SUMY

Catalogue

Product Line

Centrifugal Pumps

SUMY ENGINEERING WORKS Ltd

PUMPING EQUIPMENT DESIGN, MANUFACTURE AND SALE

SUMY ENGINEERING WORKS Ltd is a Company specialized in the design and manufacturing centrifugal pumps for broad range of industries such as a power generation, land irrigation, drainage, refineries, and petrochemical plants.
This catalogue includes brief technical data and description of design of centrifugal pumps manufactured by SUMY ENGINEERING WORKS Ltd.

The technical data show an agreed notation:

Q - capacity, m3/h;

H - head, m;

n - speed of rotation, rpm.

This catalogue is intended for technical and engineering employees of design organizations, which plan process plants for petroleum refining services, and of enterprises that run pumping equipment.

For detailed design engineering, please, don't hesitate to apply for refined data to the Manufacturer. A contract for delivery shall be drawn up when a Manufacturer's questionnaire filled in by the Client in accordance with the established procedure is available.

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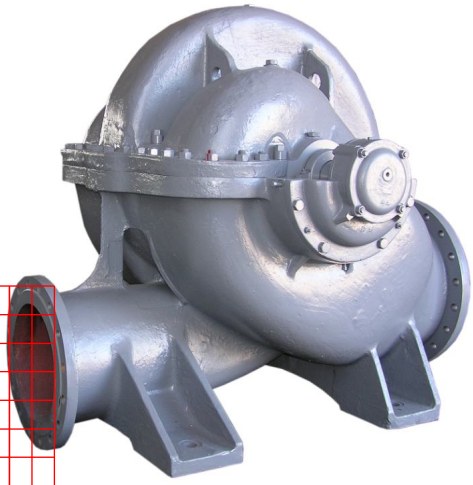
Series Д Pumps for Land Irrigation & Drainage

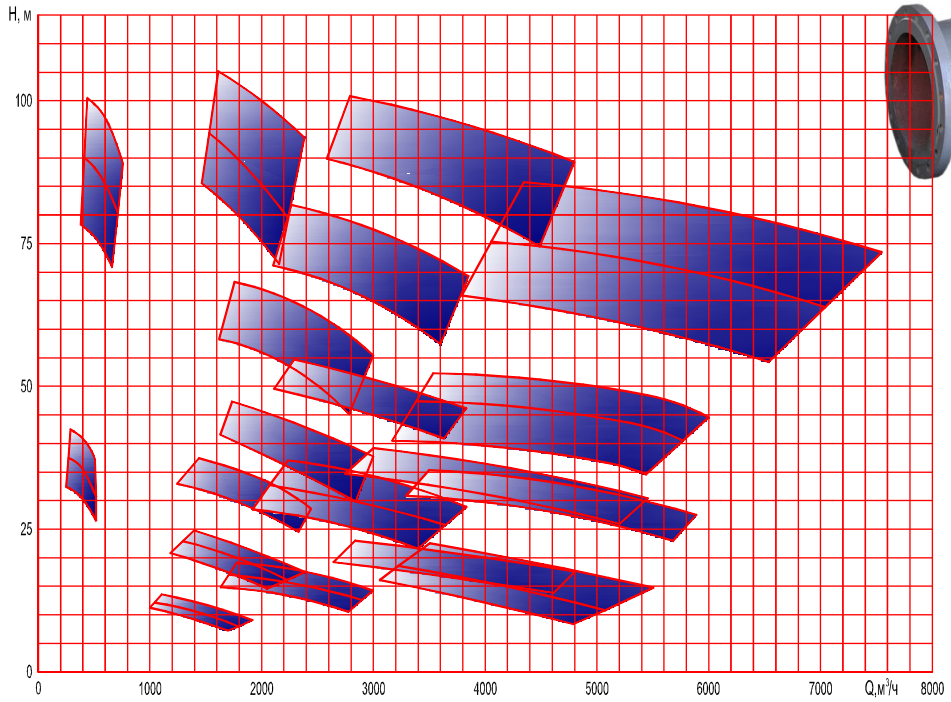
Д Series Between-Bearings Double Flow Axially Split Pumps

Applications: Designed for the supply of water to industrial plants and communities. They are used also for agricultural land irrigation and drainage.

