



2016

BRIEF PRODUCTS CATALOGUE



DEAR PARTNERS!

On behalf of Chelyabinsk Compressor Plant LLC (LLC CHKZ) let me pay you obeisance and express our hopes for close cooperation in the respects power equipment. We can offer you the vast range of compressor, pump and power-generating equipment. For the range of main technical characteristics please check the present catalogue.

The plant has a strong presence on the Russian market as the largest manufacturer of compressor and general industrial equipment, gas separation plants, compressor equipment for oil associated gas transporting as well as pumping plants including fire extinguishing pump plants.

After you study the product catalogue you are welcome with your enquiries, which will be prompt and properly handled by our experts.

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ABOUT US

LLC "CHELYABINSK COMPRESSOR PLANT" is the largest manufacturer of screw compressor units at the Russian market. The plant was founded in 1999 and produced rotary vane compressors. Over 17 years the plant has considerably broadened the range of the products and for the present offers:

- screw compressor units of low pressure, driven from electric and diesel engines;
- piston compressor units of medium and high pressure;
- gas separating (nitrogen) membrane and adsorption units;
- diesel generator units;
- equipment for air and gas treatment; filters, separators, dryers;
- air receivers and capacitive equipment;
- air, nitrogen and gas (inclusive of natural gas) compressor stations.

The plant offers a full scope of services in design, production and "turn-key" implementation of packaged compressor equipment with communication facilities into the customers' technological processes, as well as performs audit of pneumatic systems at the customer's site.



LLC "CHKZ" sales geography comprises all the territory of the Russian Federation, neighbouring countries and abroad. Compressor units and station operate both in the tropical climate in Cuba and in severe conditions of Extreme North. The plant has its own local offices in 6 regions in Russia and one representative in Kazakhstan. Dealer service centers function in all regions throughout Russia.

Moving forward, LLC "CHKZ" constantly strives to improve its products, broaden the assortment, involve industry specific institutes, scientists and young specialists, and graduates of technical institutions.

SCREW COMPRESOR UNITS DEN

Brief description



Compressors DEN are designed on the basis of horizontal positive-displacement twin-screw oil-flooded compressors with a belt or coupling drives from an electric motor. They contain air and oil cooling and filtration systems, pressure and temperature control systems and are supplied with intelligent control units enabling operation without staff attendance. On customer's request the compressors are complete with compressed air treatment equipment and supplementary options.

Technical parameters range

Parameter	UOM	Range of values
Nominal capacity	m ³ /min	0,32 ... 54,0
Discharge pressure, exc.	MPa	0,7 ... 1,3
Engine power	kW	4,0 ... 400,0
Frequency regulation	%	No / 50 / 75
Supply voltage	V	220 / 380 / 6000
Current frequency	Hz	50
Number of phases	-	1 / 3
Operational temperature	°C	+1 ... +35
Compressed gas	-	Air
Motor start	-	Direct/step/soft
Cooling type	-	Air/liquid
Dimensions	mm	600x750x650 ... 3400x2100x2100
Weight	kg	150 ... 5170

Notes: The model range and detailed technical parameters are specified in Attachment 1.

Application area

Compressor unit	Application area												
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service
DEN "Econom"													+
DEN "Veterok"						+					+		+
DEN-15Sh ... DEN-75Sh		+					+	+		+	+		+
DEN-75Sh+ ... DEN-200ShM	+	+	+	+		+	+			+	+		+
DEN-250ShM+ ... DEN-400ShM	+		+	+			+			+			

Notes: for regions with specific requirements to the compressed air quality the compressor are supplied packaged with supplementary equipment.

Supplementary purifying equipment

	Name	Mark	Brief description
	Main separator	SC	Additional removal of moist and oil from the compressed air at the compressor outlet.
	Refrigeration dryer	OVR, OVR-D	Drying compressed air to the dew point +3...+10 °C by forced cooling.
	Adsorption dryer	OVA, OVA-T, OVA-C, OVA-TC	Drying compressed air to the dew point -40...-60 °C by moist adsorption.
	Main filters	FV	Removal of mechanical particles, wear debris, dust, vapours, oil scents (depending on the filtering element).

Options

Options	Compressor units						
	DEN "Econom"	DEN "Veterok"	DEN-15Sh ... DEN-30Sh	DEN-30Sh+ ... DEN-75Sh	DEN-75Sh+ ... DEN-110Sh	DEN-132ShM ... DEN-200ShM	DEN-250ShM ... DEN-400ShM
Chassis				+	+		
Receiver	+	+	+				
Receiver and chassis				+	+		
Winter start (heat fan and louver)			+	+	+		
Motor soft start		+	+	+	+	St	St
Intelligent control system	+	+	+	+	+	+	+
Inlet pre-filter		+	+	+	+	+	+
Flexible connection with the pneumatic system	+	+	+	+	+	+	+
Water separator	+	+	+	+	+	+	+
Brand colour	+	+	+	+	+	+	+
Power factor compensation					+	+	+
Textile slings				+	+	+	+
Tool kit	+	+	+	+	+	+	+

Notes: St – available in standard configuration

Designation interpretation:

DEN-22ShM-OR+ "Optim"

DEN – compressor unit mark

22 – nominal power of the drive motor (from 4 to 400 kW);

Sh – model configuration in a soundproof housing (no symbol stands for housing-free configuration);

M – drive type (M – via flexible coupling, no symbol stand for belt drive);

O – model configuration with a refrigeration dryer (no symbol stands for dryer-free configuration);

R – model configuration on a 500 or 900l receiver (no symbol stands for receiver-free configuration);

+ – effective model configuration (no symbol stands for ordinary configuration);

Optim – modification ("Optim" implies a motor speed regulating system, "Volt" is equipped with a high-voltage 6 or 10kW motor, "Dew" – with liquid cooling, "Miner" and "Ex" are used for explosion-proof version, no symbol stands for standard configuration).

SCREW COMPRESSOR UNITS KV

Brief description



Compressors KV are designed on the basis of horizontal positive-displacement twin-screw oil-flooded compressors with a belt or coupling drives from a diesel engine. They contain air and oil cooling and filtration systems, pressure and temperature control systems and are supplied with an electro-pneumatic control system with automatic delivery regulation. On customer's request the compressors are complete with compressed air treatment equipment and supplementary options.

Technical parameters range

Parameter	UOM	Range of values
Nominal capacity	m ³ /min	3,0...30,0
Discharge pressure, exc.	MPa	0,8...3,0
Engine power	kW	24,0...294,0
On-board power voltage	V	12 / 24
Operational temperature	°C	-35...+35
Compressed gas	-	Air
Engine type	-	Diesel/turbo-diesel
Chassis type	-	No/1-axis/2-axis
Dimensions	mm	1700x1300x1100...6050x2030x2450
Weight	kg	750...4800

Notes: The model range and detailed technical parameters are specified in Attachment 2.

Application area

Compressor unit	Application area													
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production
KV-3/8...KV-6/7P									+					+
KV-10/8...KV-12/12P								+	+					+
KV-20/30...KV-30/10P	+							+	+			+		+
KV-10/8S...KV-12/12S														+

Notes: compressor units with a diesel engine are not normally equipped with supplementary equipment for compressed air purification due to the intended use in severe conditions with no special requirements to the compressed air quality.

Options

Options	Compressor units					
	KV-3/8, KV-3/8P	KV-5/10... KV-6/7P	KV-8/8... KV-10/8P	KV-10/16... KV-12/12P	KV-12/10, KV-12/10P	KV-20/25... KV-30/10P
After cooler		St	+			
Water separator		+	+	+	+	+
Main oiler	+	+	+	+	+	
Wheel chocks	+	+	+	+	+	+
Tool box			+	+	+	+
Filter contamination optical sensor	St	St	+	+	St	+
Anti-theft chain with a lock	+	+	+	+	+	+
Additional filter	+	+	+	+	+	+
Ball fixture	+	+				
Prestart heating device	+	+	+	+	+	+
Brand colour	+	+	+	+	+	+
Air hose drum	+	+	+	+	+	+
Tool kit	+	+	+	+	+	+

Notes: St – available in standard configuration

Designation interpretation

KV-30/10P

KV – compressor unit mark

30 – nominal capacity at normal cond., m³/min (from 3 to 30.0);

10 – nominal discharge exc. pressure, atm. (from 8.0 to 30.0);

P – model configuration (P – on a chassis, S – special configuration for drilling auto towers, no symbol stands for standard configuration).



SCREW COMPRESSOR UNITS DEN IN EXPLOSION-PROOF DESIGN "MINER" AND "EX"

Brief description



Compressors DEN "Miner" and "Ex" are designed on the basis of horizontal positive-displacement twin-rotary oil-flooded compressors with a coupling joint drive form a motor. DEN "Miner" has an explosion protection marking Exdials for exploitation in gas-, vapour- and dust-hazardous underground mines and pithead buildings. The compressors have a standard design on a sledge. DEN "Ex" has an explosion protection marking 1Exb-IIB-T4-Gb 1Exdia-IIB-T4-Gb for exploitation in explosion-hazardous technological processes in gas and oil refining industry and extractive enterprises.

Technical parameters range

Parameter	UOM	Range of values
Nominal capacity	m ³ /min	0,8...54,0
Discharge pressure, exc.	MPa	0,7...1,3
Engine power	kW	5,5...400
Operational temperature	°C	+1...+35
Compressed gas	-	Air
Dimensions	mm	1050x600x950...3000x1800x2400
Weight	kg	350...4300

Notes: The model range and detailed technical parameters are specified in Attachment 3 and 4.

Application area

Compressor unit	Application area												
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service
DEN "Miner"				+	+	+							
DEN "Ex"				+		+	+						

Options

Options	Compressor units	
	DEN "Miner"	DEN "Ex"
Wheel pair	+	
Motor (voltage 660/1140V)	+	+
Methane sensor	+	
Powder fire-extinguishing system	+	+

PISTON COMPRESSOR UNITS KP

Brief description



Compressors KP are designed on the basis of positive-displacement multi-stage piston compressors. They contain air and oil cooling and filtration systems, pressure and temperature control systems and are supplied with an electric control unit enabling operation without staff attendance. On customer's request the compressors are complete with auxiliary compressed air treatment equipment and supplementary options.

Technical parameters range

Parameter	UOM	Range of values
Nominal capacity	m ³ /min	0,125...6800,0
Discharge pressure, exc.	MPa	4,0...50,0
Engine power	kW	2,2...160,0
Supply voltage	V	380
Current frequency	Hz	50
Number of phases	-	3
Operational temperature	°C	+1...+35
Compressed gas	-	Air
Motor start	-	Stage/soft
Cooling type	-	Air/air and liquid
Dimensions	mm	650x500x650...3200x1800x2000
Weight	kg	107...4800

Notes: The model range and detailed technical parameters are specified in Attachment 5.

Application area

Compressor unit	Application area													
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production
KP	+	+	+	+			+	+						

Designation interpretation

KP-2500/350

KP – compressor unit mark

2500 – nominal capacity at normal cond., l/min (from 125.0 to 6800.0);

350 – nominal discharge exc. pressure, atm. (from 40 to 500).

PISTON COMPRESOR BOOSTERS KP-D

Brief description



Compressors KP-D are designed on the basis of positive-displacement multi-stage piston compressors. They contain air and oil cooling and filtration systems, pressure and temperature control systems and are supplied with an electric control unit enabling operation without staff attendance. The boosters are used either as a second stage in combination with screw compressor units DEN and air treatment equipment or independently with already existing at site units.

Technical parameters range

Parameter	UOM	Range of values
Nominal capacity	m ³ /min	0,125...6800,0
Starting pressure, exc.	MPa	0,2...3,8
Discharge pressure, exc.	MPa	4,0...42,0
Engine power	kW	5,5...200,0
Supply voltage	V	380
Current frequency	Hz	50
Number of phases	-	3
Operational temperature	°C	+1...+35
Compressed gas	-	Air
Motor start	-	Stage/soft
Cooling type	-	Air/air and liquid
Dimensions	mm	650x500x650...3200x1800x2000
Weight	kg	107...4800

Notes: The model range and detailed technical parameters are specified in Attachment 5.

Application area

Compressor unit	Application area													
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production
KP-D	+	+	+	+			+	+						

Designation interpretation

KP-2/80D

KP – compressor unit mark

2 – number of stages (from 2 to 4);

80 – nominal discharge exc. pressure, atm. (from 40.0 to 42.0);

D – without the first compression stage (booster).

DIESEL GENERATOR UNITS ADGU

Brief description



Units ADGU are designed on the basis of diesel engine electrogenerators, containing cooling liquid and oil cooling and filtration systems and are supplied with an electric control system enabling operation without staff attendance. The units are built both in an open version and canopy. On customer's requests the units are equipped with an automation system putting the unit into operation when other power supply sources become absent.

Technical parameters range

Parameter	UOM	Range of values
Nominal power	kW	10,2...529,0
Max. engine power	kW	11,0...584,0
Number of phases	-	3
Fuel consumption at 100% load	l/h	3,6...128,2
Dimensions	mm	1600x900x1000...4200x1900x2250
Weight	kg	410...5300

Notes: The model range and detailed technical parameters are specified in Attachment 5.

Application area

Compressor unit	Application area													
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production
ADGU	+	+	+	+		+	+	+	+					+

Designation interpretation

ADGU-332YAMZ-K

ADGU – generator unit mark

332 – nominal generated power, kW (from 10.2 to 529.0);

YAMZ – engine type (Ya – Yanmar, P – Perkins, V- Volvo, YAMZ – Yaroslavsky motor plant, Russia);

K – housing design (O – open; K – sound insulating housing).

MAIN CYCLONE SEPARATORS SC

Brief description



Separators SC are designed to separate oil and water fractions by using cyclone flow. Special design with no moving parts and filter elements allows prolonging life terms. The separator is mounted directly into the air pipeline normally after the compressor.

Technical parameters range

Parameter	UOM	Range of values
Output rate at norm. cond.,	m ³ /min	1,5...458,0
Nominal pressure	MPa	0,6...0,8
Max. pressure	MPa	2,0
Pressure losses	MPa	0,001
Purity	%	>99,0
Weight	kg	1...662
Connection	-	thread/flange
Condensate drain	-	Automatic

Notes: The model range and detailed technical parameters are specified in Attachment 8.

Designation interpretation

SC-140R

SC – separator mark;

140 – output rate, m³/h (from 140 to 529.0);

R – connection type (R – thread, F – flange).

MAIN AIR FILTERS FV

Brief description



Filters FV depending on the filtering element type are designed for purification of the compressed air from mechanical particles (wear debris, abrasive particles, rust etc.), oil, water, acids, dust, vapours and scents. The separator is mounted directly into the air pipeline.

Technical parameters range

Parameter	UOM	Range of values
Output rate at norm. cond.,	m ³ /min	1,6...510,0
Nominal pressure	MPa	0,6...0,8
Max. pressure	MPa	1,6
Pressure losses	MPa	0,007...0,014
Purity	%	>99,0
Filtration rate	micron	0,01...3
Residual concentration	mg/m ³	0,001...5,0
Weight	kg	2...435

Notes: The model range and detailed technical parameters are specified in Attachment 9.

Designation interpretation

FV-0510R

FV – filter mark;

0510 – output rate, m³/h (from 100.0 to 24600.0);

R – connection type (R – thread, F – flange).

REFRIGERATION DRYERS OVR

Brief description



The dryers OVR are designed for removal of residual moisture from the compressed air (after separators, after coolers and drainage devices) in order to prevent condensation in pipelines, machine and equipment channels. The operation is based on the principle of cooling an air flow to the required dew point by forced condensation. Due to their specific features the dryers cannot provide drying below the dew point +2°C.

Technical parameters range

Parameter	UOM	Range of values
Output rate at norm. cond.,	m ³ /min	0,7...110,0
Nominal pressure	MPa	0,7...1,3
Power	kW	0,3...17,0
Air temperature at inlet	°C	+5...+45 (80)
Dew point	°C	+2...+10
Residual moisture content	g/m ³	5,57...9,36
Weight	kg	50...980

Notes: The model range and detailed technical parameters are specified in Attachment 10.

Designation interpretation

OVR-0510R

OVR – dryer mark;

0510 – output rate, m³/h (from 50.0 to 6600.0);

R – connection type (R – thread, F – flange).

ADSORPTION DRYERS OVA

Brief description



The dryers OVA are designed for removal of residual moisture from the compressed air (after separators, after coolers and drainage devices) in order to prevent condensation in pipelines, machine and equipment channels. The operation is based on the principle of moisture adsorption when the air flow passes a tower with an adsorbent. Depending on the adsorbent being in use and on the flow condition the dew point of -70 °C may be achieved.

Technical parameters range

Parameter	UOM	Range of values
Output rate at norm. cond.,	m ³ /min	0,7...55,0
Nominal pressure	MPa	0,7...1,3
Flow losses for regeneration	%	<15,0
Air temperature at inlet	°C	+2...+45
Dew point	°C	-20...-60 (-70)
Residual moisture content	g/m ³	2,16...0,011 (0,003)
Weight	kg	105...1650

Notes: The model range and detailed technical parameters are specified in Attachment 11.

Designation interpretation

OVA-0510R

OVA – dryer mark;

0510 – output rate, m³/h (from 50.0 to 6600.0);

R – connection type (R – thread, F – flange).

