, liquefied gases, mass and thermal power of water vapor

- Pipe nominal size: up to 2,000 mm
- Flow rate range: 1 … 45,000 m^3/h
- Excessive pressure: 0 … 300 bar
- Media temperature: -40 … +250 °C

CONTROLLERS AND CALCULATORS

Acquisition, conversion and processing of signals from sensors, counters and flow meters in the systems of routine and commercial accounting of energy resources and energy carriers with information transmission via various channels to the supervisory control and data acquisition systems of the upper level

- Analogue high-precision current channels: 6 … 14 pcs
- Flow rate: 1 … 45,000 m^3/h
- Pulse-frequency input signals: 2 … 8 pcs
- Power consumption: up to 6 W

ADMINISTRATIVE, PROCESS, AND INDUSTRIAL FACILITIES

CONTROL ROOMS

Provision of comfortable conditions for shift personnel as well as installation and reliable operation of automated control systems at oilfields

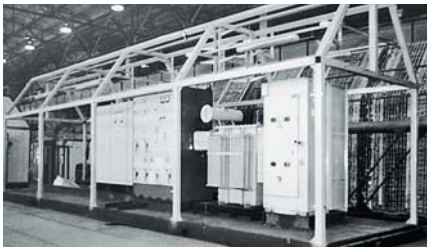
- Outside air temperature: down to -70 °C
- Inside (room) temperature: over +21 °C

HEATED MODULES FOR SHIFT PERSONNEL

Warming of shift personnel and installation of various domestic and utility equipment

- Outside air temperature: down to -70 °C
- Room temperature: over +21 °C

ELECTRIC SUBSTATIONS



Intake, transformation and distribution of electric energy of alternating three-phase current with 50 Hz frequency and 6/0.4 kW voltage into 380/220 V AC

- Primary voltage: up to 6,000 V
- Secondary voltage: up to 400 V
- Frequency: 50 Hz

ELECTRIC EQUIPMENT MODULES

Arrangement of various electric equipment for processes control at the oilfields

Scope of equipment:

- Package-transformer substation
- Low voltage complete equipment
- Distribution devices

OIL & GAS FIELD EQUIPMENT: SELECTED PROJECTS

POWER & DESALINATION PLANT (UNITED ARAB EMIRATES)

Fuel supply system to gas turbines

Scope of works: system engineering and manufacturing, equipment supply and commissioning

Scope of supply

Skid-mounted equipment of the fuel oil supply system including oil forwarding, transfer and return pump skids; flow meters, pressure sustain station, oil coolers, storage tanks, valves and fittings, field auxiliary equipment and measuring instruments

Equipment supply: 2016

GUILLERMO BROWN GAS TURBINE POWER PLANT (ARGENTINA)

Fuel oil and bio diesel forwarding system

Scope of works: system engineering and manufacturing, equipment supply and commissioning

Scope of supply

Skid-mounted equipment of the fuel oil and bio diesel forwarding system including mixing and blending skid, distillate forwarding and pressure sustaining plants, distillate isolation valves for gas turbines, biodiesel forwarding skid, valves & fittings, field auxiliary equipment and measuring instruments

Equipment supply: 2015

NADYM–PUR–TAZ REGION FIELDS (RUSSIA)

NGLs upstream, midstream and downstream process complex

Customer: Gazprom

Scope of works: engineering, manufacturing, procurement, installation supervision and commissioning

Scope of supply: process systems, skid-mounted rotating equipment, pressure vessels

Constructed facilities

- Gas condensate transport preparation plant (2nd stage)
- Delivery & acceptance point of oil and gas condensate pipeline
- Oil transfer pumping station
- Condensate stabilization unit of Achimov deposits

Project duration: 2014 – 2016

EAST–URENGOY LICENSE AREA (RUSSIA)

Process equipment modules

Customer: ROSPAN INTERNATIONAL (Rosneft)

Scope of works: engineering, manufacturing, procurement, installation supervision and commissioning, personnel training, performance testing

Scope of supply

Over 80 process modules: separators, heat exchangers, air cooler, stable condensate pumps, turboexpanders and other equipment

Constructed facilities

- Deethanization compressor station of 916 million Nm^3/year capacity
- Condensate stabilization unit of 2.72 million tons/year capacity
- Methanol regeneration unit of 24.2 thousand tons/year capacity
- Low temperature separation unit of 12 million Nm^3/day capacity

Project duration: 2014 – 2017

OIL & GAS FIELD EQUIPMENT: SELECTED PROJECTS

VANKOR FIELD (RUSSIA)

Process equipment modules for central oil collection point

Customer: Vankorneft (Rosneft)

Scope of works: engineering, manufacturing, procurement, installation supervision and commissioning