Design: АД series pump units consist of a centrifugal pump, an induction motor, a rubber-bushed flexible coupling with a coupling guard, which are mounted on the foundation. A pump of the make Д 630-90-2-C and its motor drive are mounted on a common base plate.
The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps.
The pumps are electrically driven horizontal, foot-mounted, single-stage, axially split volute casing centrifugal pumps with a double entry radial impeller. The pump casing is a locating part of the pumps, which incorporates a lower and an upper casing halves bolted together by means of studs.
The pump rotor is carried by antifriction bearings, and in case of the Д 6300-80-2-C make pump, by water-cooled plain bearings.
The antifriction bearings are grease lubricated and the plain bearings are oil-ring lubricated ones.
Pump shaft sealing is by means of packed glands.
Sense of rotation of shaft in all the pumps is counterclockwise, if viewed from the drive side.
Upon the Customer's request, the pumps may be supplied with a rotor for reverse rotation.



Coverage chart of the Д Series Pumps



Pump make
Д 630-90-C
Д 2000-21-2-C
Д 2000-100-2-C
Д 2500-62-2-C
Д 3200-33-2-C
Д 3200-75-2-C
Д 4000-95-2-C
Д 6300-27-3-C
Д 6300-27-3-1-C
Д 6300-80-2-C

Handled Media:
- Water up to 85 °C.

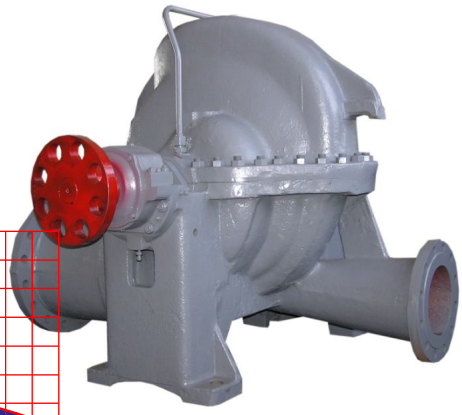
		Д 2000 - Д 6300	Д 630
DN	mm	300 - 800	250, 200
Q	m^3/h	7500	780
H	m	105	100
p	kg/cm^2	2	3
t	°C	+85	+85
n (sync)	rpm	600, 750, 1000	1000, 1500

Water-Works Pumps of the Series ЦН

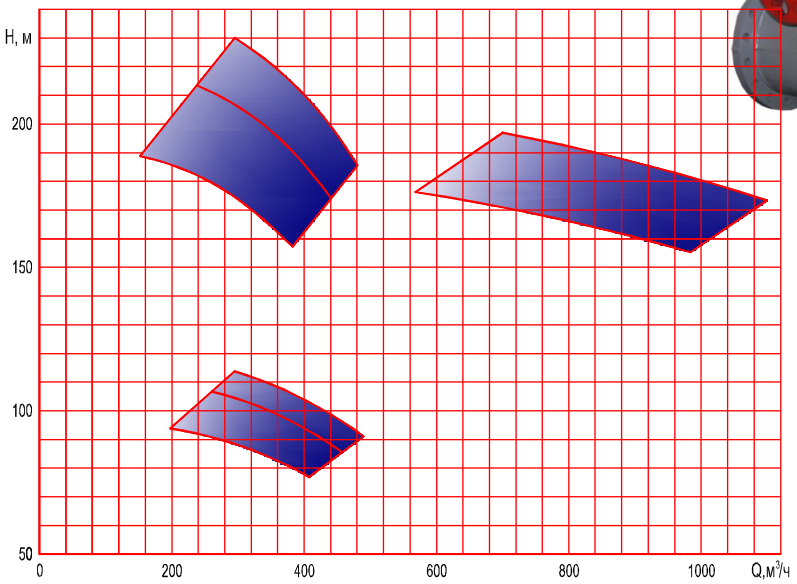
ЦН Series Between-Bearings Double Flow Axially Split Pumps

Applications: Designed for the supply of water to industrial plants and communities. They are used also for agricultural land irrigation and drainage.