COMPRESSOR STATIONS BKK (MKS)

Brief description



Compressor station BKK (MKS) are based on the produced compressor units and air treatment equipment supplied in a single ready-to-use block container (BKK) or in several typical containers (MKS) having various application (air compression, air purifying, electric power automation, operator's room, household use, etc.). The station are equipped with the systems of heating, ventilation, lighting, fire and security alarm; remote intelligent control enabling staff-free operation.

Technical parameters range

Parameter	UOM	Range of values
Compressed gas	-	Air
Nominal capacity	m ³ /min	2,0...100,0 (to 400)
Nominal pressure, exc.	MPa	0.5...1.5 (to 40.0)
Rated power	kW	20...500.0 (to 1500.0)
Operational temperature	°C	-40...+40
Number of receivers	-	1...8 (to 0.9)
Dew point	°C	+10 / +3 / -20 / -40 / -60
Size of mechanical particles	micron	5...0,01
Dimensions of the 1 st container	mm	4500x2900x3100 (the smallest) 12000x2900x3100 (the largest)
Weight of the 1 st container	kg	from 6000
Number of containers (modules)	-	From 20

Notes: the values are specified for a standard station, on customer's request the values can be modified according to the project.

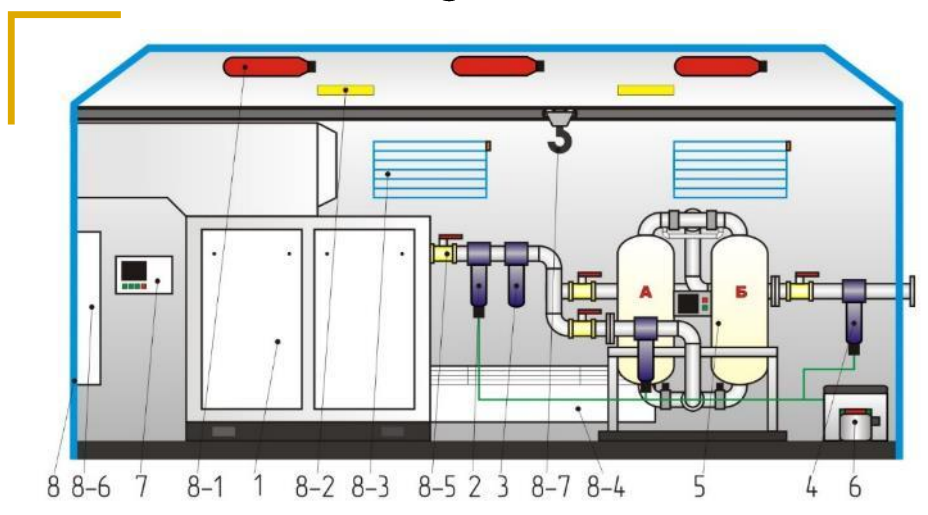


Application area

Compressor unit	Application area														
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production	Workshop
Compressor stations BKK (MKS)	+	+	+	+			+	+		+	+			+	+

Notes: machine and equipment nomenclature is defined by the company specific

Specification of standard configuration



Pos.	Name	Mark
1	Screw compressor unit	DEN / DEN "Optim" / DEN "Volt"
2	Cyclone water separator	SC
3	Air filter mark	FV-.../1,0P...FV-.../1,0F
4	Air filter	FV-.../0,01P...FV-.../0,01F
5	Adsorption dryer	OVA
6	Water and oil separator	UFS
7	Intelligent control system	Metacentre P4
8	Standard block-container	4500x2900x3100...12000x2900x3100
8-1	Powder fire extinguisher	OSP-2
8-2	Indoor and outdoor light	Lamp + projector
8-3	Automatic air valves	600x1600
8-4	Electric heater	KV-2 / KV -10
8-5	Pipeline fittings	Package
8-6	Electrical distribution panel	Lead-in distributor
8-7	Hand chain hoist	1000 kg or 2000 kg

Designation interpretation

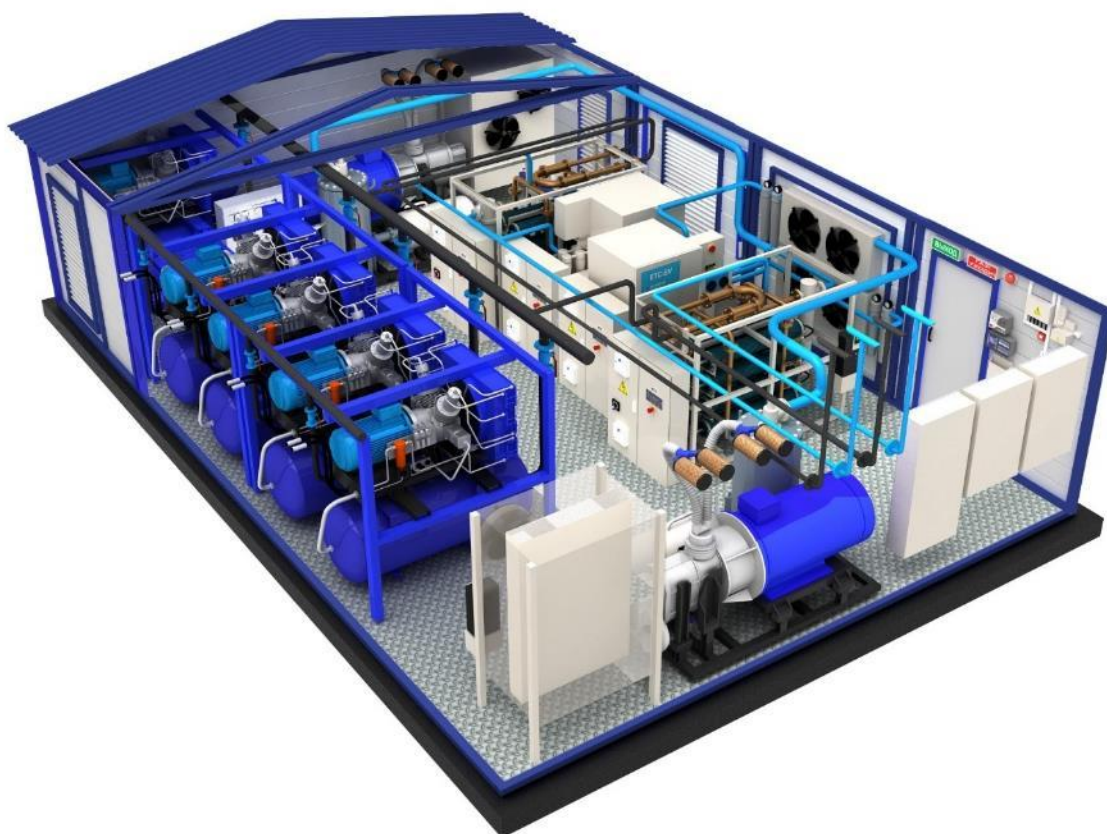
BKK-64/10-2

BKK – station mark (BKK or MKS);
64 – nominal capacity at normal cond., m³/min;
10 – nominal discharge exc. pressure, atm.;
2 – number of compressor units

NITROGEN COMPRESSOR STATIONS BKK (MKS) AMU

Brief description

Compressor station BKK (MKS) AMU are based on the produced compressor units and air treatment equipment and supplied in a single ready-to-use block container (BKK) or in several typical containers (MKS). Nitrogen separation is performed in a membrane unit after air compression in a compressor unit. Nitrogen of high pressure can be produced with the use of a booster station KP-D. Partial air bleed to other consumers is also available. The stations are equipped with the systems of heating, ventilation, lighting, fire and security alarm; remote intelligent control enabling staff-free operation.



Technical parameters range

Name	UOM	Range of values
Nitrogen delivery, norm. cond.	m ³ /min	up to 25.0
Discharge nitrogen pressure, nominal, exc.	MPa	0.7 ... 1.0 (to 40.0)
Nitrogen content	%	95...99.95
Air delivery, norm. cond.	m ³ /min	up to 100.0
Discharge air pressure, nominal, exc.	MPa	1,0
Dew point	-	+10 / +3 / -20 / -40 / -60
Number of nitrogen flows	-	1 / 2
Number of nitrogen flows	-	1 / 2
Dimensions of the 1 st container	mm	8000x2900x3100 (the smallest) 12000x2900x3100 (the largest)
Weight of the 1 st container	kg	from 6000
Explosion protection	-	Not available/ available

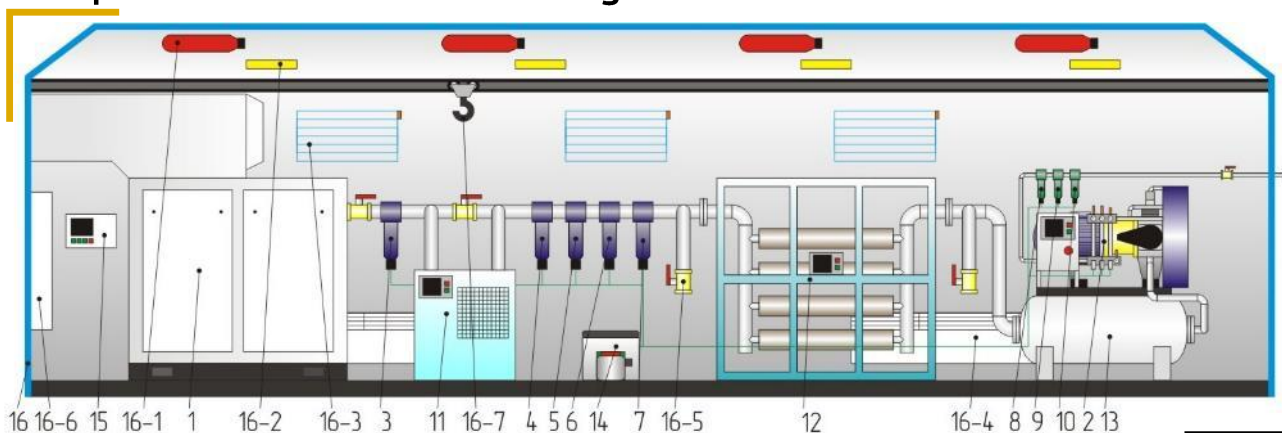
Notes: the values are specified for a standard station, on customer's request the values can be modified according to the project.

Application area

Compressor unit	Область применения																
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production	Workshop	Emergency services	Drilling and blasting
	+		+	+		+	+			+	+			+		+	+
	BKK (MKS) AMU	+		+	+		+	+			+	+			+		+

Notes: machine and equipment nomenclature is defined by the company specific

Specification of standard configuration



Pos.	Name	Mark
1	Screw compressor unit	DEN
2	Booster compressor unit	KP-D
3	Cyclone water separator	SC
4	Air filter	FV-1
5	Air filter	FV-0.01
6	Air filter	FV-0.001
7	Air filter	FV-0.003
8	Air filter of high pressure	HD-(0,01/MF)
9	Air filter of high pressure	HD-(0,01/SMF)
10	Carbon air filter of high pressure	HD-(0,01/AK)
11	Refrigeration dryer	OVR
12	Membrane nitrogen separating unit	AMU
13	Horizontal receiver	RG
14	Water and oil separator	UFS
15	Intelligent control system	Metacentre SX
16	Standard block-container	
16-1	Powder fire extinguisher	OSP-2
16-2	Indoor and outdoor light	Lamp+projector
16-3	Automatic air valve	600x1600
16-4	Electric heater	220V, 2 kW
16-5	Pipeline fittings	Package
16-6	Electrical distribution panel	Lead-in distributor
16-7	Hand chain hoist	1000 kg or 2000 kg

Designation interpretation

BKK-64/10-2 AMU

BKK – station mark (BKK or MKS)

64 – nominal air capacity at normal cond., m³/min;

10 – nominal discharge exc. pressure before the nitrogen unit, atm.

2 – number of compressor units

AMU – type of the gas separating unit (membrane nitrogen)

COMPRESSOR STATIONS OF ASSOCIATED PETROLEUM GASES KS-PNG

Brief description

The specially designed stations KS-PNG in explosion-proof version secure boosting and transportation of associated gases for its further processing. The gas can be supplied to the station both under vacuum gage pressure (VKS-PNG model) and excessive pressure (DKS-PNG). The station is built in an all-season block- container, in standard configuration split into two sections: the one section houses explosion-proof technological equipment, the other section houses electric power automation and control systems.



Technical parameters range

Name	UOM	Range of values
Compressed gas	-	associated petroleum gas
Category and group of explosion-hazardous mixture	-	IIAT4
Nominal capacity	m ³ /min	up to 167.0
Starting pressure, exc.	MPa	0,05...0,9
Discharge pressure, exc.	MPa	1,5...2,9
Total power (approx.)	kW	up to 1000
Capacity regulation	%	0...100
Type of capacity regulation	-	spool-type – stage-free
Initial gas temperature	°C	1...35
Final gas temperature	°C	50...95
Relative humidity	%	100
Voltage	V	380
Machine and equipment reserve	%	100
Station dimensions	mm	12000x2900x3100 (compressor block) 9000x2900x3100 (control block)
Station weight	kg	up to 35000

Notes: the values are specified for a standard station, on customer's request the values can be modified according to the project.

Application area

Compressor unit	Application area													
	Power	Engineering	Metallurgy	Oil development	Mines, pits	Oil refinery	Chemical industry	Construction	Road Construction	Rail road	Food industry	Wire laying	Car service	Small-scale production
KS-PNG				+		+								

Notes: the values are specified for a standard station, on customer's request the values can be modified according to the project.

Designation interpretation

VKS-64/10-2 PNG

VKS – station mark (VKS or DKS);
64 – nominal gas capacity at normal cond., m³/min;
10 – nominal discharge exc. pressure, atm.;
2 – number of compressor units;
PNG – compressed air (associated petroleum gas).



MULTIFUNCTION MODULAR PUMP STATIONS CNP

Description

Pump stations are being built on the basis of centrifugal pumps produced by such domestic manufacturers as Yasnogorsky Pump Plant LLC, GMC-Livgidromash JSC and such foreign ones as Grundfos of the following types.

- console;
- with two side input;
- sectional multistage.

The standard pump drive is electric (others – upon request).

The station is placed inside of the all weather standard container, which does not require any special base and which is supplied with such life support systems as:

- burglar and fire alarm;
- powder and gas automatic firefighting;
- heating, venting and conditioning system and others.

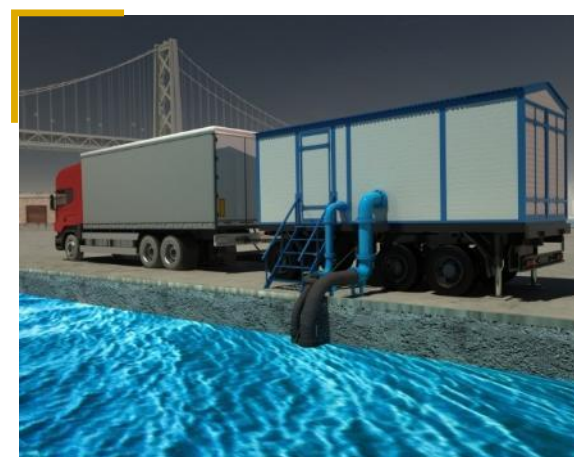
In case of big capacities need the station can consist of **several containers**, which can be either separate or joined into one building.

The design is modular, that allows:

- designing the station in the shortest terms;
- modifying the already existing station with new equipment in order to enlarge its application;
- increasing the capacity fast and simple.

The standard station control system is **intellectual**, that applies the regulation algorithms in accordance with a specific regime, operation conditions and company manufacturing branch. Upon customers request the system can be supplemented with the following options:

- data transmission to the senior control system;
- station status update by mobile phone or email;
- remote control of the status by mobile phone or PC with internet access.



Technical parameters range

Parameter		Unit.	Designation
Centrifugal electric pump type		—	console; with two side input; sectional multistage.
Nominal delivery of 1 pump	console	m³/h	10,0 ... 200,0
	with two side input		70,0 ... 2000,0
	sectional multistage		2,5 ... 60,0
Nominal pressure of 1 pump	console	MPa	0,16 ... 0,9 (1,0)
	with two side input		0,10 ... 1,25 (1,60)
	sectional multistage		0,11 ... 1,60 (2,0)
Pumps in a station	total	—	6
	main		1 ... 6 (10)
	reserve		1 ... 3 (5)
Nominal delivery of a station	console	m³/h	60,0 ... 1200,0 (2000,0)
	with two side input		140,0 ... 12000,0 (20000,0)
	sectional multistage		25 ... 360,0 (600,0)
Nominal pressure of a station	console	MPa	0,7 ... 0,9
	with two side input		0,5 ... 0,7
	sectional multistage		2,3 ... 3,5
Pumping depth	self-priming	m	≤ 6
	ejector -vacuum		< 10
	ejector -volume		≤ 20
Station power		kW	20,0 ... 4000 (6300)
Delivery regulation mode		—	throttle / frequency / cascade-throttle / cascade - frequency
Regulation pumping depth	throttle	%	20 ... 25
	frequency		15 ... 20
	throttle-frequency		15 ... 35
Pumping liquids		—	drinking water / water technology / sea water / oil
Station weight		kg	2500 ... 16000 (25000)
Submersible parts weight	throttle	kg	≥ 100
	frequency		≥ 330
	throttle-frequency		≥ 350
Standard containers quantity		—	1 ... 6 (10)
Standard container dimensions (LxWxH)		mm	4500x2900x3100 6000x2900x3100 8000x2900x3100 10000x2900x3100 12000x2900x3100
Dimensions of station on chassis (LxWxH)	Minimum (2-axis)	mm	4400x1900x1900
	Maximum (3-axis)		8200x2900x4500

Note: in brackets there are maximum data reached by a standard station

Note: technical parameters are valid for the liquid pumping ambient with $\nu \approx 1 \text{ cSt}$, $\rho = 1000 \text{ kg/m}^3$ and $t = 20 \dots 25 \text{ }^\circ\text{C}$.