Scope of supply

- 12 process modules of up to 40x16x12 meters equipped with pumping systems, heat exchangers, measuring systems and various auxiliary equipment

Project duration: 2009 – 2012

ESPO–1 OIL PIPELINE (RUSSIA)

Emergency backup pumping stations

Customer: Transneft

Scope of works: engineering, manufacturing, delivery, installation supervision and commissioning

Scope of supply

Two emergency backup pumping stations equipped with:

- 4 modular blocks with pumping units and auxiliary equipment
- 8 pumping units based on NM 500-560 (API 610, type BB4) pumps driven by Cummins QSK60 diesel engines

Project duration: 2009 – 2010

CHASHKINO COMPRESSOR STATION (RUSSIA)

Process equipment modules

Customer: LUKOIL-PERM

Scope of works: engineering, manufacturing, procurement, installation supervision and commissioning

Application: dehydration of associated petroleum gas and regeneration of triethylene glycol

Scope of supply

Process systems including column equipment, heat exchangers, tanks and vessels, filters, pumps and auxiliary equipment

Supply of equipment: 2015

NORTH BUZACHI FIELD (KAZAKHSTAN)

Modular cluster pumping station

Customer: Buzachi Operating Ltd. (LUKOIL)

Scope of works: engineering, manufacturing, check assembly, delivery, installation supervision and commissioning

Scope of supply

- Main pumping units modules
- Booster pumping units modules
- Main and auxiliary electric equipment: control modules, frequency converters with a forced cooling system, transformer module, 6 kW distribution substation module

Commissioning: 2014

OILFIELD FACILITIES PROJECT ENGINEERING & DESIGN



OBJECTS OF ENGINEERING

UPSTREAM

- Facilities development for exploratory and production well clusters
- Block cluster pumping stations
- Filed infrastructure facilities

MIDSTREAM

- Infield and trunk pipelines for oil, gas and condensate
- Trunk pipelines operation facilities

DOWNSTREAM

- Oil and water treatment facilities
- Comprehensive gas treatment facilities
- Free water knock-out systems
- Booster compressor and pumping stations
- Central collection points
- Oil transfer stations
- Petroleum products storage facilities
- Flare systems

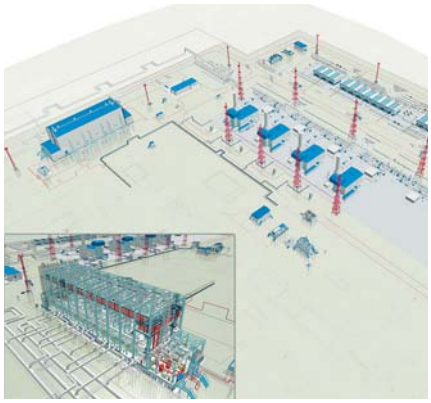
FIELD INFRASTRUCTURE

- Gas turbine and gas piston electric power stations
- Borehole and surface water intakes
- Water treatment plants
- Waste water treatment facilities
- Sewage disposal systems and other objects

SOLUTIONS ADVANTAGES

- Oilfield facilities engineering is performed by one of the leading project institutes in Russia and the CIS – **Giprotyumenneftegaz (HMS Group)**
- Full-cycle service: process engineering, site exploration survey , scientific support, field construction supervision
- Planning and surveying is performed using MicroStation and AutoPipe (Bentley Systems), Hysys, FLaReNet, Flow-3D; the project management is based on Primavera software
- Intelligent three-dimensional design technologies allow participation in all stages of the object's life cycle: design, construction, operation, reconstruction
- Over 300 oil, gas and condensate fields are successful engineered at the territory of Russia including regions of Western and Eastern Siberia, Sakhalin, Krasnoyarsk region and the Komi Republic

FIELD FACILITIES ENGINEERING AND DESIGN: SELECTED PROJECTS



URENGOY OIL AND GAS CONDENSATE FIELD (RUSSIA)

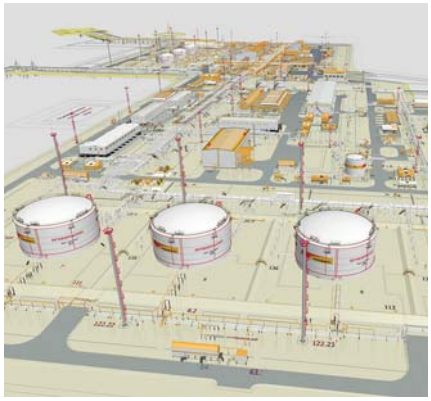
Booster compressor station for cenomanian deposit at the pestsovaya area (2nd stage)

Customer: Gazprom

Scope of works: project documentation development including site engineering survey

Designed facilities: booster compressor station, gas treatment facility, fuel gas treatment plant

Project duration: 2013 – 2014



VANKOR OIL AND GAS CONDENSATE FIELD (RUSSIA)