Design: АЦН series pump units consist of a centrifugal pump, an induction motor, a rubber-bushed flexible coupling with a coupling guard, which are mounted on a common fabricated base plate. Pump units of the make АЦН 1000-180-С are mounted direct on the foundation.
The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps.
The pumps are electrically driven horizontal, foot-mounted, single-stage, axially split volute casing centrifugal pumps with a double entry radial impeller. The pump casing is a locating part of the pumps, which incorporates a lower and an upper casing halves bolted together by means of studs.
The antifriction bearings are grease lubricated and the plain bearings are oil-ring lubricated ones.
Pump shaft sealing is by means of packed glands.
Sense of rotation of shaft in all the pumps is counterclockwise, if viewed from the drive side.
Upon the Customer's request, the pumps may be supplied with
a rotor for reverse rotation.



Coverage chart of the ЦН Series Pumps



Pump make
ЦН 400-105-С
ЦН 400-210-С
ЦН 1000-180-С

Handled Media:
- water 1 °C to 100 °C

DN	mm	200 - 350
Q	m^3/h	1100
H	m	230
p	kg/cm^2	2.5
t	°C	+1 - +100
n (sync)	rpm	1500

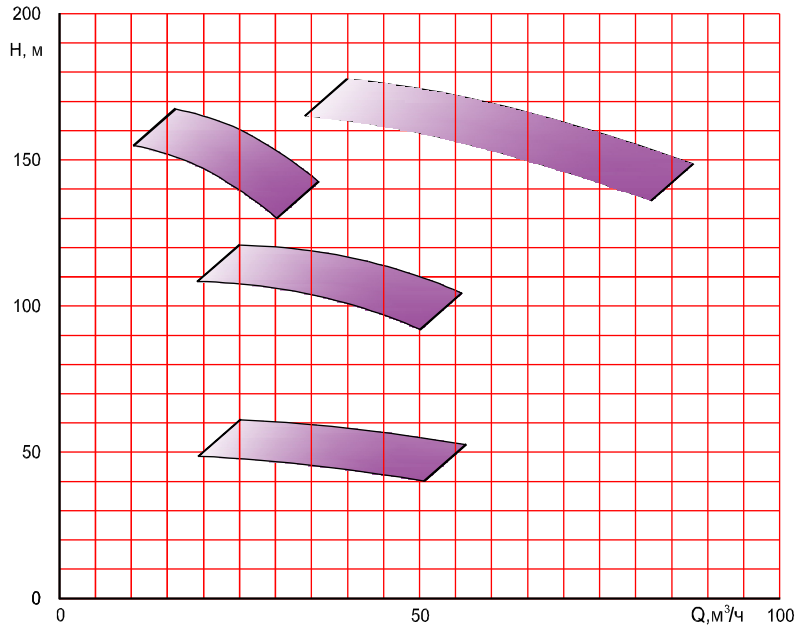
Condensate Pumps

Kc Series Inducer Horizontal Segmental, Between Bearings and КсП Series Inducer Horizontal Segmental, Between Bearings Pumps, with Medium-Lubricated Bearings

Applications: Designed for handling condensate in the steam and water circuit systems of the thermal power stations that burn organic fuel. May be also used to transfer water in heating plants and water supply systems.

Design: АКс and АКсП series pump units consist of a centrifugal pump, an induction motor, which are connected by means of a rubber-bushed (pin-and-bushing) flexible coupling and mounted on a common fabricated base plate.
The pump as a component of the pump unit is an electrically driven horizontal single-stage (Кс 50-55-2) or multistage ring-section centrifugal pump between bearings, with single flow impeller arrangement.
The suction casing, delivery casing and stage casings (consisting of a shell and an insert in case of the КсП series pumps) are bolted together with tie bolts to form a pump casing. The suction nozzle integrally cast with the suction casing is located horizontally at side (radially to the pump centerline). The discharge nozzle integrally cast with the delivery casing is oriented vertically upwards. The pump casing is supported at the bottom with feet integrally cast with the suction and delivery casings. The pumping unit alignment is maintained during its operation due to dowelling the delivery casing to the baseplate, whilst the other end of the pump can slide axially thus allowing for free expansion of static components.
Pump suction performance is enhanced due to the installation of an inducer upstream of the first stage impeller.
The rotor axial thrust is compensated with a balance drum.
Shaft sealing: by liquid-cooled packed glands (-C) or mechanical seals (-T).
The pump rotor is carried by:
a) in case of КсП series:
- a medium-lubricated internal plain bearing (on the non-drive side) and
- a grease lubricated anti-friction bearing (on the drive side);
b) in case of Кс series: grease lubricated anti-friction bearings.
Sense of rotation of shaft in all the pumps is counterclockwise, if viewed from the drive side.