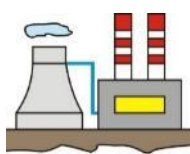
Application field



**Apartment
houses water
supply**



**Companies
water supply**



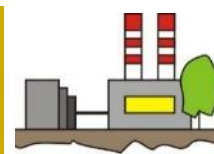
Water recycling



**Firefighting
systems**



**Formation
pressure
maintenance**



**Oil products
pumping**

Modules types

Control

- Microprocessor system
- Electro-mechanical system
- Remote control

Pump

- Console
- With two side input
- Sectional multistage

Supply

- Electric
- Diesel electric

Housing

- Insulated container
- Non-Insulated container

Mobile

- Stationary (no chassis)
- On a trailer chassis
- On a railway chassis
- On slide

Piping

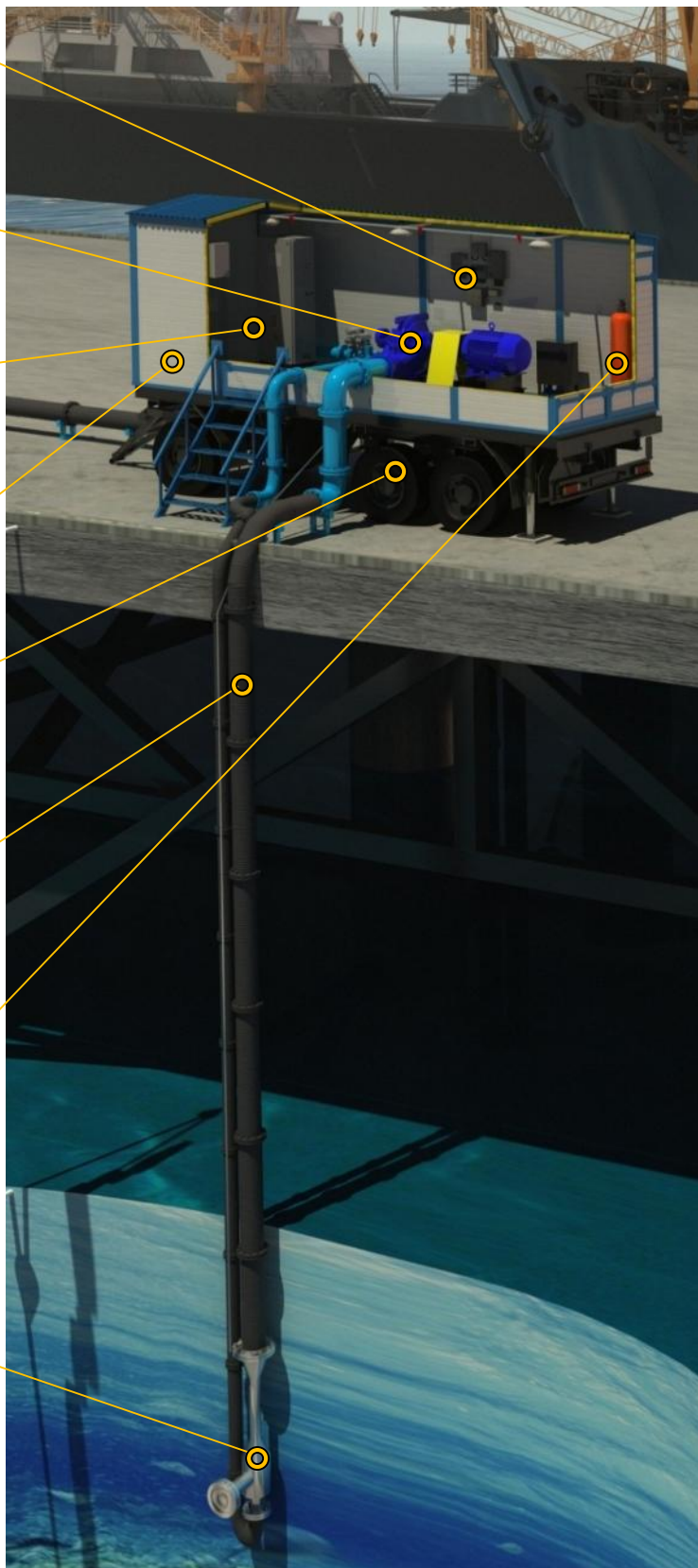
- Standard
- With ejection

Safety

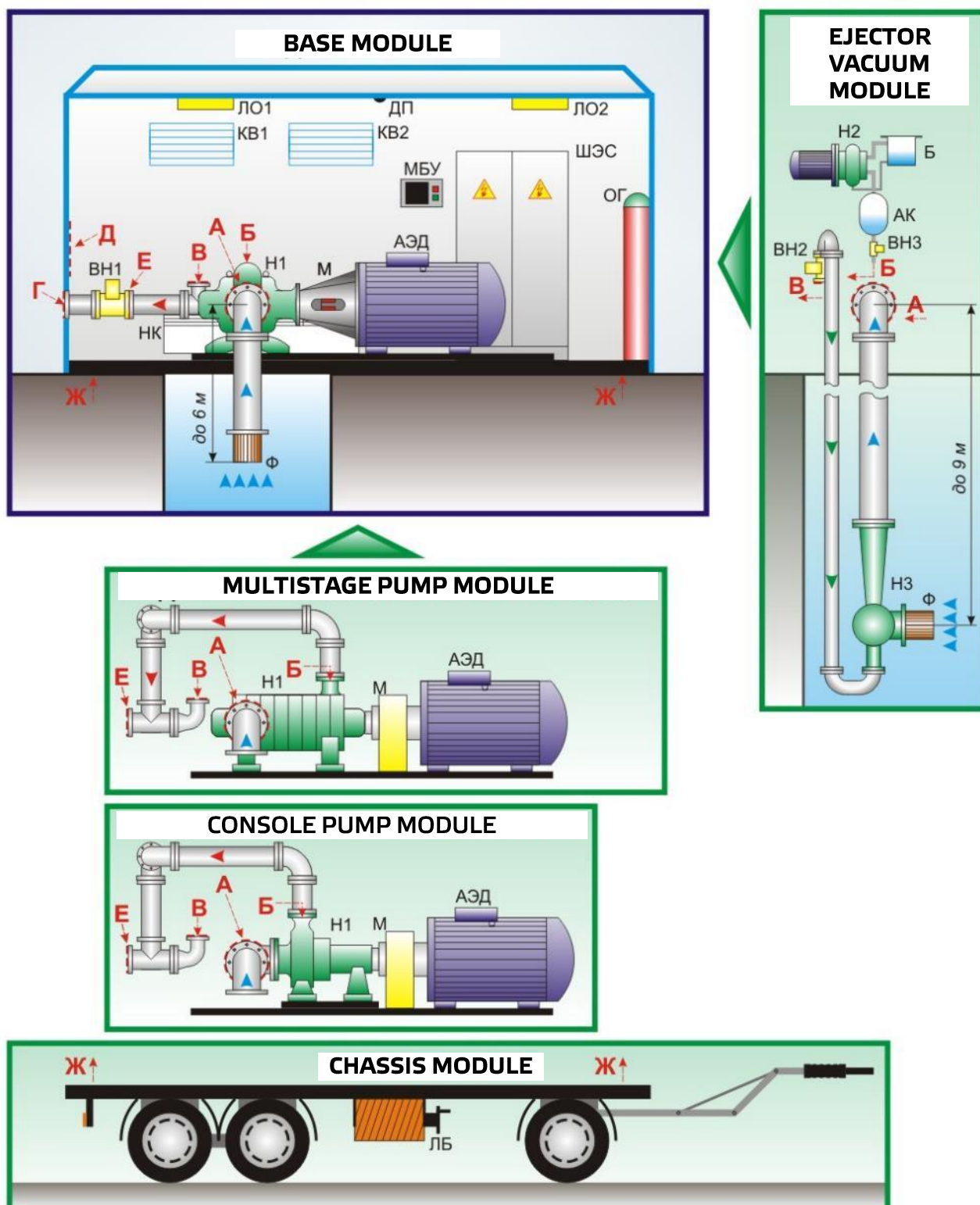
- Firefighting
- Firefighting and lightening
- Firefighting, lightening, venting, heating, burglar alarm

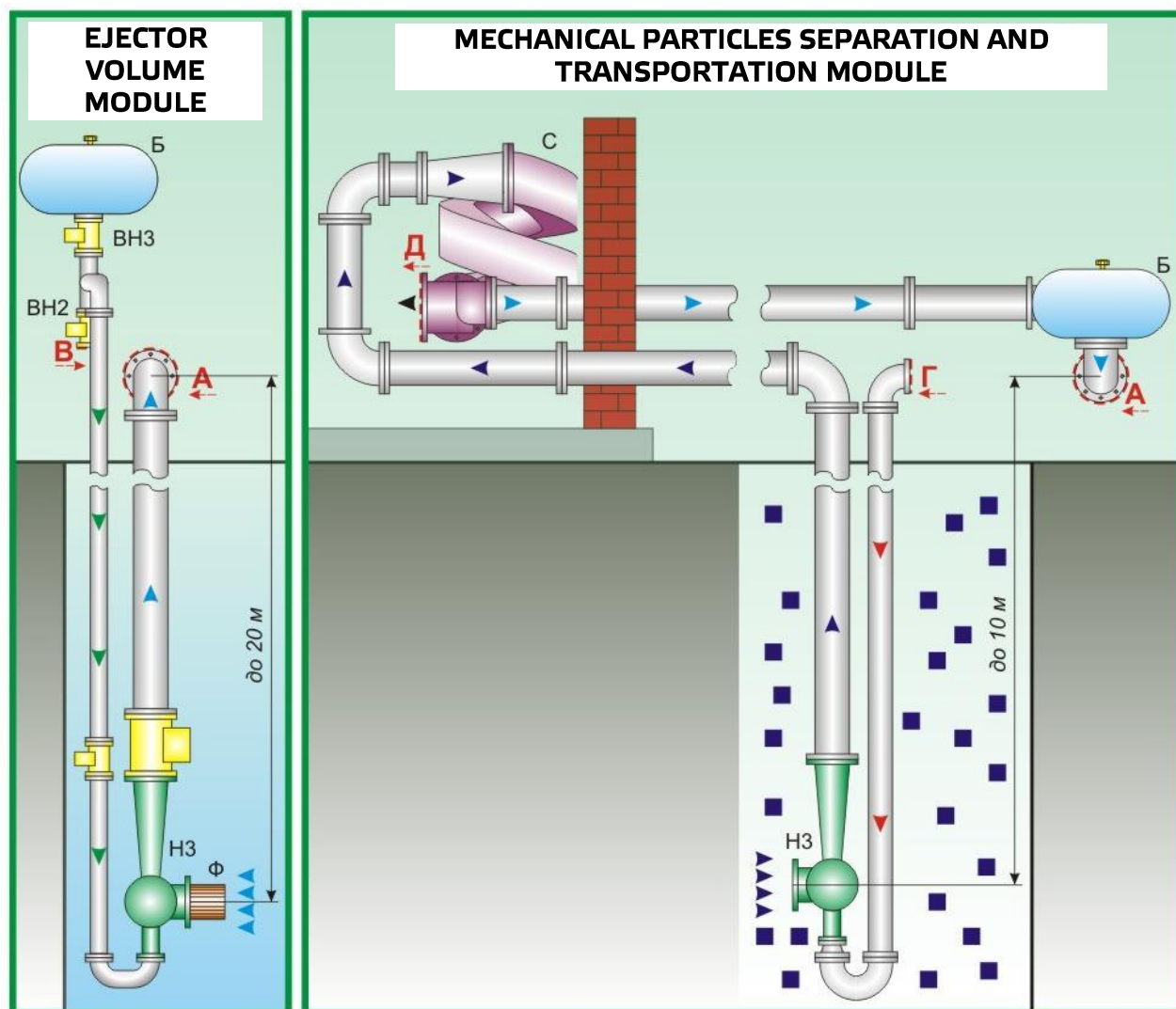
Ejection

- With vacuum pump and ejector
- With prefill tank and ejector
- With prefill tank, ejector and separator



Modular construction principle





MODULES CONNECTIONS

- A** – intake piping connection
- Б** – prefill piping connection
- В** – active flow piping connection
- Г** – pressure piping connection
- Д** – separation piping connection
- Е** – pump pressure piping connection
- Ж** – chassis base connection

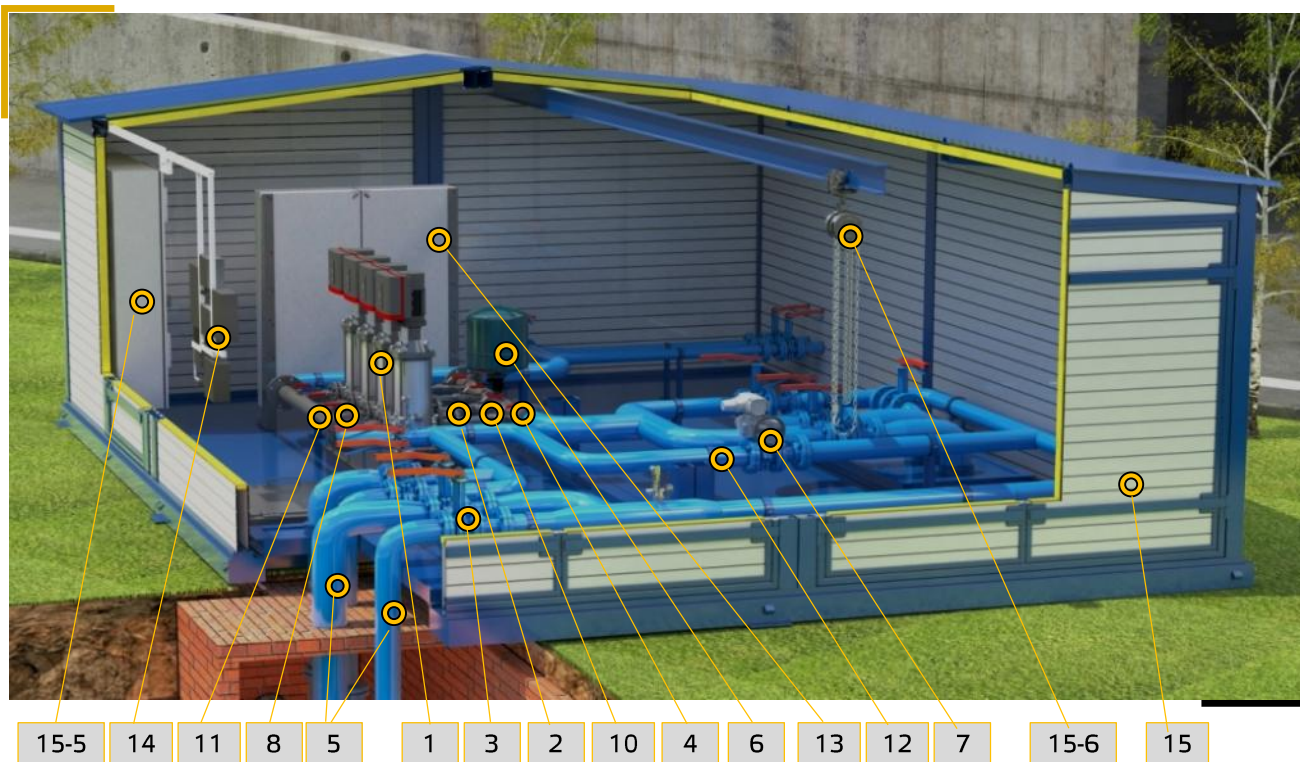
FLOW DIRECTION

- – основной напорный
- – всасываемый
- – всасываемый с механическими примесями
- – активный в эжектор
- – продукт сепарации

REFERENCE

- H1** – main pump
- H2** – vacuum pump
- H3** – ejector
- АЭД** – electric asynchronous motor
- М** – drive coupling
- Φ** – intake filter
- ВН1** – main vent
- ВН2** – active flow regulation vent
- ВН3, ВН4, ВН5** – pump prefill vents
- АК** – accumulator
- Б** – tank
- С** – mechanical impurities separator
- МБУ** – multifunctional control unit
- ШЭС** – electric cabinet
- ЛО1, ЛО2** – lightning
- ДП** – smoke sensor
- ОГ** – gas fire extinguisher
- КВ1, КВ2** – air venting valve
- ЛБ** – cable hoist