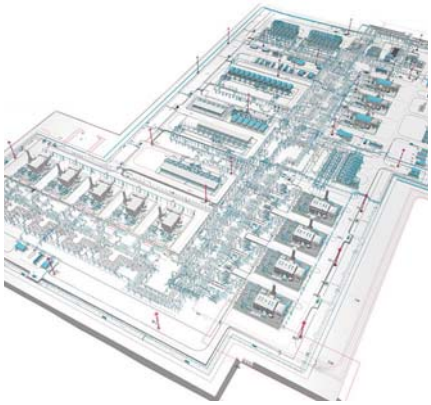
Free water knock-out system

Customer: Rosneft

Scope of works: integrated design including site engineering survey, construction supervision, establishment of a site representative office

Designed facilities: free water knock-out system, water treatment plant, low-pressure compressor station, slop treatment facility

Project duration: 2010 – 2012



YURKHAROVSKOYE OIL AND GAS CONDENSATE FIELD (RUSSIA)

Booster compressor station

Customer: NOVATEK

Scope of works: integrated design including site engineering survey, construction supervision

Designed facilities: air compressor station, gas treatment unit, nitrogen recovery plant, condensate pumping station, lube oil facilities, and other objects

Project duration: 2010 – 2013

EAST-TARKOSALINSKOYE OIL AND GAS CONDENSATE FIELD (RUSSIA)

Booster compressor station (2nd stage)

Customer: NOVATEK

Scope of works: integrated design including site engineering survey, construction supervision

Designed facilities: comprehensive gas treatment unit, booster compressor station of the 1-st stage, separation plant, compressor systems area, air coolers area

Project implementation: 2008

EPC & TURNKEY PROJECTS



Competencies and resources of HMS Group provide optimal system of the complex projects management to ensure timely and high-quality solution of tasks that significantly increases efficiency of the implemented projects for oil & gas and water & utilities

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

ADVANTAGES OF COOPERATION WITH HMS GROUP



UNIQUE COMPETENCES IN ENGINEERING AND MANUFACTURING OF PUMPS, COMPRESSORS, TANKS & VESSELS, AND SKID-MOUNTED EQUIPMENT

A wide range of pumps, compressors, pressure vessels, and packaged equipment for various applications in accordance with API standards

Own research and development capabilities

Decades of proven experience

EXPERIENCE IN INTEGRATED SUPPLIES OF OWN AND OUTSOURCED EQUIPMENT INCLUDING PROCESS MODULES AND SYSTEMS ON TURNKEY CONDITIONS

Single-source responsibility

Better delivery, installation lead time, and projects commissioning

Integrated project management

Cost control and optimization

Effective risk management

FULL RANGE OF WARRANTY AND AFTER-SALES SERVICE OF PUMPS, COMPRESSORS, AND OIL & GAS FIELD EQUIPMENT

Basic service options: installation & commissioning works, warranty repair, personnel training

Extended service options: after-warranty repair, supply of spare parts & expendables, technical and engineering support, equipment retrofit and overhaul

Branch and representative offices in Kazakhstan, Uzbekistan, Turkmenistan, Italy, Iran, and UAE

KEY FACTS AND FIGURES

- HMS Group foundation: 1993
- one of the leading manufacturers of pumps, compressors and oil & gas equipment in Russia and CIS
- extensive experience in the integrated projects for oil & gas and water & utilities
- manufacturing facilities in Russia, Belarus, Ukraine and Germany
- 15 000 employees

MAIN BUSINESS ACTIVITIES

Pumps engineering, manufacturing and service

- pumps (including API compliant) and pumping systems for oil & gas
- pumps for thermal & nuclear energy
- pumps for water supply and sewage disposal
- pumps for steel, mining and other industries

Compressors engineering, manufacturing and service

- compressors (including API compliant)
- gas compression systems
- refrigerating machines
- complete compressor stations

Oil & gas equipment engineering, manufacturing and service

- skid-mounted and modular equipment for oil & gas
- oilfield equipment for production stimulation, recovery increase, well works, hydraulic fracturing
- flow meters and systems for oil, gas and water
- tanks & pressure vessels, separators, heat exchangers
- oil & gas equipment repair and maintenance

EPC & turnkey projects

- integrated project facilities engineering for oil & gas and water & utilities
- procurement of process equipment & systems, installation and commissioning supervision
- complex projects management

CUSTOMERS OF HMS GROUP – LEADING COMPANIES IN VARIOUS INDUSTRIES

Gazprom, Gazprom Neft, Rosneft, Transneft, LUKOIL, NOVATEK, Surgutneftegas, SIBUR, E4 Group, Globalstroy Engineering, Stroytransgaz, INTER RAO UES, Power Machines, Fortum, Atomstroyexport, and others

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