Coverage chart of the КсП, Кс Series Pumps



Handled Media:
- Condensate up to 160 °C.

DN	mm	66, 100, 150
Q	m^3/h	88
H	m	175
p	kg/cm^2	10
t	°C	+1 - +160
n (sync)	rpm	3000

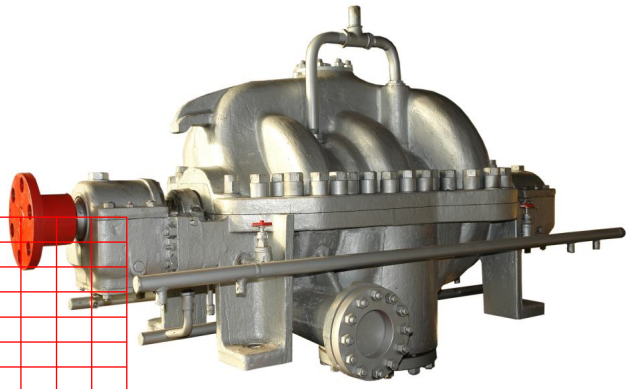
Pump make
Кс 50-55-2-С УХЛ4
Кс 50-55-2-Т УХЛ4
КсП 50-55-2-С УХЛ4
КсП 50-55-2-Т УХЛ4
Кс 50-110-2-С УХЛ4
Кс 50-110-2-Т УХЛ4
КсП 50-110-2-С УХЛ4
КсП 50-110-2-Т УХЛ4
Кс 80-155-2-С УХЛ4
Кс 80-155-2-Т УХЛ4
КсП 80-155-2-С УХЛ4
КсП 80-155-2-Т УХЛ4
Кс 32-150-2-С УХЛ4
Кс 32-150-2-Т УХЛ4

Condensate Pumps

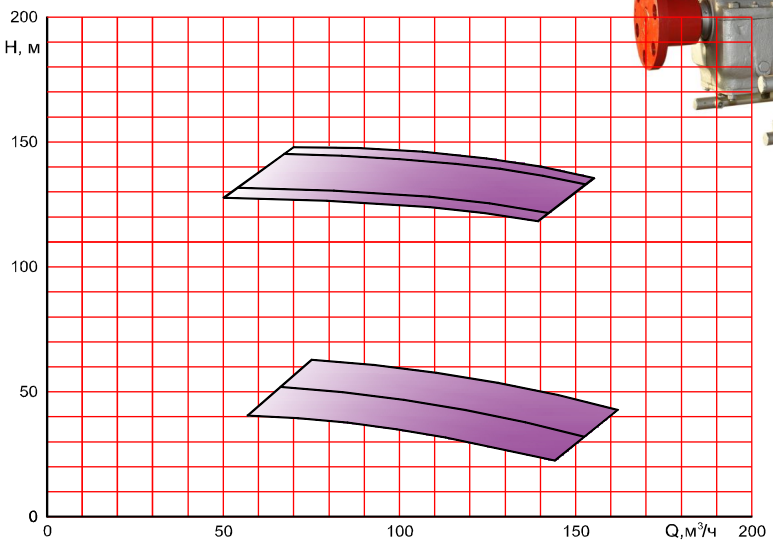
КсД Series Between-Bearings Three-Stage Axially Split Pumps with the Double Entry First Stage

Applications: Designed for handling condensate in the steam and water circuit systems of the thermal power stations that burn organic fuel. May be also used in hot water heating and water supply systems and in metallurgy.