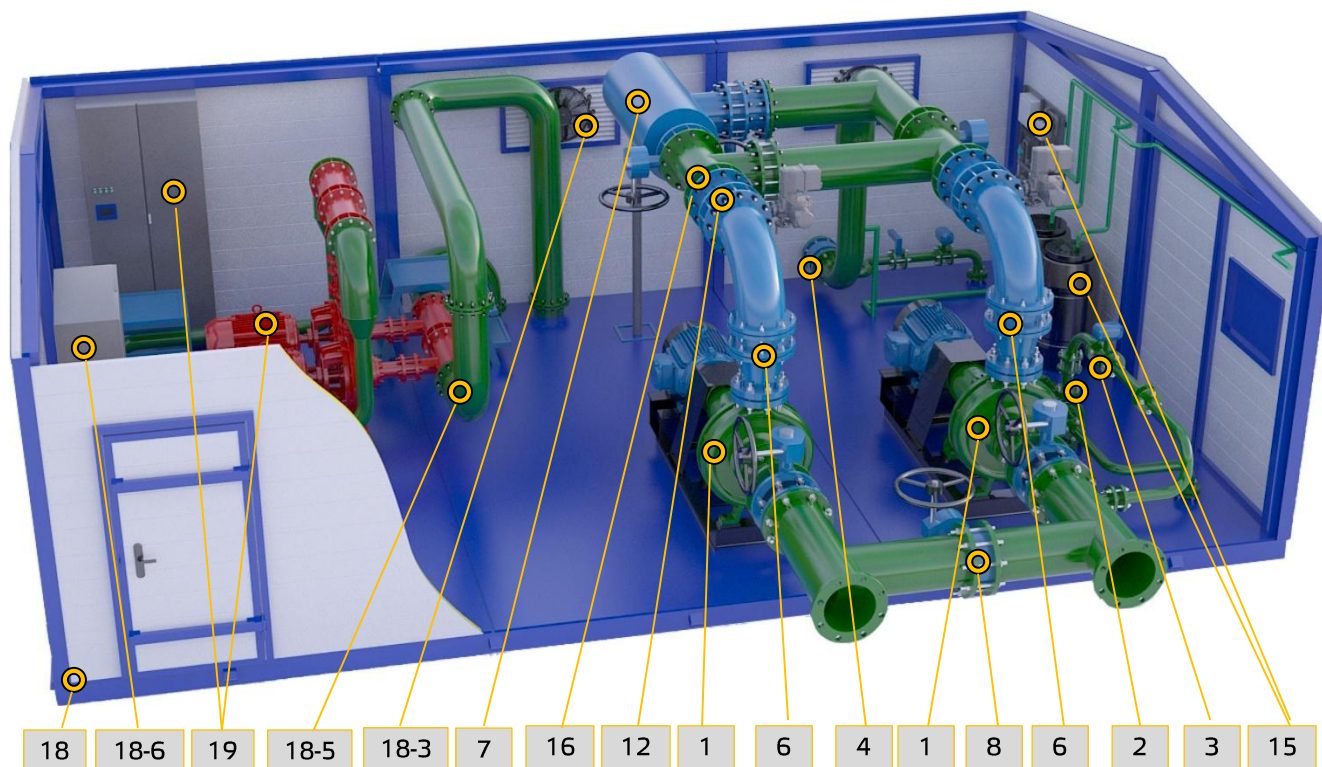
Specification of standard configuration



No.	Name	Type	Q-ty
1	Centrifugal pump	K, 1K, 2K (concole) D, 1D, 2D (with two side input) CNSh (multistage horizontal) CNSv (multistage vertical)	1...6
2	Check valve	Cast iron and stainless PN16 d _y =100...500 flange-to-flange	1...6
3	Disc gate	Cast iron and stainless PN6 d _y =200...700 manual flange-to-flange Cast iron and stainless PN16 d _y =200...700 manual flange-to-flange	1...12
4	Disc gate	Cast iron and stainless PN16 d _y =100...500 electric drive flange-to-flange	1...6
5	Pipe	Steel PN6 d _y =200...700 Steel PN16 d _y =100...500	Set
6	Expansion tank	Steel PN16 V=50...200 l	0...1
7	Ultrasound flow meter	40...3200 m ³ /h	1
8	Screen filter	Cast iron PN6 d _y =200...700	1...6
9	Vibrocompensator	Rubber PN6 d _y =200...700 Rubber PN16 d _y =100...500	1...6
10	Pressure sensor	4...20 mA	1...6
11	Dry run relay	Discrete	1...2
12	Temperature sensor	4...20 mA	1...2
13	Reserve switching device cabinet	50...2500 A	1
14	Control system	CHKZ+Schneider Electric	1
15	Container	4500x2300x2900 / 6000x2300x2900 / 8000x2300x2900 / 10000x2300x2900 / 12000x2300x2900	1...10
15-1	Fire extinguisher	Powder OSP-2	1...20
15-2	Lightening system	Fluorescent lamp 15 W Halogen projector 500 W	4...40 1
15-3	Ventilation system	Shutter 600x800 Fan 300 W	1...5
15-4	Heating system	Electro-convector 1,5 kW	1...20
15-5	In-house cabinet	ShCN 5...50 kW	1...10
15-6	Hand chain hoist	TRShB 1000 kg / TPSHb 2000 kg	1...10

Note: nos. 9, 15-1, 15-2, 15-3 and 15-4 are not shown.

Circulating water stations specification



No.	Name	Type	Q-ty
1	Centrifugal electric pump unit	Overhung / double-entry	2
2		Overhung	1
3	Flowmeter	Ultrasonic DN=50 mm	1
4		Ultrasonic DN=200 mm	1
5	Check valve	DN=50 mm	1
6		DN=300 mm	2
7	Self-cleaning screen filter	Yamit AF712BL	1
8	Interflanged manual valve	DN=400 mm PN=6 bar	3
9		DN=300 mm PN=16 bar	3
10		DN=50 mm PN=16 bar	2
11		DN=40 mm PN=16 bar	1
12	Interflanged electric valve	DN=300 mm PN=16 bar	2
13		DN=50 mm PN=16 bar	1
14		DN=40 mm PN=16 bar	1
15	Reagent metering unit	3D Trasar	1
16	Interflanged compensator	DN=300 mm PN=16 bar	4
17		DN=400 mm PN=6 bar	2
18	Block-container	6000x2900x3100	3
18-1	Fire extinguishing system	Powder fire extinguisher OSP-2	1...4
18-2	Lighting system	Luminous tube lamp 15 W	2...8
		Halogen projector 500 W	1
18-3	Ventilation system	Shutter 600x800 with fan 300 W	1...4
18-4	Heating system	Electric convector 1,5 kW	1...4
18-5	Pipeline fitting	-	Set
18-6	Electric control system	-	1...2
18-7	Hand chain hoist	TRShB 1000 kg	1
19	Fire extinguishing unit*	NPO "Kurs"	1

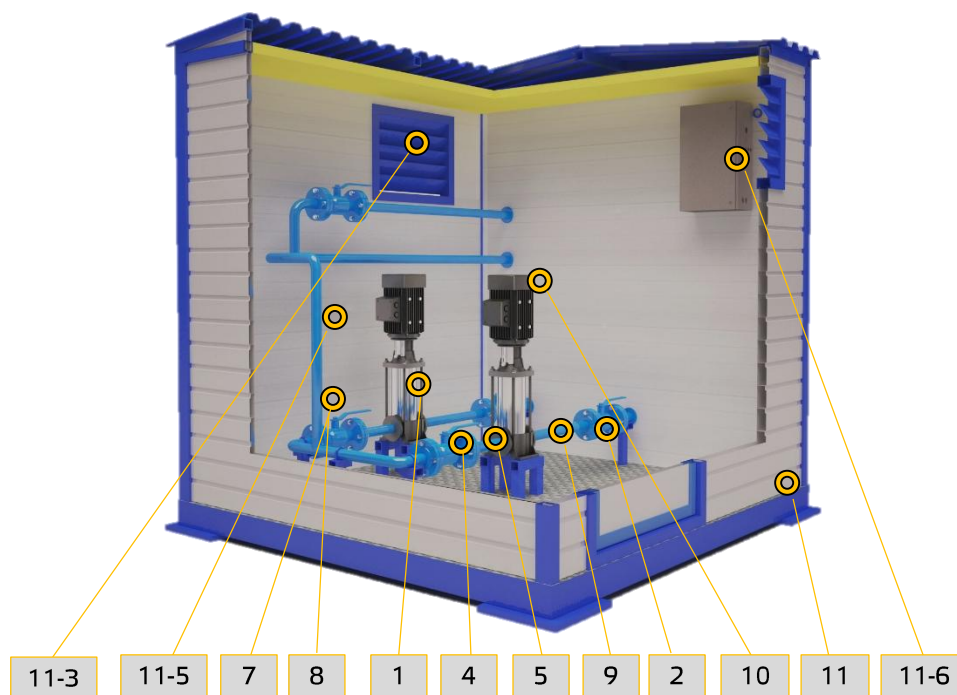
* – installed additionally upon customer's request

Note: items 18-1 to 18-7 are included into standard version of item 18.

Note: the specification is for the standard station, but it can be modified in accordance with project peculiarities.

Note: items 5, 9, 10, 11, 13, 14, 17, 18-1, 18-2, 18-4 and 18-7 are not shown.

Condensate pumping stations specification



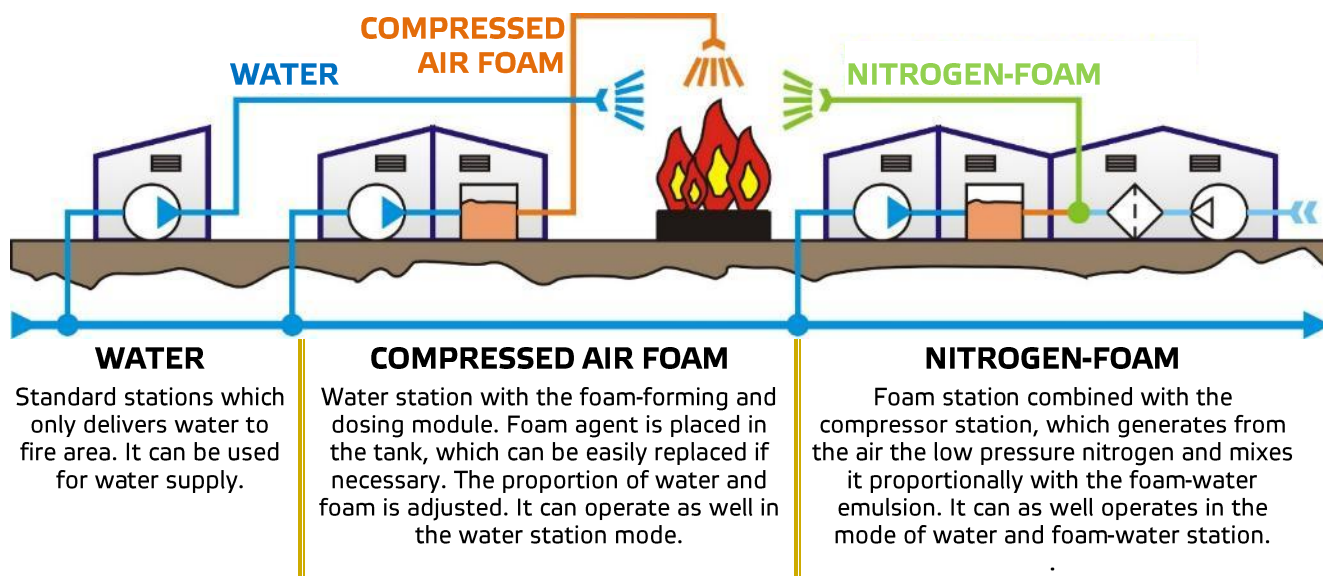
No.	Name	Type	Q-ty
1	Centrifugal electric pump unit	1Ks / CNStp / CR	1...4
2	Ball cock	PN16, d _y =32... 150 flanged full-bore	4...16
3	Ultrasonic flowmeter	1,5...300,0 m ³ /hour	1
4	Solenoid valve	PN16, d _y =32... 100 flanged solenoid n/c	1...4
5	Check valve	Cast Iron and SST PN16 d _y =100... 500 interflanged	1...4
6	Manometer	MPZU-6 PN0-16 showing	0...4
7	Pressure gauge	4...20 mA	1...4
8	Temperature sensor	4...20 mA	1...4
9	Screen filter	Cast Iron PN6 d _y =50... 150	1...4
10	Control system	Grundfos Control MPC / CHKZ+Schneider Electric	1
11	Block-container	2000x2000x3100 / 4500x2900x3100 / 6000x2900x3100	1...2
11-1	Fire extinguishing system	Powder fire extinguisher OSP-2	1...4
11-2	Lighting system	Luminous tube lamp 15W Halogen projector 500 W	2...8 1
11-3	Ventilation system	Shutter 600x800 Fan 300 W	1...4
11-4	Heating system	Electric convector 1,5 kW	1...4
11-5	Pipeline fitting	-	Set
11-6	In-house power cabinet	ShCN 2... 20 kW	1...2
11-7	Hand chain hoist	TRShB 1000 kg	1

Note: items 11-1 to 11-7 are included in the standard version of item 11.

Note: the specification is for the standard station, but it can be modified in accordance with project peculiarities.

Note: items. 3, 6, 11-1, 11-2, 11-4 and 11-7 are not shown.

Fire-extinguishing station versions



The principle of foam extinguishment action is based on **water and foam agent chemical reaction**, thanks to which highly adhesive foam is formed, i. e. the one which is able to be **attracted and held at the material surface**. When the foam is delivered to the hot material, it creates the solid layer, which prevents the oxygen access. Such way of fire extinguishment can be compared to covering the fire with the earth or covering the fire area with the counterpane.

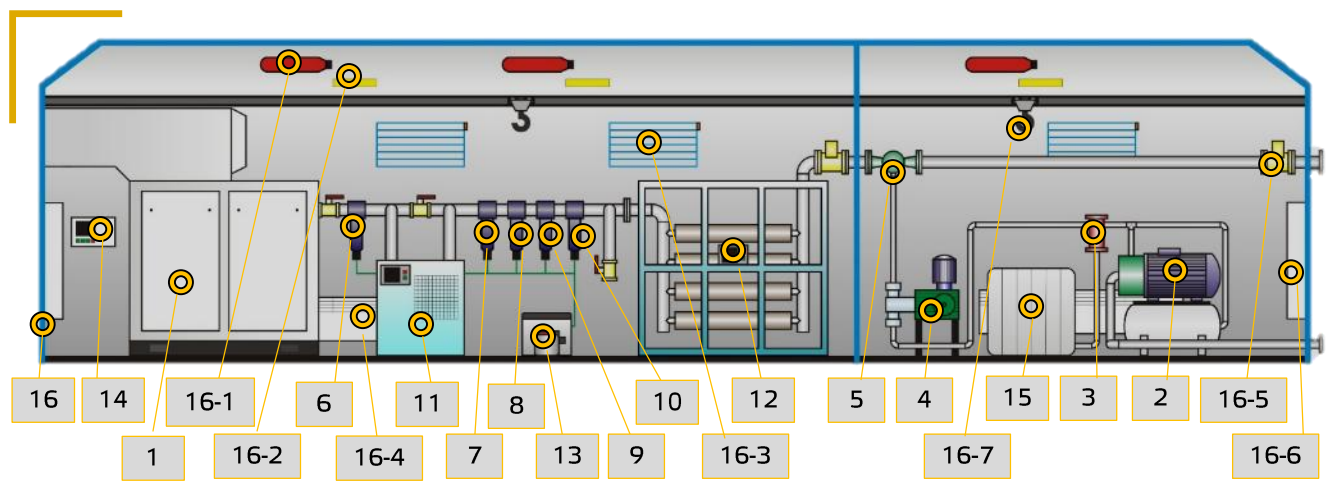
One of the important properties of the foam is **non-conductivity**, that is why foam extinguishment is used for the objects with electric equipment, machines, tools etc.

Compressed extinguishment has a number of advantages compared to water extinguishment, first of all thanks to reduced water flow along with far higher efficiency. Foam can be mixed up with the air, however in such systems the air does not stop the fire and is used mainly due to its availability. For fire extinguishment in the closed difficult-to-approach rooms, such as, pits, inflammable storages, etc It is reasonable to use nitrogen-foam extinguishment system, as it ensures triple effect:

1. Foam adhesion prevents from oxygen supply to the fire area.
2. Reduction of water volume – increase of extinguishment duration.
3. Air, which sustains combustion, is replaced by nitrogen.



Fire-extinguishing stations specification



No.	Description	Типоразмер (марка)	Q-ty
1	Screw compressor unit	DEN-15Sh Optim ... DEN-132ShM Optim	1
2	Centrifugal pump	K, 1K, 2K (cantilever)	1
3	Metering motor-pump	MNPd	1
4	Piston type pump	NVD	1
5	Mixer	Gas-liquid jet	1
6	Cyclone separator	CS	1
7	Air filter	FV-1	1
8	Air filter	FV-0,01	1
9	Air filter	FV-0,001	1
10	Coal air filter	FV-0,003	1
11	Refrigerated air dryer	OVR	1
12	Gas separation unit	AMU	1
13	Oil/water separator	UFS	1
14	Control system	Metacentre SX+ CHKZ+Schneider Electric	1
15	Tank	reinforced plastic 1 m ³ / 2 m ³	1
16	Block-container	8000x2300x2900 / 10000x2300x2900 / 2000x2300x2900	1
16-1	Fire extinguisher	Powder OSP-2	6...12
16-2	Lightning system	Fluorescent lamp 15 W Halogen projector 500 W	4...40 1
16-3	Ventilation system	Shutter 600x800 + fan 300 W	3...6
16-4	Heating system	Electric convection heater 1,5 kW	4...8
16-5	Pipeline fittings	-	Компл.
16-6	In-house cabinet	ShCN	1
16-7	Hand chain hoist	TRShB 1000 kg / TRShB 2000 kg	1

Note: item 16-1 – 16-7 are included in the standard version item 16.

Designation interpretation

CNP-2N.60.160.63AC12.3

- CNP** – station model;
2 – number of pumps (1 to 6);
N – application (**N** – general application; **P** – fire-extinguishing; **V** – water recycling supply; **D** – maintenance of reservoir pressure; **K** – condensate pumping; **M** – oil products pumping; **H** – chemical pumping)
60 – max. discharge head, m;
160 – max. delivery, m³/hour
63 – max power if all the equipment and devices operate (back-up machines and equipment are not taken into consideration), kW;
A – suction conditions (**A** – directly without any additional devices; **B** – ejector with vacuum liquid-packed ring pump; **V** – ejector with pre-filled tank; **G** – mechanical impurities separator);
S – mobility (**S** – stationary; **Sh** – chassis);
1 – drive type (**1** – asynchronous electric, **2** – diesel);
2 – centrifugal pump type (**1** – cantilevered, **2** – double entry, **3** – multistage horizontal, **4** – multistage vertical);
3 – station automation degree (**1** – small functional ... **4** – max functional).



ATTACHMENT 1. DEN MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
DEN-4 Economy(0,6/0,7)	0,58	0,70	4,0	0,12	600x750x650	150
DEN-4 Economy(0,5/1,0)	0,45	1,00	4,0	0,09	600x750x650	150
DEN-4 Economy(0,3/1,3)	0,32	1,30	4,0	0,07	600x750x650	150
DEN-5,5 Economy(0,8/0,7)	0,75	0,70	5,5	0,16	600x750x650	150
DEN-5,5 Economy(0,6/1,0)	0,60	1,00	5,5	0,11	600x750x650	150
DEN-5,5 Economy(0,5/1,3)	0,47	1,30	5,5	0,06	600x750x650	150
DEN-7,5 Economy(1,0/0,7)	1,05	0,70	7,5	0,18	600x750x650	170
DEN-7,5 Economy(0,8/1,0)	0,80	1,00	7,5	0,13	600x750x650	170
DEN-7,5 Economy(0,7/1,3)	0,65	1,30	7,5	0,08	600x750x650	170
DEN-5,5Sh (0,8/0,7)	0,80	0,70	5,5	0,16	950x600x750	200
DEN-5,5Sh (0,5/1,0)	0,50	1,00	5,5	0,11	950x600x750	200
DEN-5,5Sh (0,4/1,3)	0,40	1,30	5,5	0,06	950x600x750	200
DEN-5,5Sh-R (0,8/0,7/250 l)	0,80	0,70	5,5	0,16	1400x650x1450	240
DEN-5,5Sh-R (0,5/1,0/250 l)	0,50	1,00	5,5	0,11	1400x650x1450	240
DEN-5,5Sh-R (0,4/1,3/250 l)	0,40	1,30	5,5	0,06	1400x650x1450	240
DEN-5,5Sh-R (0,8/0,7/500 l)	0,80	0,70	5,5	0,16	1800x650x1450	270
DEN-5,5Sh-R (0,5/1,0/500 l)	0,50	1,00	5,5	0,11	1800x650x1450	270
DEN-5,5Sh-R (0,4/1,3/500 l)	0,40	1,30	5,5	0,06	1800x650x1450	270
DEN-5,5Sh-OR (0,8/0,7)	0,80	0,70	5,5	0,16	1800x650x1450	300
DEN-5,5Sh-OR (0,5/1,0)	0,50	1,00	5,5	0,11	1800x650x1450	300
DEN-5,5Sh-OR (0,4/1,3)	0,40	1,30	5,5	0,06	1800x650x1450	300
DEN-7,5Sh (1,2/0,7)	1,16	0,70	7,5	0,18	950x600x750	250
DEN-7,5Sh (0,8/1,0)	0,80	1,00	7,5	0,13	950x600x750	250
DEN-7,5Sh (0,5/1,3)	0,50	1,30	7,5	0,08	950x600x750	250
DEN-7,5Sh-R (1,2/0,7/500 l)	1,16	0,70	7,5	0,18	1800x650x1450	500
DEN-7,5Sh-R(0,8/1,0/500 l)	0,80	1,00	7,5	0,13	1800x650x1451	500
DEN-7,5Sh-R(0,5/1,3/500 l)	0,50	1,30	7,5	0,08	1800x650x1452	500
DEN-7,5Sh-OR (1,2/0,7/500 l)	1,16	0,70	7,5	0,18	1800x650x1453	520
DEN-7,5Sh-OR (0,8/1,0/500 l)	0,80	1,00	7,5	0,13	1800x650x1454	520
DEN-7,5Sh-OR (0,5/1,3/500 l)	0,50	1,30	7,5	0,08	1800x650x1455	520
DEN-11Sh (1,9/0,7)	1,85	0,70	11,0	0,30	950x600x751	270
DEN-11Sh (1,6/1,0)	1,60	1,00	11,0	0,26	950x600x752	270
DEN-11Sh (1,4/1,3)	1,40	1,30	11,0	0,22	950x600x753	270
DEN-11Sh-R (1,9/0,7/500 l)	1,85	0,70	11,0	0,30	1800x650x1450	500
DEN-11Sh-R (1,6/1,0/500 l)	1,60	1,00	11,0	0,26	1800x650x1451	500
DEN-11Sh-R (1,4/1,3/500 l)	1,40	1,30	11,0	0,22	1800x650x1452	500
DEN-11 Sh-OR (1,9/0,7/500 l)	1,85	0,70	11,0	0,30	1800x650x1453	530
DEN-11Sh-OR (1,6/1,0/500 l)	1,60	1,00	11,0	0,26	1800x650x1454	530
DEN-11Sh-OR (1,4/1,3/500 l)	1,40	1,30	11,0	0,22	1800x650x1455	530
DEN-15Sh (2,7/0,8)	2,70	0,75	15,0	0,57	1200x800x1000	505
DEN-15Sh (2,4/1,0)	2,40	1,00	15,0	0,50	1200x800x1000	505
DEN-15Sh (2,1/1,3)	2,10	1,30	15,0	0,44	1200x800x1000	505
DEN-15Sh-R (2,7/0,8/500 l)	2,70	0,75	15,0	0,57	1800x1800x1750	710
DEN-15Sh-R (2,4/0,8/500 l)	2,40	1,00	15,0	0,50	1800x1800x1751	710
DEN-15Sh-R (2,1/1,3/500 l)	2,10	1,30	15,0	0,44	1800x1800x1752	710
DEN-15Sh-R (2,7/0,8/900 l)	2,70	0,75	15,0	0,57	2050x800x1900	820
DEN-15Sh-R (2,4/1,0/900 l)	2,40	1,00	15,0	0,50	2050x800x1901	820
DEN-15Sh-R (2,1/1,3/900 l)	2,10	1,30	15,0	0,44	2050x800x1902	820
DEN-15Sh-OR (2,7/0,8/500 l)	2,70	0,75	15,0	0,57	1850x800x1750	750
DEN-15 Sh-OR (2,4/1,0/500 l)	2,40	1,00	15,0	0,50	1850x800x1751	750
DEN-15Sh-OR (2,1/1,3/500 l)	2,10	1,30	15,0	0,44	1850x800x1752	750
DEN-15Sh-OR (2,7/0,8/900 l)	2,70	0,75	15,0	0,57	2150x800x1900	870
DEN-15Sh-OR (2,4/1,0/900 l)	2,40	1,00	15,0	0,50	2150x800x1901	870
DEN-15Sh-OR (2,1/1,3/900 l)	2,10	1,30	15,0	0,44	2150x800x1902	870
DEN-18Sh (3,1/0,8)	3,10	0,75	18,5	0,65	1200x800x1000	515
DEN-18Sh (2,7/1,0)	2,70	1,00	18,5	0,57	1200x800x1000	515
DEN-18Sh (2,2/1,3)	2,20	1,30	18,5	0,46	1200x800x1000	515
DEN-18Sh-R (3,1/0,8/500 l)	3,10	0,75	18,5	0,65	1800x1800x1750	720
DEN-18Sh-R (2,7/1,0/500 l)	2,70	1,00	18,5	0,57	1800x1800x1751	720
DEN-18Sh-R (2,2/1,3/500 l)	2,20	1,30	18,5	0,46	1800x1800x1752	720
DEN-18Sh-R (3,1/0,8/900 l)	3,10	0,75	18,5	0,65	2050x800x1900	830
DEN-18Sh-R (2,7/1,0/900 l)	2,70	1,00	18,5	0,57	2050x800x1901	830
DEN-18Sh-R (2,2/1,3/900 l)	2,20	1,30	18,5	0,46	2050x800x1902	830
DEN-18Sh-OR (3,1/0,8/500 l)	3,10	0,75	18,5	0,65	1850x800x1750	780
DEN-18Sh-OR (2,7/1,0/500 l)	2,70	1,00	18,5	0,57	1850x800x1751	780
DEN-18Sh-OR (2,2/1,3/500 l)	2,20	1,30	18,5	0,46	1850x800x1752	780
DEN-18Sh-OR (2,7/1,0/900 l)	2,70	1,00	18,5	0,57	2150x800x1901	890



Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
DEN-18Sh-OR (2,2/1,3/900 l)	2,20	1,30	18,5	0,46	2150x800x1902	890
DEN-22Sh (3,8/0,8)	3,80	0,75	22,0	0,80	1200x800x1000	525
DEN-22Sh (3,4/1,0)	3,40	1,00	22,0	0,71	1200x800x1000	525
DEN-22Sh (3,0/1,3)	3,00	1,30	22,0	0,63	1200x800x1000	525
DEN-22Sh-R (3,8/0,8/500 l)	3,80	0,75	22,0	0,80	1800x1800x1750	730
DEN-22Sh-R (3,4/1,0/500 l)	3,40	1,00	22,0	0,71	1800x1800x1751	730
DEN-22Sh-R (3,0/1,3/500 l)	3,00	1,30	22,0	0,63	1800x1800x1752	730
DEN-22Sh-R (3,8/0,8/900 l)	3,80	0,75	22,0	0,80	2050x800x1900	850
DEN-22Sh-R (3,4/1,0/900 l)	3,40	1,00	22,0	0,71	2050x800x1901	850
DEN-22Sh-R (3,0/1,3/900 l)	3,00	1,30	22,0	0,63	2050x800x1902	850
DEN-22Sh-OR (3,8/0,8/500 l)	3,80	0,75	22,0	0,80	1850x800x1750	790
DEN-22Sh-OR (3,4/1,0/500 l)	3,40	1,00	22,0	0,71	1850x800x1751	790
DEN-22Sh-OR (3,0/1,3/500 l)	3,00	1,30	22,0	0,63	1850x800x1752	790
DEN-22Sh-OR (3,8/0,8/900 l)	3,80	0,75	22,0	0,80	2150x800x1900	910
DEN-22Sh-OR (3,4/1,0/900 l)	3,40	1,00	22,0	0,71	2150x800x1901	910
DEN-22Sh-OR (3,0/1,3/900 l)	3,00	1,30	22,0	0,63	2150x800x1902	910
DEN-30Sh (4,2/0,8)	4,22	0,75	30,0	0,82	1200x800x1000	525
DEN-30Sh (3,7/1,0)	3,70	1,00	30,0	0,73	1200x800x1000	525
DEN-30Sh (3,2/1,3)	3,20	1,30	30,0	0,69	1200x800x1000	525
DEN-30Sh+ (5,7/0,8)	5,70	0,75	30,0	1,03	1200x1000x1400	850
DEN-30Sh+ (5,0/1,0)	5,00	1,00	30,0	0,90	1200x1000x1400	850
DEN-30Sh+ (4,2/1,3)	4,20	1,30	30,0	0,75	1200x1000x1400	850
DEN-37Sh (6,5/0,8)	6,50	0,75	37,0	1,17	1200x1000x1400	850
DEN-37Sh (5,7/1,0)	5,70	1,00	37,0	1,02	1200x1000x1400	850
DEN-37Sh (4,7/1,3)	4,70	1,30	37,0	0,85	1200x1000x1400	850
DEN-45Sh (7,5/0,8)	7,50	0,75	45,0	1,57	1650x1200x1500	1050
DEN-45Sh (6,5/1,0)	6,50	1,00	45,0	1,35	1650x1200x1500	1050
DEN-45ShM (7,0/0,7)	7,00	0,70	45,0	1,37	1650x100x1550	850
DEN-45ShM (6,5/1,0)	6,50	1,00	45,0	1,35	1650x100x1550	850
DEN-55Sh (10,0/0,8)	10,00	0,75	55,0	2,00	1650x1200x1500	1300
DEN-55Sh (8,9/1,0)	8,85	1,00	55,0	1,86	1650x1200x1500	1300
DEN-55Sh (7,8/1,3)	7,80	1,30	55,0	1,64	1650x1200x1500	1300
DEN-75Sh (12,0/0,7)	12,00	0,70	75,0	2,52	1650x1200x1500	1300
DEN-75Sh (9,7/1,0)	9,70	1,00	75,0	2,04	1650x1200x1500	1300
DEN-75Sh (7,8/1,3)	7,80	1,30	75,0	1,64	1650x1200x1500	1300
DEN-75Sh+ (13,5/0,8)	13,50	0,75	75,0	2,40	2000x1350x1650	1400
DEN-75Sh+ (11,5/1,0)	11,50	1,00	75,0	2,40	2000x1350x1650	1400
DEN-75Sh+ (9,8/1,3)	9,80	1,30	75,0	1,80	2000x1350x1650	1400
DEN-90Sh (13,8/0,8)	13,80	0,75	90,0	2,70	2000x1350x1650	1400
DEN-90Sh (11,7/1,0)	11,70	1,00	90,0	2,30	2000x1350x1650	1400
DEN-90Sh (10,2/1,3)	10,20	1,30	90,0	1,95	2000x1350x1650	1400
DEN-90Sh+ (15,5/0,8)	15,50	0,75	90,0	2,80	2000x1350x1650	1700
DEN-90Sh+ (14,0/1,0)	14,00	1,00	90,0	2,50	2000x1350x1650	1700
DEN-90Sh+ (11,6/1,3)	11,60	1,30	90,0	2,10	2000x1350x1650	1700
DEN-110Sh (19,0/0,8)	19,00	0,75	110,0	3,40	2000x1350x1650	1900
DEN-110Sh (16,8/1,0)	16,80	1,00	110,0	3,00	2000x1350x1650	1900
DEN-110Sh (13,5/1,3)	13,50	1,30	110,0	2,40	2000x1350x1650	1900
DEN-132ShM (22,5/0,7)	22,50	0,70	132,0	4,30	2500x1450x1850	2400
DEN-132ShM (16,5/1,0)	16,50	1,00	132,0	3,47	2500x1450x1850	2400
DEN-132ShM+ (24,0/0,8)	24,00	0,75	132,0	5,04	2950x1800x2000	3100
DEN-132ShM+ (19,0/1,0)	19,00	1,00	132,0	3,99	2950x1800x2000	3100
DEN-160ShM (29,0/0,8)	29,00	0,75	160,0	6,09	2950x1800x2000	3650
DEN-160ShM (26,5/1,0)	26,50	1,00	160,0	5,56	2950x1800x2000	3650
DEN-200ShM (35,5/0,8)	35,50	0,75	200,0	7,35	2950x1800x2000	3750
DEN-200ShM (27,0/1,0)	27,00	1,00	200,0	5,67	2950x1800x2000	3750
DEN-250ShM (42,0/0,7)	42,00	0,70	250,0	8,82	3400x2100x2100	4650
DEN-315ShM (54,0/0,7)	54,00	0,70	315,0	11,34	3500x2100x2200	5170
DEN-315ShM (42,0/1,0)	42,00	1,00	315,0	8,82	3400x2100x2100	4650
DEN-400ShM (54,0/0,8)	54,00	0,80	340,0	11,34	3400x2100x2101	5170