Design: КсД series pump units consist of a centrifugal pump, an induction motor, a rubber-bushed (pin-and-bushing) flexible coupling with a coupling guard, which are mounted on a common fabricated base plate.
The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps.
Electrically driven horizontal foot-mounted, three-stage axially split volute casing centrifugal pumps with the first stage double entry radial impeller. The pump casing is a locating part of the pumps, which incorporates a lower and an upper casing halves bolted together by means of studs. A flanged suction nozzle is integrally cast with the lower casing half and is oriented vertically to the bottom and a discharge one, horizontally perpendicular to the shaft centerline.
The pump rotor is carried by the oil-ring lubricated antifriction bearings with oil bath.
Shaft sealing: packed glands.
Sense of rotation of shaft in all the pumps is counterclockwise, if viewed from the drive side.



Coverage chart of the КсД Series Pumps



Pump make
КсД 140-140 УХЛ4
КсД 125-140 УХЛ4
КсД 125-125 УХЛ4
КсД 120-55 УХЛ4
КсД 110-45 УХЛ4
КсД 100-35 УХЛ4

Handled Media:
- Condensate up to 125 °C

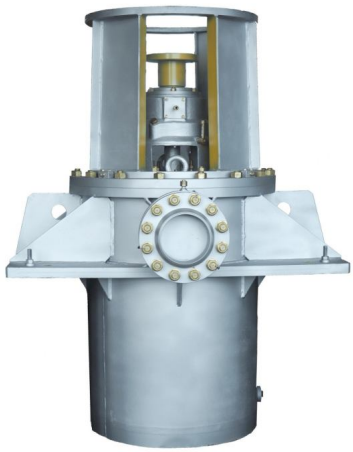
DN	mm	100, 200
Q	m^3/h	160
H	m	148
p	kg/cm^2	4
t	°C	+1 - +125
n (sync)	rpm	1500

Condensate Pumps

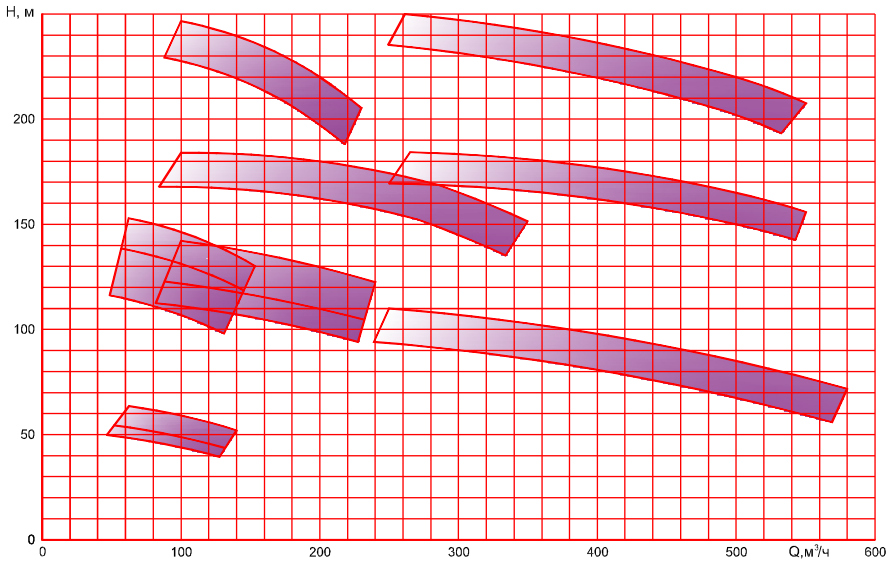
КсВ Series Vertical Can/Barrel Pumps

Applications: Designed for pumping condensed waste steam from stationary steam turbines and heating steam condensate (drain water) from heat exchangers in the thermal power stations that burn organic fuel. May be also used to transfer water in heating plants and water supply systems.