ATTACHMENT 2. KV MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KV-3/8 (2,5/1,2)	2,50	1,20	24,2	0,63	1700x1300x1100	750
KV-3/8P (2,5/1,2)	2,50	1,20	24,2	0,63	3100x1600x1350	800
KV-5/10 (5,0/1,0)	5,00	1,00	35,8	0,97	2000x1300x1150	750
KV-5/10P (5,0/1,0)	5,00	1,00	35,8	0,97	3100x1600x1500	800
KV-6/7 (6,00/0,7)	6,00	0,70	35,8	1,16	2000x1300x1150	750
KV-6/7P (6,00/0,7)	6,00	0,70	35,8	1,16	3100x1600x1500	800
KV-10/8 (10,00/0,8)	10,00	0,80	80,0	2,10	2900x1350x1700	1500
KV-10/8P (10,00/0,8)	10,00	0,80	80,0	2,10	3800x1850x1900	1600
KV-10/16 (8,0/1,5)	8,00	1,50	132,0	2,10	3050x1500x1650	2300
KV-10/16P (8,0/1,5)	8,00	1,50	132,0	2,10	4350x1900x1900	2440
KV-10/10 (10,0/1,0)	10,00	1,00	80,0	2,10	2900x1350x1700	1500
KV-10/10P (10,0/1,0)	10,00	1,00	80,0	2,10	3800x1850x1900	1600
KV-10/10C (10,0/1,0)	10,00	1,00	80,0	2,10	2500x950x1200	1500
KV-12/10 (12,0/1,0)	12,00	1,00	103,0	2,52	2900x1350x1700	1500
KV-12/10P (12,0/1,0)	12,00	1,00	103,0	2,52	3800x1850x1900	1600
KV-12/10C (12,0/1,0)	12,00	1,00	103,0	2,52	2500x1150x1200	1500
KV-12/12 (12,0/1,2)	12,00	1,20	132,0	2,52	3050x1500x1650	2300
KV-12/12P (12,0/1,2)	12,00	1,20	132,0	2,52	4350x1900x1900	2440
KV-12/12C (12,0/1,2)	12,00	1,20	132,0	2,52	2500x1400x1250	2450
KV-20/25 (20,0/2,5)	20,00	2,50	243,0	4,20	4050x2050x2350	3600
KV-20/25P (20,0/2,5)	20,00	2,50	243,0	4,20	6050x2030x2450	4200
KV-20/30 (20,0/3,0)	20,00	3,00	294,0	4,20	4050x2050x2350	4500
KV-20/30P (20,0/3,0)	20,00	3,00	294,0	4,20	6050x2030x2450	4800
KV-25/10 (25,0/1,0)	25,00	1,00	243,0	5,20	4050x2050x2350	3600
KV-25/10P (25,0/1,0)	25,00	1,00	243,0	5,20	6050x2030x2450	4200
KV-25/16 (25,0/1,6)	25,00	1,60	243,0	5,20	4050x2050x2350	4500
KV-25/16P (25,0/1,6)	25,00	1,60	243,0	5,20	6050x2030x2450	4800
KV-30/10 (30,0/1,0)	30,00	1,00	243,0	6,30	4050x2050x2350	4500
KV-30/10P (30,0/1,0)	30,00	1,00	243,0	6,30	6050x2030x2450	4800

ATTACHMENT 3. DEN "MINER" MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
DEN-5,5ShM "Miner" (0,8/0,7)	0,80	0,70	5,5	0,16	1250x600x1250	350
DEN-7,5ShM "Miner" (1,2/0,7)	1,20	0,70	7,5	0,18	1050x600x950	370
DEN-45ShM "Miner" (6,5/0,7)	6,50	0,70	45,0	1,35	2000x900x1100	1300
DEN-45ShM "Miner" (7,1/0,7)	7,10	0,70	45,0	1,38	1700x900x1100	1150
DEN-75ShM "Miner" (11,0/0,7)	11,00	0,70	75,0	2,30	2300x1050x1100	1770
DEN-110ShM "Miner" (15,4/0,7)	15,40	0,70	110,0	2,75	2910x1100x1400	2600
DEN-132ShM "Miner" (22,0/0,7)	22,00	0,70	132,0	4,20	3100x1500x1800	3600
DEN-200ShM "Miner" (27,0/1,0)	27,00	1,00	200,0	5,67	3000x1800x2400	4300

ATTACHMENT 4. DEN "EX" MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
DEN-7,5Sh "Ex" (1,2/0,7)	1,20	0,70	7,5	0,18	950x600x1100	425
DEN-7,5Sh "Ex" (0,8/1,0)	0,80	1,00	7,5	0,16	950x600x1101	425
DEN-7,5ShM "Ex" (1,2/0,7)	1,20	0,70	7,5	0,18	950x600x1102	425
DEN-7,5ShM "Ex" (0,8/1,0)	0,80	1,00	7,5	0,16	950x600x1103	425
DEN-11Sh "Ex" (1,7/0,7)	1,70	0,70	11,0	0,28	950x600x1104	445
DEN-11Sh "Ex" (1,2/1,0)	1,20	1,00	11,0	0,18	950x600x1105	445
DEN-11ShM "Ex" (1,7/0,7)	1,70	0,70	11,0	0,28	950x600x1106	445
DEN-11ShM "Ex" (1,2/1,0)	1,20	1,00	11,0	0,18	950x600x1107	445
DEN-18Sh "Ex" (2,6/1,0)	2,60	1,00	18,0	0,52	1300x800x1250	515
DEN-18ShM "Ex" (2,6/1,0)	2,60	1,00	18,0	0,52	1300x800x1251	515
DEN-30Sh "Ex" (5,0/1,0)	5,00	1,00	30,0	0,80	1200x1200x1550	850
DEN-30ShM "Ex" (5,0/1,0)	5,00	1,00	30,0	0,80	1200x1200x1551	850
DEN-132ShM "Ex" (22,5/0,7)	22,50	0,70	132,0	4,30	2500x1450x1850	2400
DEN-132ShM "Ex" (16,5/1,0)	16,50	1,00	132,0	3,47	2500x1450x1851	2400



ATTACHMENT 5. KP MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KP-125/40 (0,1/4,0)	0,13	4,00	2,2	-	650x500x650	107
KP-200/40 (0,2/4,0)	0,20	4,00	4,0	-	650x500x650	107
KP-245/40 (0,3/4,0)	0,25	4,00	4,0	-	650x500x650	112
KP-500/40 (0,5/4,0)	0,50	4,00	7,5	-	850x650x700	200
KP-600/40 (0,6/4,0)	0,60	4,00	9,0	-	850x650x700	200
KP-1100/40 (1,1/4,0)	1,10	4,00	18,5	-	1300x900x950	410
KP-2400/40 (2,4/4,0)	2,40	4,00	30,0	-	1500x1100x1100	590
KP-2400/50 (2,4/4,0)	2,40	4,00	37,0	-	1600x1100x1100	670
KP-3020/40 (3,0/4,0)	3,02	4,00	45,0	-	1600x1100x1100	690
KP-210/63 (0,2/6,3)	0,21	6,30	4,0	-	650x500x550	120
KP-215/63 (0,2/6,3)	0,22	6,30	3,5	-	1150x850x1550	345
KP-670/63 (0,7/6,3)	0,67	6,30	11,0	-	2100x750x1250	450
KP-950/63 (1,0/6,3)	0,95	6,30	15,0	-	2100x750x1250	460
KP-1100/63 (1,1/6,3)	1,10	6,30	18,5	-	1300x900x950	410
KP-1350/63 (1,4/6,3)	1,35	6,30	22,0	-	2250x800x1200	670
KP-1730/63 (1,8/6,3)	1,73	6,30	30,0	-	2250x800x1200	740
KP-2400/63 (2,4/6,3)	2,40	6,30	37,0	-	3100x1250x1700	1430
KP-2850/63 (2,9/6,3)	2,85	6,30	45,0	-	3100x1250x1700	1460
KP-3400/63 (3,4/6,3)	3,40	6,30	55,0	-	3100x1250x1700	1500
KP-4700/63 (4,7/6,3)	4,70	6,30	75,0	-	3100x1250x1700	1990
KP-3570/63 (3,5/6,3)	3,57	6,30	55,0	-	3050x1300x1550	2500
KP-5400/63 (5,4/6,3)	5,40	6,30	90,0	-	3050x1300x1550	3500
KP-5900/63 (5,9/6,3)	5,90	6,30	90,0	-	3100x1250x1700	2080
KP-6800/63 (6,8/6,3)	6,80	6,30	110,0	-	3100x1250x1700	2330
KP-130/75 (0,1/7,5)	0,13	7,50	2,0	-	1050x750x1300	335
KP-170/75 (0,2/7,5)	0,17	7,50	3,0	-	1150x850x1550	340
KP-215/75 (0,2/7,5)	0,22	7,50	4,0	-	1150x850x1550	345
KP-850/75 (0,9/7,5)	0,85	7,50	15,0	-	2100x750x1250	460
KP-1250/75 (1,3/7,5)	1,25	7,50	22,0	-	2250x800x1200	670
KP-1700/75 (1,7/7,5)	1,70	7,50	30,0	-	2250x800x1200	735
KP-2000/75 (2,0/7,5)	2,00	7,50	37,0	-	3100x1250x1700	1430
KP-2600/75 (2,6/7,5)	2,60	7,50	45,0	-	3100x1250x1700	1460
KP-3300/75 (3,3/7,5)	3,30	7,50	55,0	-	3100x1250x1700	1500
KP-1100/80 (1,1/8,0)	1,10	8,00	18,5	-	1300x900x950	590
KP-2000/80 (2,0/8,0)	2,00	8,00	30,0	-	1500x1100x1100	590
KP-2500/80 (2,5/8,0)	2,50	8,00	45,0	-	3050x1300x1550	1780
KP-3300/80 (3,3/8,0)	3,30	8,00	55,0	-	3050x1300x1550	1800
KP-140/90 (0,1/9,0)	0,14	9,00	3,0	-	1150x850x1550	335
KP-215/90 (0,2/9,0)	0,22	9,00	4,0	-	1150x850x1550	345
KP-650/90 (0,7/9,0)	0,65	9,00	11,0	-	2100x750x1250	480
KP-800/90 (0,8/9,0)	0,80	9,00	15,0	-	2100x750x1250	490
KP-950/90 (1,0/9,0)	0,95	9,00	18,5	-	2100x750x1250	510
KP-1600/90 (1,6/9,0)	1,60	9,00	30,0	-	3050x1300x1550	1650
KP-2000/90 (2,0/9,0)	2,00	9,00	37,0	-	3050x1300x1550	1720
KP-2500/90 (2,5/9,0)	2,50	9,00	45,0	-	3050x1300x1550	1780
KP-3300/90 (3,3/9,0)	3,30	9,00	55,0	-	3050x1300x1550	1800
KP-1100/120 (1,1/12,0)	1,10	12,00	22,0	-	1400x900x950	590
KP-270/150 (0,3/15,0)	0,27	15,00	5,5	-	800x650x650	200
KP-1100/150 (1,1/15,0)	1,10	15,00	22,0	-	1400x1050x1100	590
KP-225/250 (0,2/25,0)	0,23	25,00	5,5	-	800x650x650	167
KP-300/250 (0,3/25,0)	0,30	25,00	7,5	-	1200x750x850	285
KP-455/250 (0,5/25,0)	0,46	25,00	9,0	-	1200x750x850	195
KP-585/250 (0,6/25,0)	0,59	25,00	15,0	-	1250x900x950	440
KP-705/250 (0,7/25,0)	0,71	25,00	18,5	-	1250x900x950	470
KP-1100/250 (1,1/25,0)	1,10	25,00	30,0	-	1500x1100x1100	600
KP-1400/250 (1,4/25,0)	1,40	25,00	37,0	-	1600x1100x1100	690
KP-85/350 (0,1/35,0)	0,09	35,00	3,0	-	1050x750x1300	345
KP-225/350 (0,2/35,0)	0,23	35,00	5,5	-	800x650x650	167
KP-290/350 (0,3/35,0)	0,29	35,00	9,0	-	1200x750x850	285
KP-445/350 (0,5/35,0)	0,45	35,00	11,0	-	1200x750x850	295
KP-575/350 (0,6/35,0)	0,58	35,00	15,0	-	1250x900x950	440
KP-700/350 (0,7/35,0)	0,70	35,00	18,5	-	1250x900x950	470
KP-1100/350 (1,1/35,0)	1,10	35,00	30,0	-	1500x1100x1100	600
KP-1400/350 (1,4/35,0)	1,40	35,00	37,0	-	1600x1100x1100	690
KP-1900/350 (1,9/35,0)	1,90	35,00	45,0	-	3200x1350x1600	1750
KP-2200/350 (2,2/35,0)	2,20	35,00	50,0	-	3200x1350x1600	2300



Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KP-2500/350 (5,5/35,0)	5,50	35,00	55,0	-	3100x1300x1550	2300
KP-2700/350 (2,7/35,0)	2,70	35,00	45,0	-	3100x1300x1550	1900
KP-3500/350 (3,5/35,0)	3,50	35,00	75,0	-	3100x1300x1550	1950
KP-3660/350 (3,7/35,0)	3,66	35,00	90,0	-	3100x1300x1550	2500
KP-4500/350 (4,5/35,0)	4,50	35,00	110,0	-	3200x1800x2000	4000
KP-5400/350 (5,4/35,0)	5,40	35,00	132,0	-	3200x1800x2000	4000
KP-6800/350 (6,8/35,0)	6,80	35,00	160,0	-	3200x1800x2000	4000
KP-10800/350 (10,8/35,0)	10,80	35,00	200,0	-	3200x1800x2000	4800
KP-310/500 (0,3/50,0)	0,31	50,00	7,5	-	1150x850x1550	440
KP-420/500 (0,4/50,0)	0,42	50,00	11,0	-	1150x850x1550	450
KP-550/500 (0,6/50,0)	0,55	50,00	15,0	-	1150x850x1550	480
KP-1900/500 (1,9/50,0)	1,90	50,00	45,0	-	3200x1350x1600	1930
KP-2300/500 (2,3/50,0)	2,30	50,00	55,0	-	3200x1350x1600	1950

ATTACHMENT 6. KP-D MODEL RANGE

Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KP-1/40D (1,8/2,5)	1,80	2,50	11,0	0,50	1250x700x700	281
KP-1/40D (2,6/3,0)	2,60	3,00	15,0	0,75	1250x700x700	295
KP-1/40D (2,7/2,0)	2,70	2,00	11,0	0,75	1250x700x700	281
KP-1/40D (3,2/4,0)	3,20	4,00	15,0	1,00	1250x700x700	295
KP-1/40D (3,3/3,0)	3,30	3,00	15,0	1,00	1250x700x700	295
KP-1/40D (3,4/2,0)	3,40	2,00	15,0	1,00	1250x700x700	295
KP-1/40D1 (1,0/2,5)	1,00	2,50	11,0	0,50	1250x700x700	281
KP-1/40D1 (1,4/4,0)	1,40	4,00	15,0	0,75	1250x700x700	295
KP-1/40D1 (1,5/3,0)	1,50	3,00	15,0	0,75	1250x700x700	295
KP-1/40D1 (1,6/2,0)	1,60	2,00	11,0	0,75	1250x700x700	281
KP-1/40D1 (1,8/4,0)	1,80	4,00	15,0	1,00	1250x700x700	295
KP-1/40D1 (1,9/3,0)	1,90	3,00	15,0	1,00	1250x700x700	295
KP-1/40D1 (2,0/2,0)	2,00	2,00	15,0	1,00	1250x700x700	295
KP-1/40D1 (2,3/4,0)	2,30	4,00	15,0	1,30	1250x700x700	295
KP-1/40D1 (2,4/3,0)	2,40	3,00	15,0	1,30	1250x700x700	295
KP-1/40D1 (2,5/2,0)	2,50	2,00	15,0	1,30	1250x700x700	295
KP-1/40D2 (3,8/4,0)	3,80	4,00	22,0	0,75	1400x850x950	420
KP-1/40D2 (4,0/3,0)	4,00	3,00	22,0	0,75	1400x850x950	420
KP-1/40D2 (4,2/2,0)	4,20	2,00	18,5	0,75	1350x850x950	385
KP-1/40D2 (5,3/4,0)	5,30	4,00	22,0	1,00	1400x850x950	420
KP-1/40D2 (5,6/3,0)	5,60	3,00	22,0	1,00	1400x850x950	420
KP-1/40D2 (5,8/2,0)	5,80	2,00	22,0	1,00	1400x850x950	420
KP-1/40D2 (6,8/4,0)	6,80	4,00	22,0	1,30	1400x850x950	420
KP-1/40D2 (7,2/3,0)	7,20	3,00	22,0	1,30	1400x850x950	420
KP-1/40D2 (7,6/2,0)	7,60	2,00	22,0	1,30	1400x850x950	420
KP-1/40D3 (10,0/4,0)	10,00	4,00	30,0	1,30	1550x950x950	440
KP-1/40D3 (10,5/3,0)	10,50	3,00	30,0	1,30	1550x950x950	440
KP-1/40D3 (11,1/2,0)	11,10	2,00	30,0	1,30	1550x950x950	440
KP-1/40D3 (5,8/4,0)	5,80	4,00	30,0	0,75	1550x950x950	440
KP-1/40D3 (6,1/3,0)	6,10	3,00	30,0	0,75	1550x950x950	440
KP-1/40D3 (6,4/2,0)	6,40	2,00	22,0	0,75	1450x950x950	428
KP-1/40D3 (7,9/4,0)	7,90	4,00	30,0	1,00	1550x950x950	440
KP-1/40D3 (8,3/3,0)	8,30	3,00	30,0	1,00	1550x950x950	440
KP-1/40D3 (8,7/2,0)	8,70	2,00	30,0	1,00	1550x950x950	440
KP-1/40D4 (13,1/4,0)	13,10	4,00	45,0	1,30	1650x1050x1000	545
KP-1/40D5 (13,0/2,0)	13,00	2,00	75,0	0,40	2500x1550x1800	3530
KP-1/40D5 (18,2/2,5)	18,20	2,50	90,0	0,60	2500x1550x1800	3530
KP-1/40D5 (23,4/3,0)	23,40	3,00	110,0	0,80	2500x1550x1800	3530
KP-1/40D5 (28,6/4,0)	28,60	4,00	160,0	1,00	2500x1550x1800	3530
KP-1/50D (0,6/2,5)	0,61	2,50	5,5	0,50	1150x850x1550	365
KP-1/50D (1,0/3,0)	0,95	3,00	5,5	0,75	1150x850x1550	365
KP-1/50D (1,81/5,0)	1,81	5,00	5,5	1,00	1150x850x1550	365
KP-1/50D1 (0,7/5,0)	0,70	5,00	7,5	0,75	1150x850x1550	375
KP-1/50D1 (1,1/5,0)	1,08	5,00	7,5	1,00	1150x850x1550	375
KP-1/50D1 (1,5/5,0)	1,53	5,00	7,5	1,30	1150x850x1550	375
KP-2/100D (11,2/10,0)	11,14	10,00	90,0	1,00	1950x1450x1400	2100
KP-2/100D (9,3/8,0)	9,33	8,00	90,0	0,80	1950x1450x1400	2100
KP-2/100D1 (11,7/10,0)	11,70	10,00	110,0	0,80	2500x1550x1800	3360
KP-2/100D1 (14,3/10,0)	14,30	10,00	132,0	1,00	2500x1550x1800	3360
KP-2/100D1 (6,5/5,0)	6,50	5,00	75,0	0,40	2500x1550x1800	3360



Unit size	Delivery, m3/min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KP-2/100D1 (9,1/6,3)	9,10	6,30	75,0	0,60	2500x1550x1800	3360
KP-2/150D (7,0/15,0)	7,00	15,00	75,0	0,70	2250x1250x1400	1950
KP-2/150D (7,9/15,0)	7,90	15,00	75,0	1,00	2250x1250x1400	1950
KP-2/350D (0,2/35,0)	0,20	35,00	5,5	0,50	1150x850x1550	365
KP-2/350D (0,3/35,0)	0,30	35,00	5,5	0,70	1150x850x1550	365
KP-2/350D (0,4/35,0)	0,39	35,00	5,5	0,90	1150x850x1550	365
KP-2/350D (0,5/35,0)	0,48	35,00	5,5	1,10	1150x850x1550	365
KP-2/350D1 (0,5/35,0)	0,51	35,00	11,0	0,70	1150x850x1550	450
KP-2/350D1 (0,6/35,0)	0,59	35,00	11,0	0,80	1150x850x1550	450
KP-2/350D1 (0,7/35,0)	0,67	35,00	11,0	0,90	1150x850x1550	450
KP-2/350D1 (0,8/35,0)	0,75	35,00	11,0	1,00	1150x850x1550	450
KP-2/63D (2,8/4,0)	2,80	4,00	37,0	0,40	1350x1200x2100	1170
KP-2/63D (3,9/5,0)	3,92	5,00	37,0	0,60	1350x1200x2100	1170
KP-2/63D (5,1/6,3)	5,05	6,30	37,0	0,80	1350x1200x2100	1170
KP-2/63D (6,2/6,3)	6,18	6,30	37,0	1,00	1350x1200x2100	1170
KP-2/75D (13,0/5,0)	13,00	5,00	110,0	0,60	2500x1550x1800	3530
KP-2/75D (16,6/6,3)	16,60	6,30	132,0	0,80	2500x1550x1800	3530
KP-2/75D (20,4/7,5)	20,40	7,50	160,0	1,00	2500x1550x1800	3530
KP-2/75D (9,2/4,0)	9,20	4,00	75,0	0,40	2500x1550x1800	3530
KP-2/80D (2,1/4,0)	2,06	4,00	37,0	0,40	1350x1200x2100	1160
KP-2/80D (2,9/6,0)	2,89	6,00	37,0	0,60	1350x1200x2100	1160
KP-2/80D (3,7/8,0)	3,70	8,00	37,0	0,80	1350x1200x2100	1160
KP-2/80D (4,5/8,0)	4,53	8,00	37,0	1,00	1350x1200x2100	1160
KP-2/80D (5,4/8,0)	5,36	8,00	37,0	1,20	1350x1200x2100	1160
KP-3/350D (0,5/35,0)	0,45	35,00	15,0	0,20	1150x850x1550	365
KP-3/350D (0,6/35,0)	0,63	35,00	15,0	0,30	1150x850x1550	365
KP-3/350D (0,8/35,0)	0,80	35,00	15,0	0,40	1150x850x1550	365
KP-3/350D1 (1,9/25,0)	1,85	25,00	37,0	1,60	1350x1200x2100	1180
KP-3/350D1 (2,3/30,0)	2,28	30,00	37,0	2,00	1350x1200x2100	1180
KP-3/350D1 (3,6/35,0)	3,60	35,00	37,0	3,00	1350x1200x2100	1180
KP-3/350D1 (4,5/35,0)	4,50	35,00	37,0	3,80	1350x1200x2100	1180
KP-4/350D (1,3/20,0)	1,33	20,00	37,0	0,20	1350x1200x2100	1150
KP-4/350D (1,8/30,0)	1,78	30,00	37,0	0,30	1350x1200x2100	1150
KP-4/350D (2,2/35,0)	2,22	35,00	37,0	0,40	1350x1200x2100	1150
KP-4/350D (2,4/35,0)	2,44	35,00	37,0	0,45	1350x1200x2100	1150
KP-4/350D1 (1,6/20,0)	1,55	20,00	37,0	0,45	1350x1200x2100	1180
KP-4/350D1 (2,0/30,0)	1,96	30,00	37,0	0,60	1350x1200x2100	1180
KP-4/350D1 (2,5/35,0)	2,50	35,00	37,0	0,80	1350x1200x2100	1180
KP-4/350D1 (3,1/35,0)	3,10	35,00	37,0	1,00	1350x1200x2100	1180
KP-4/350D10 (13,4/35,0)	13,40	35,00	250,0	0,30	3200x1800x2000	4800
KP-4/350D10 (17,0/35,0)	17,00	35,00	250,0	0,40	3200x1800x2000	4800
KP-4/350D10 (18,8/35,0)	18,80	35,00	315,0	0,45	3200x1800x2000	4800
KP-4/350D10 (9,8/20,0)	9,80	20,00	160,0	0,20	3200x1800x2000	4800
KP-4/350D11 (10,2/25,0)	10,20	25,00	160,0	0,45	3200x1800x2000	4330
KP-4/350D11 (13,3/35,0)	13,00	35,00	200,0	0,60	3200x1800x2000	4330
KP-4/350D11 (16,6/35,0)	16,60	35,00	250,0	0,80	3200x1800x2000	4330
KP-4/350D11 (20,4/35,0)	20,40	35,00	250,0	1,00	3200x1800x2000	4330
KP-4/350D12 (15,2/35,0)	15,20	35,00	200,0	1,00	3200x1800x2000	4330
KP-4/350D12 (18,0/35,0)	18,00	35,00	200,0	1,20	3200x1800x2000	4330
KP-4/350D12 (20,7/35,0)	20,70	35,00	250,0	1,40	3200x1800x2000	4330
KP-4/350D12 (24,8/35,0)	24,80	35,00	250,0	1,70	3200x1800x2000	4330
KP-4/350D13 (10,2/35,0)	10,20	35,00	110,0	1,70	3200x1800x2000	4200
KP-4/350D13 (12,0/35,0)	12,00	35,00	132,0	2,00	3200x1800x2000	4200
KP-4/350D13 (18,6/35,0)	18,60	35,00	160,0	3,00	3200x1800x2000	4200
KP-4/350D13 (23,4/35,0)	23,40	35,00	200,0	3,80	3200x1800x2000	4200
KP-4/350D2 (2,0/20,0)	1,97	20,00	37,0	0,80	1350x1200x2100	1180
KP-4/350D2 (2,4/30,0)	2,41	30,00	37,0	1,00	1350x1200x2100	1180
KP-4/350D2 (2,9/35,0)	2,85	35,00	37,0	1,20	1350x1200x2100	1180
KP-4/350D2 (3,3/35,0)	3,30	35,00	37,0	1,40	1350x1200x2100	1180
KP-4/350D3 (2,2/20,0)	2,20	20,00	75,0	0,10	1950x1450x1400	1660
KP-4/350D3 (3,2/30,0)	3,20	30,00	75,0	0,20	1950x1450x1400	1660
KP-4/350D3 (4,2/35,0)	4,20	35,00	75,0	0,30	1950x1450x1400	1660
KP-4/350D3 (5,2/35,0)	5,24	35,00	75,0	0,40	1950x1450x1400	1660
KP-4/350D4 (2,5/30,0)	2,50	30,00	75,0	0,40	1950x1450x1400	1660
KP-4/350D4 (3,5/35,0)	3,50	35,00	75,0	0,60	1950x1450x1400	1660
KP-4/350D4 (4,5/35,0)	4,50	35,00	75,0	0,80	1950x1450x1400	1660
KP-4/350D4 (5,5/35,0)	5,50	35,00	75,0	1,00	1950x1450x1400	1660
KP-4/350D5 (2,5/35,0)	2,48	35,00	55,0	0,80	1950x1450x1400	1500
KP-4/350D5 (3,3/35,0)	3,30	35,00	55,0	1,10	1950x1450x1400	1500
KP-4/350D5 (4,1/35,0)	4,14	35,00	55,0	1,40	1950x1450x1400	1500



Unit size	Delivery, m ³ /min	Nominal pressure, exc. MPa	Power, kW	Oil flow rate, g/h	Dimensions, mm	Weight, kg
KP-4/350D5 (4,7/35,0)	4,70	35,00	55,0	1,60	1950x1450x1400	1500
KP-4/350D6 (4,9/20,0)	4,90	20,00	75,0	0,20	2500x1550x1800	3350
KP-4/350D6 (6,7/35,0)	6,70	35,00	110,0	0,30	2500x1550x1800	3350
KP-4/350D6 (8,5/35,0)	8,50	35,00	132,0	0,40	2500x1550x1800	3350
KP-4/350D6 (9,4/35,0)	9,40	35,00	132,0	0,45	2500x1550x1800	3350
KP-4/350D7 (10,2/35,0)	10,20	35,00	132,0	1,00	2500x1550x1800	3350
KP-4/350D7 (5,1/25,0)	5,10	25,00	75,0	0,45	2500x1550x1800	3350
KP-4/350D7 (6,5/35,0)	6,50	35,00	110,0	0,60	2500x1550x1800	3350
KP-4/350D7 (8,3/35,0)	8,30	35,00	132,0	0,80	2500x1550x1800	3350
KP-4/350D8 (10,3/35,0)	10,35	35,00	132,0	1,40	2500x1550x1800	3350
KP-4/350D8 (12,4/35,0)	12,40	35,00	132,0	1,70	2500x1550x1800	3350
KP-4/350D8 (7,6/35,0)	7,60	35,00	110,0	1,00	2500x1550x1800	3350
KP-4/350D8 (9,0/35,0)	9,00	35,00	110,0	1,20	2500x1550x1800	3350
KP-4/350D9 (11,7/35,0)	11,70	35,00	110,0	3,80	2500x1550x1800	3350
KP-4/350D9 (5,1/25,0)	5,10	25,00	55,0	1,70	2500x1550x1800	3350
KP-4/350D9 (6,0/35,0)	6,00	35,00	75,0	2,00	2500x1550x1800	3350
KP-4/350D9 (9,3/35,0)	9,30	35,00	90,0	3,00	2500x1550x1800	3350
KP-4/420D (2,4/42,0)	2,40	42,00	37,0	1,00	1350x1200x2100	1180
KP-4/420D (2,9/42,0)	2,85	42,00	37,0	1,20	1350x1200x2100	1180
KP-4/420D1 (6,5/42,0)	6,50	42,00	132,0	0,60	2500x1550x1800	3400
KP-4/420D1 (8,3/42,0)	8,30	42,00	132,0	0,80	2500x1550x1800	3400
KP-4/420D1 (9,2/42,0)	9,20	42,00	132,0	0,90	2500x1550x1800	3400

ATTACHMENT 7. ADGU MODEL RANGE

Unit size	Nominal power., kW	Max. power., Kw	Prime engine	Flow rate, l/h	Dimensions, mm	Weight, kg
ADGU-10Ya-O	10,20	11,00	Yanmar	3,6	1600x900x1000	410
ADGU-15Ya-O	15,20	16,10	Yanmar	5,1	1600x900x1000	480
ADGU-23Ya-O	23,60	24,00	Yanmar	7,1	2000x950x1100	700
ADGU-35Ya-O	35,20	36,00	Yanmar	10,0	2000x950x1100	785
ADGU-10Ya-K	10,20	11,00	Yanmar	3,6	1600x900x1000	430
ADGU-15Ya-K	15,20	16,10	Yanmar	5,1	1600x900x1000	500
ADGU-23Ya-K	23,60	24,00	Yanmar	7,1	2000x950x1100	720
ADGU-35Ya-K	35,20	36,00	Yanmar	10,0	2000x950x1100	805
ADGU-23D-O	23,20	24,00	Deutz	7,1	1800x750x1600	714
ADGU-31D-O	31,40	33,00	Deutz	9,4	1800x750x1600	761
ADGU-47D-O	47,80	49,60	Deutz	14,6	2000x750x1550	851
ADGU-59D-O	59,30	62,30	Deutz	15,7	2200x1000x1650	945
ADGU-81D-O	81,60	86,50	Deutz	22,2	2200x1000x1650	1326
ADGU-102D-O	102,00	114,00	Deutz	27,1	2200x1000x1650	1412
ADGU-127D-O	127,00	133,00	Deutz	32,7	2200x1000x1650	1615
ADGU-166D-O	166,00	176,00	Deutz	49,1	2650x1100x2000	2030
ADGU-23D-K	23,20	24,00	Deutz	7,1	1800x750x1600	734
ADGU-31D-K	31,40	33,00	Deutz	9,4	1800x750x1600	781
ADGU-47D-K	47,80	49,60	Deutz	14,6	2000x750x1550	871
ADGU-59D-K	59,30	62,30	Deutz	15,7	2200x1000x1650	1145
ADGU-81D-K	81,60	86,50	Deutz	22,2	2200x1000x1650	1526
ADGU-102D-K	102,00	114,00	Deutz	27,1	2200x1000x1650	1612
ADGU-127D-K	127,00	133,00	Deutz	32,7	2200x1000x1650	1815
ADGU-166D-K	166,00	176,00	Deutz	49,1	2650x1100x2000	2230
ADGU-48P-O	48,60	53,20	Perkins	14,0	2200x1000x1650	900
ADGU-59P-O	59,40	62,20	Perkins	18,3	2200x1000x1650	970
ADGU-82P-O	82,00	90,40	Perkins	29,6	2200x1000x1650	1380
ADGU-111P-O	111,00	120,00	Perkins	32,1	2200x1000x1650	1460
ADGU-118P-O	118,00	133,00	Perkins	31,9	2600x1000x1650	1550
ADGU-147P-O	147,30	163,20	Perkins	39,2	2600x1000x1650	1870
ADGU-48P-K	48,60	53,20	Perkins	14,0	2200x1000x1650	1100
ADGU-59P-K	59,40	62,20	Perkins	18,3	2200x1000x1650	1170
ADGU-82P-K	82,00	90,40	Perkins	29,6	2200x1000x1650	1580
ADGU-111P-K	111,00	120,00	Perkins	32,1	2200x1000x1650	1660
ADGU-118P-K	118,00	133,00	Perkins	31,9	2600x1000x1650	1750
ADGU-147P-K	147,30	163,20	Perkins	39,2	2600x1000x1650	2070
ADGU-199V-O	199,00	220,00	Volvo	55,0	2650x1200x1850	2177
ADGU-252V-O	252,00	264,00	Volvo	65,7	3300x1400x1850	2580
ADGU-305V-O	305,00	334,00	Volvo	74,0	3300x1400x1950	3050
ADGU-332V-O	332,00	360,00	Volvo	82,0	3300x1400x1950	3050
ADGU-364V-O	364,00	405,00	Volvo	91,0	3300x1400x1950	3180



Unit size	Nominal power, kW	Max. power, Kw	Prime engine	Flow rate, l/h	Dimensions, mm	Weight, kg
ADGU-404V-O	404,00	437,00	Volvo	101,0	3300x1500x2150	3467
ADGU-457V-O	457,00	505,00	Volvo	116,0	3300x1500x2150	3680
ADGU-507V-O	507,00	564,00	Volvo	127,0	3300x1500x2150	3800
ADGU-199V-K	199,00	220,00	Volvo	55,0	2650x1200x1850	5477
ADGU-252V-K	252,00	264,00	Volvo	65,7	3300x1400x1850	2880
ADGU-305V-K	305,00	334,00	Volvo	74,0	3300x1400x1950	3350
ADGU-332V-K	332,00	360,00	Volvo	82,0	3300x1400x1950	3350
ADGU-364V-K	364,00	405,00	Volvo	91,0	3300x1400x1950	3480
ADGU-404V-K	404,00	437,00	Volvo	101,0	3300x1500x2150	3767
ADGU-457V-K	457,00	505,00	Volvo	116,0	3300x1500x2150	3980
ADGU-507V-K	507,00	564,00	Volvo	127,0	3300x1500x2150	4100
ADGU-222M-O	222,00	247,00	MTU	56,0	3300x1400x2150	3740
ADGU-246M-O	246,00	264,00	MTU	61,0	3300x1400x2150	3740
ADGU-291M-O	291,00	322,00	MTU	67,0	4200x1900x2250	3900
ADGU-320M-O	320,00	350,00	MTU	75,0	4200x1900x2250	4100
ADGU-372M-O	372,00	410,00	MTU	90,0	3800x1700x2350	4400
ADGU-412M-O	412,00	454,00	MTU	99,4	3800x1700x2350	4550
ADGU-480M-O	480,00	529,00	MTU	117,0	3800x1700x2350	4800
ADGU-529M-O	529,00	584,00	MTU	128,2	3800x1700x2350	5000
ADGU-222M-K	222,00	247,00	MTU	56,0	3300x1400x2150	4040
ADGU-246M-K	246,00	264,00	MTU	61,0	3300x1400x2150	4040
ADGU-291M-K	291,00	322,00	MTU	67,0	4200x1900x2250	4200
ADGU-320M-K	320,00	350,00	MTU	75,0	4200x1900x2250	4400
ADGU-372M-K	372,00	410,00	MTU	90,0	3800x1700x2350	4700
ADGU-412M-K	412,00	454,00	MTU	99,4	3800x1700x2350	4850
ADGU-480M-K	480,00	529,00	MTU	117,0	3800x1700x2350	5100
ADGU-529M-K	529,00	584,00	MTU	128,2	3800x1700x2350	5300