Design: АКсВ series pump units consist of a centrifugal pump and an induction motor mounted on the motor stool. They are connected by means of a rubber-bushed (pin-and-bushing) flexible coupling.
The pumps are electrically driven vertically suspended, can diffuser, single-stage (КсВ 125-55) or multistage centrifugal pumps with inducer and single flow impeller arrangement (with all the impellers facing the same way).
An outer casing (barrel) and an inner casing (withdrawable element or cartridge) are the major pump components.
The barrel is a construction made of steel plate by complete welding process, which integrates a suction chamber (in the form of a can) and a discharge chamber (the discharge head proper). Pump support feet and weld-end suction and discharge nozzles are welded to the barrel.
The inner casing (a rotating assembly) of ring-section type comprises a bare rotor, a shaft seal bearings, stage casings with built-in diffusers and a delivery cover.
The design of pump shaft seal chamber provides for both housing a mechanical seal (-Т) and packing the stuffing box (-С). The shaft of the pump make КсВ 125-140-3М is sealed only by means of packed gland.
The suction nozzle connection is either axially to the bottom (КsV 125-55 and КsV 125-140) or horizontally at side (КsV 125-55-1 and КsV 125-140-1)
The rotor axial thrust is compensated with a balance disc or with a balance drum.
The pump rotor is carried by the top thrust and radial bearing (a grease lubricated anti-friction bearing in case of a driving motor with the nominal power up to 100 kW) and by the bottom radial bearing (a medium-lubricated plain bearing). In case of a driver with the nominal power over 100 kW, the top bearing is lubricated with oil delivered by means of a pumping screw (seated on the pump shaft) from a cooled oil sump.
Sense of rotation of pump shaft is counterclockwise, if viewed from the drive side.



Coverage chart of the КсВ Series Pumps



DN	mm	100 - 400
Q	m^3/h	580
H	m	250
p	kg/cm^2	4, 10
t	°C	+3, +5 - +125, +140
n (sync)	rpm	1000, 1500, 3000

Handled Media:
- Condensate up to 125 °C

Pump make
КсВ 125-55-С,-Т УХЛ4
КсВ 125-55а-С,-Т УХЛ4
КсВ 125-55б-С,-Т УХЛ4
КсВ 125-140-С,-Т УХЛ4
КсВ 125-140-1-С,-Т УХЛ4
КсВ 125-140-3М УХЛ4
КсВ 200-130-С,-Т УХЛ4
КсВ 200-220-С,-Т УХЛ4
КсВ 320-100-2-С,-Т УХЛ4
КсВ 320-160
КсВ 320-160-С,-Т УХЛ4
КсВ 320-160-2-С,-Т УХЛ4
КсВ 500-85-1-С,-Т УХЛ4
КсВ 500-150-1-С,-Т УХЛ4
КсВ 500-165-1-С,-Т УХЛ4
КсВ 500-220-1-С,-Т УХЛ4

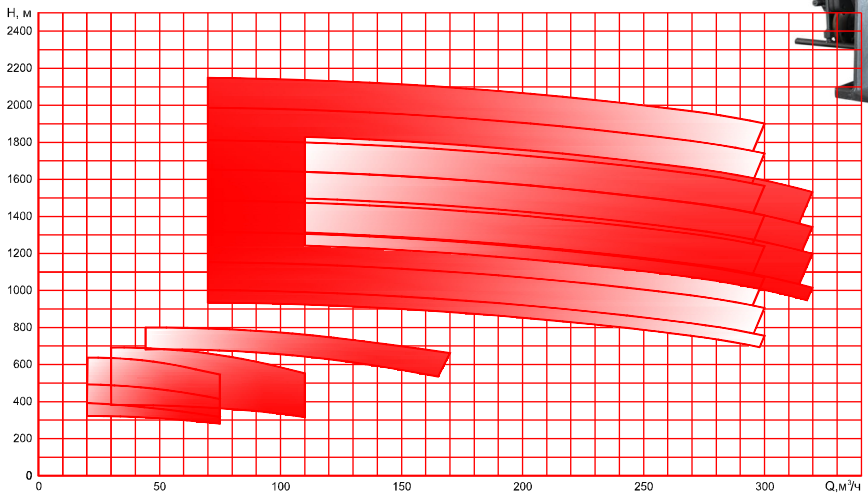
Boiler feed pumps

ПЭ Series Multistage Segmental Pumps

Applications: Designed for delivering treated water (feedwater) at the pumping temperature of up to 438K (165°C) into the fossil-fueled stationary boilers with absolute steam pressure of maximum 13.7 MPa (140 kgf/cm2).