ATTACHMENT 8. SC MODEL RANGE

Unit size	Flow, norm. cond, m3/min	Nom. pressure, MPa	Max. pressure, MPa	Losses., MPa	Dimensions, mm	Weight, kg
SC-140R	2,5	0,7	1,6	0,001	90x160	1
SC-220R	3,8	0,7	1,6	0,001	90x200	1
SC-270R	5,5	0,7	1,6	0,001	90x200	1
SC-540R	12,5	0,7	1,6	0,001	120x250	3
SC-1260R	27,5	0,7	1,6	0,001	160x520	6
SC-2500R	44,5	0,7	1,6	0,001	200x600	13
SC-2500F	44,5	0,7	1,6	0,001	200x600	13
SC-2900R	51,0	0,7	1,6	0,001	200x600	22
SC-2900F	51,0	0,7	1,6	0,001	390x780	31
SC-3600F	69,0	0,7	1,6	0,001	450x810	92
SC-6500F	115,0	0,7	1,6	0,001	580x840	160
SC-10800F	190,0	0,7	1,6	0,001	750x920	348
SC-17300F	305,0	0,7	1,6	0,001	740x1010	510
SC-26000F	458,0	0,7	1,6	0,001	1000x990	662

ATTACHMENT 9. FV MODEL RANGE

Unit size	Flow, norm. cond, m3/min	Max. pressure, MPa	Losses, MPa	Filtration rate, micron	Oil concentration, mg/m3	Dimensions, mm	Weight, kg
FV-0100R (3)	1,6	1,6	0,001	3,000	5,000	110x260	2
FV-0160R (3)	2,6	1,6	0,001	3,000	5,000	110x310	2
FV-0230R (3)	3,8	1,6	0,001	3,000	5,000	110x370	3
FV-0300R (3)	5,0	1,6	0,001	3,000	5,000	110x370	4
FV-0420R (3)	7,0	1,6	0,001	3,000	5,000	140x560	5
FV-0510R (3)	8,5	1,6	0,001	3,000	5,000	140x640	5
FV-0690R (3)	11,5	1,6	0,001	3,000	5,000	140x740	6
FV-0810R (3)	13,5	1,6	0,001	3,000	5,000	170x760	9
FV-1020R (3)	17,0	1,6	0,001	3,000	5,000	170x820	53
FV-1380R (3)	23,0	1,6	0,001	3,000	5,000	170x1060	58
FV-1620F (3)	27,0	1,6	0,001	3,000	5,000	430x1130	79
FV-2040F (3)	34,0	1,6	0,001	3,000	5,000	430x1130	85
FV-2700F (3)	45,0	1,6	0,001	3,000	5,000	430x1300	115
FV-3300F (3)	55,0	1,6	0,001	3,000	5,000	540x1200	128



Unit size	Flow, norm. cond., m3/min	Max. pressure, MPa	Losses, MPa	Filtration rate, micron	Oil concentration, mg/m3	Dimensions, mm	Weight, kg
FV-3900F (3)	65,0	1,6	0,001	3,000	5,000	540x1350	135
FV-5220F (3)	87,0	1,6	0,001	3,000	5,000	600x1430	155
FV-6600F (3)	110,0	1,6	0,001	3,000	5,000	600x1430	158
FV-7800F (3)	130,0	1,6	0,001	3,000	5,000	600x1460	170
FV-9600F (3)	160,0	1,6	0,001	3,000	5,000	740x1480	245
FV-12600F (3)	210,0	1,6	0,001	3,000	5,000	750x1630	270
FV-15600F (3)	260,0	1,6	0,001	3,000	5,000	850x1500	320
FV-18600F (3)	310,0	1,6	0,001	3,000	5,000	850x1500	450
FV-21600F (3)	360,0	1,6	0,001	3,000	5,000	900x1500	435
FV-24600F (3)	410,0	1,6	0,001	3,000	5,000	900x1500	435
FV-0100R (1)	1,6	1,6	0,001	1,000	1,000	110x260	2
FV-0160R (1)	2,6	1,6	0,001	1,000	1,000	110x310	2
FV-0230R (1)	3,8	1,6	0,001	1,000	1,000	110x370	3
FV-0300R (1)	5,0	1,6	0,001	1,000	1,000	110x370	4
FV-0420R (1)	7,0	1,6	0,001	1,000	1,000	140x560	5
FV-0510R (1)	8,5	1,6	0,001	1,000	1,000	140x640	5
FV-0690R (1)	11,5	1,6	0,001	1,000	1,000	140x740	6
FV-0810R (1)	13,5	1,6	0,001	1,000	1,000	170x760	9
FV-1020R (1)	17,0	1,6	0,001	1,000	1,000	170x820	53
FV-1380R (1)	23,0	1,6	0,001	1,000	1,000	170x1060	58
FV-1620F (1)	27,0	1,6	0,001	1,000	1,000	430x1130	79
FV-2040F (1)	34,0	1,6	0,001	1,000	1,000	430x1130	85
FV-2700F (1)	45,0	1,6	0,001	1,000	1,000	430x1300	115
FV-3300F (1)	55,0	1,6	0,001	1,000	1,000	540x1200	128
FV-3900F (1)	65,0	1,6	0,001	1,000	1,000	540x1350	135
FV-5220F (1)	87,0	1,6	0,001	1,000	1,000	600x1430	155
FV-6600F (1)	110,0	1,6	0,001	1,000	1,000	600x1430	158
FV-7800F (1)	130,0	1,6	0,001	1,000	1,000	600x1460	170
FV-9600F (1)	160,0	1,6	0,001	1,000	1,000	740x1480	245
FV-12600F (1)	210,0	1,6	0,001	1,000	1,000	750x1630	270
FV-15600F (1)	260,0	1,6	0,001	1,000	1,000	850x1500	320
FV-18600F (1)	310,0	1,6	0,001	1,000	1,000	850x1500	450
FV-21600F (1)	360,0	1,6	0,001	1,000	1,000	900x1500	435
FV-24600F (1)	410,0	1,6	0,001	1,000	1,000	900x1500	435
FV-0100R (01)	1,6	1,6	0,001	0,010	0,010	110x260	2
FV-0160R (01)	2,6	1,6	0,001	0,010	0,010	110x310	2
FV-0230R (01)	3,8	1,6	0,001	0,010	0,010	110x370	3
FV-0300R (01)	5,0	1,6	0,001	0,010	0,010	110x370	4
FV-0420R (01)	7,0	1,6	0,001	0,010	0,010	140x560	5
FV-0510R (01)	8,5	1,6	0,001	0,010	0,010	140x640	5
FV-0690R (01)	11,5	1,6	0,001	0,010	0,010	140x740	6
FV-0810R (01)	13,5	1,6	0,001	0,010	0,010	170x760	9
FV-1020R (01)	17,0	1,6	0,001	0,010	0,010	170x820	53
FV-1380R (01)	23,0	1,6	0,001	0,010	0,010	170x1060	58
FV-1620F (01)	27,0	1,6	0,001	0,010	0,010	430x1130	79
FV-2040F (01)	34,0	1,6	0,001	0,010	0,010	430x1130	85
FV-2700F (01)	45,0	1,6	0,001	0,010	0,010	430x1300	115
FV-3300F (01)	55,0	1,6	0,001	0,010	0,010	540x1200	128
FV-3900F (01)	65,0	1,6	0,001	0,010	0,010	540x1350	135
FV-5220F (01)	87,0	1,6	0,001	0,010	0,010	600x1430	155
FV-6600F (01)	110,0	1,6	0,001	0,010	0,010	600x1430	158
FV-7800F (01)	130,0	1,6	0,001	0,010	0,010	600x1460	170
FV-9600F (01)	160,0	1,6	0,001	0,010	0,010	740x1480	245
FV-12600F (01)	210,0	1,6	0,001	0,010	0,010	750x1630	270
FV-15600F (01)	260,0	1,6	0,001	0,010	0,010	850x1500	320
FV-18600F (01)	310,0	1,6	0,001	0,010	0,010	850x1500	450
FV-21600F (01)	360,0	1,6	0,001	0,010	0,010	900x1500	435
FV-24600F (01)	410,0	1,6	0,001	0,010	0,010	900x1500	435
FV-0100R (001)	1,6	1,6	0,001	0,010	0,001	110x260	2
FV-0160R (001)	2,6	1,6	0,001	0,010	0,001	110x310	2
FV-0230R (001)	3,8	1,6	0,001	0,010	0,001	110x370	3
FV-0300R (001)	5,0	1,6	0,001	0,010	0,001	110x370	4
FV-0420R (001)	7,0	1,6	0,001	0,010	0,001	140x560	5
FV-0510R (001)	8,5	1,6	0,001	0,010	0,001	140x640	5
FV-0690R (001)	11,5	1,6	0,001	0,010	0,001	140x740	6
FV-0810R (001)	13,5	1,6	0,001	0,010	0,001	170x760	9
FV-1020R (001)	17,0	1,6	0,001	0,010	0,001	170x820	53
FV-1380R (001)	23,0	1,6	0,001	0,010	0,001	170x1060	58
FV-1620F (001)	27,0	1,6	0,001	0,010	0,001	430x1130	79
FV-2040F (001)	34,0	1,6	0,001	0,010	0,001	430x1130	85



Unit size	Flow, norm. cond., m3/min	Max. pressure, MPa	Losses., MPa	Filtration rate, micron	Oil concentration, mg/m3	Dimensions, mm	Weight, kg
FV-2700F (001)	45,0	1,6	0,001	0,010	0,001	430x1300	115
FV-3300F (001)	55,0	1,6	0,001	0,010	0,001	540x1200	128
FV-3900F (001)	65,0	1,6	0,001	0,010	0,001	540x1350	135
FV-5220F (001)	87,0	1,6	0,001	0,010	0,001	600x1430	155
FV-6600F (001)	110,0	1,6	0,001	0,010	0,001	600x1430	158
FV-7800F (001)	130,0	1,6	0,001	0,010	0,001	600x1460	170
FV-9600F (001)	160,0	1,6	0,001	0,010	0,001	740x1480	245
FV-12600F (001)	210,0	1,6	0,001	0,010	0,001	750x1630	270
FV-15600F (001)	260,0	1,6	0,001	0,010	0,001	850x1500	320
FV-18600F (001)	310,0	1,6	0,001	0,010	0,001	850x1500	450
FV-21600F (001)	360,0	1,6	0,001	0,010	0,001	900x1500	435
FV-24600F (001)	410,0	1,6	0,001	0,010	0,001	900x1500	435
FV-0100R (003)	1,6	1,6	0,001	0,010	0,003	110x260	2
FV-0160R (003)	2,6	1,6	0,001	0,010	0,003	110x310	2
FV-0230R (003)	3,8	1,6	0,001	0,010	0,003	110x370	3
FV-0300R (003)	5,0	1,6	0,001	0,010	0,003	110x370	4
FV-0420R (003)	7,0	1,6	0,001	0,010	0,003	140x560	5
FV-0510R (003)	8,5	1,6	0,001	0,010	0,003	140x640	5
FV-0690R (003)	11,5	1,6	0,001	0,010	0,003	140x740	6
FV-0810R (003)	13,5	1,6	0,001	0,010	0,003	170x760	9
FV-1020R (003)	17,0	1,6	0,001	0,010	0,003	170x820	53
FV-1380R (003)	23,0	1,6	0,001	0,010	0,003	170x1060	58
FV-1620F (003)	27,0	1,6	0,001	0,010	0,003	430x1130	79
FV-2040F (003)	34,0	1,6	0,001	0,010	0,003	430x1130	85
FV-2700F (003)	45,0	1,6	0,001	0,010	0,003	430x1300	115
FV-3300F (003)	55,0	1,6	0,001	0,010	0,003	540x1200	128
FV-3900F (003)	65,0	1,6	0,001	0,010	0,003	540x1350	135
FV-5220F (003)	87,0	1,6	0,001	0,010	0,003	600x1430	155
FV-6600F (003)	110,0	1,6	0,001	0,010	0,003	600x1430	158
FV-7800F (003)	130,0	1,6	0,001	0,010	0,003	600x1460	170
FV-9600F (003)	160,0	1,6	0,001	0,010	0,003	740x1480	245
FV-12600F (003)	210,0	1,6	0,001	0,010	0,003	750x1630	270
FV-15600F (003)	260,0	1,6	0,001	0,010	0,003	850x1500	320
FV-18600F (003)	310,0	1,6	0,001	0,010	0,003	850x1500	450
FV-21600F (003)	360,0	1,6	0,001	0,010	0,003	900x1500	435
FV-24600F (003)	410,0	1,6	0,001	0,010	0,003	900x1500	435

ATTACHMENT 10. OVR MODEL RANGE

Unit size	Flow, norm. cond., m3/min	Max. pressure, MPa	Losses., MPa	Dew point, °C	Dimensions, mm	Weight, kg
OVR-0050R	0,80	1,60	0,003	+2...+10	600x400x530	50
OVR-0100R	1,60	1,60	0,003	+2...+10	650x430x670	70
OVR-0160R	2,60	1,60	0,003	+2...+10	800x450x700	78
OVR-0230R	3,80	1,60	0,003	+2...+10	800x450x700	80
OVR-0300R	5,80	1,60	0,003	+2...+10	800x450x700	80
OVR-0360R	6,00	1,60	0,003	+2...+10	970x520x800	118
OVR-0420R	7,00	1,60	0,003	+2...+10	970x520x800	118
OVR-0510R	8,50	1,60	0,003	+2...+10	1100x550x870	120
OVR-0690R	11,50	1,60	0,003	+2...+10	1300x550x870	156
OVR-0810R	13,50	1,60	0,003	+2...+10	1450x600x1100	200
OVR-1020R	17,00	1,60	0,003	+2...+10	950x800x1300	175
OVR-1380R	23,00	1,60	0,003	+2...+10	950x800x1300	210
OVR-1620F	27,00	1,60	0,003	+2...+10	950x800x1300	300
OVR-2040F	34,00	1,60	0,003	+2...+10	1050x1150x1430	380
OVR-2700F	45,00	1,60	0,003	+2...+10	1050x1150x1430	480
OVR-3300F	55,00	1,60	0,003	+2...+10	1850x1150x1600	600
OVR-3900F	65,00	1,60	0,003	+2...+10	1850x1150x1600	680
OVR-5220F	87,00	1,60	0,003	+2...+10	1650x1250x1800	780
OVR-6600F	110,00	1,60	0,003	+2...+10	2000x1250x1800	980



ATTACHMENT 11. OVA MODEL RANGE

Unit size	Flow, norm. cond., m ³ /min	Max. pressure, MPa	Losses., MPa	Dew point, °C	Dimensions, mm	Weight, kg
OVA-0050R	0,70	1,6	0,002	-40	700x500x950	105
OVA-0100R	1,60	1,6	0,002	-40	700x500x1300	160
OVA-0160R	2,60	1,6	0,002	-40	800x500x1350	205
OVA-0230R	3,80	1,6	0,002	-40	900x500x1350	240
OVA-0300R	5,00	1,6	0,002	-40	900x500x1700	256
OVA-0360R	6,00	1,6	0,002	-40	900x500x1700	282
OVA-0420R	7,00	1,6	0,002	-40	900x500x1800	310
OVA-0480R	8,00	1,6	0,002	-40	900x500x2000	342
OVA-0600R	10,00	1,6	0,002	-40	100x550x1950	400
OVA-0720R	12,00	1,6	0,002	-40	1200x600x1950	518
OVA-0860R	14,00	1,6	0,002	-40	1250x650x2000	596
OVA-0960R	16,00	1,6	0,002	-40	1300x650x2200	735
OVA-1200F	20,00	1,6	0,002	-40	1400x700x2200	895
OVA-1500F	25,00	1,6	0,002	-40	1600x750x2200	996
OVA-1800F	30,00	1,6	0,002	-40	1600x850x1950	1045
OVA-2100F	35,00	1,6	0,002	-40	1850x850x2400	1145
OVA-2580F	43,00	1,6	0,002	-40	2000x1050x2500	1395
OVA-3300F	55,00	1,6	0,002	-40	2150x1050x2500	1650
OVA-3900F	65,00	1,6	0,002	-40	-	-
OVA-5220F	87,00	1,6	0,002	-40	-	-
OVA-6600F	110,00	1,6	0,002	-40	-	-
OVA-7800F	130,00	1,6	0,002	-40	-	-
OVA-9600F	160,00	1,6	0,002	-40	-	-
OVA-12600F	210,00	1,6	0,002	-40	-	-
OVA-15600F	260,00	1,6	0,002	-40	-	-
OVA-19200F	320,00	1,6	0,002	-40	-	-
OVA-21600F	360,00	1,6	0,002	-40	-	-
OVA-24600F	410,00	1,6	0,002	-40	-	-
OVA-30600F	510,00	1,6	0,002	-40	-	-





GEOGRAPHIC PRESENCE



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