Design: АПЭ series pump units consist of a centrifugal pump and an induction motor, which are mounted on a common fabricated base plate. In case of АПЭ 150-63 and АПЭ 250 models the pump and motor are mounted on separate base plates. The pump and motor shafts are connected by means of a rubber-bushed (pin-and-bushing) flexible coupling enclosed with a coupling guard.
The АПЭ 270-150 and АПЭ 250 pump unit models are equipped with a gear-type coupling and is furnished with a pressure lubrication installation to provide their coupling and bearings with lube oil.
The pump units shall be rigidly anchored to the foundation, and piping shall be also rigidly connected to the pumps.
The pumps are motor-driven horizontal, centreline-supported, between-bearings multistage ring-section centrifugal pumps with single flow impeller arrangement.
The pump casing comprises a suction casing, a delivery casing and a set of stage casings, which are concentrically aligned with respect to each other on rabbeted fits and are bolted together with tie bolts. Diffusers are built in the stage casings and delivery casing.
The suction and delivery casings have flanged suction and discharge pump nozzles respectively, which are oriented vertically to the top.
The rotor axial thrust is automatically balanced with a balance disc. In order to ensure a normal functioning of the balancing device, its chamber is to be communicated with the suction pipeline. A bearing end cover, fitted in the non-drive side bearing housing, has a shaft position indicator for sight control of the wear of balancing device surfaces and for restraining rotor axial displacements towards the delivery side.
The pump rotor is carried by the plain bearings with ring lubrication (with forced lubrication from a pressure lubrication installation for the pump ПЭ 270-150).
The design of pump shaft seal chambers provides both for housing mechanical seals and for packing the stuffing boxes, which are to fed with cooling liquid.
Sense of rotation of shaft in all the pumps is counterclockwise (clockwise in case of ПЭ 270-150), if viewed from the drive side.

Coverage chart of the ПЭ Series Pumps



Handled Media:
- Feed water up to 165 °C

DN	mm	100 - 300
Q	m^3/h	320
H	m	2150
p	kg/cm^2	7, 10
t	°C	+165
n (sync)	rpm	3000

Pump make
ПЭ 65-28-С,-Т УХЛ4
ПЭ 65-32-С,-Т УХЛ4
ПЭ 65-40-С,-Т УХЛ4
ПЭ 65-53-С,-Т УХЛ4
ПЭ 100-32-С,-Т УХЛ4
ПЭ 100-53-С,-Т УХЛ4
ПЭ 150-53-С,-Т УХЛ4
ПЭ 150-63-С,-Т УХЛ4
ПЭ 250-75,-С УХЛ4
ПЭ 250-90,-С УХЛ4
ПЭ 250-105,-С УХЛ4
ПЭ 250-120,-С УХЛ4
ПЭ 250-135,-С УХЛ4
ПЭ 250-150,-С УХЛ4
ПЭ 250-165,-С УХЛ4
ПЭ 250-180,-С УХЛ4
ПЭ 270-110-3-С,-Т УХЛ4
ПЭ 270-125-3-С,-Т УХЛ4
ПЭ 270-135-3-С,-Т УХЛ4
ПЭ 270-150-3-С,-Т УХЛ4
ПЭ 270-150-3М-С,-Т УХЛ4

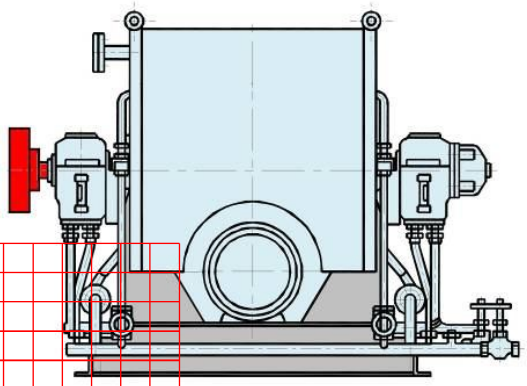
Boiler Feed Booster Pumps

ПД Model Near-Centerline Supported, Between-Bearings Double Flow Axially Split Pumps

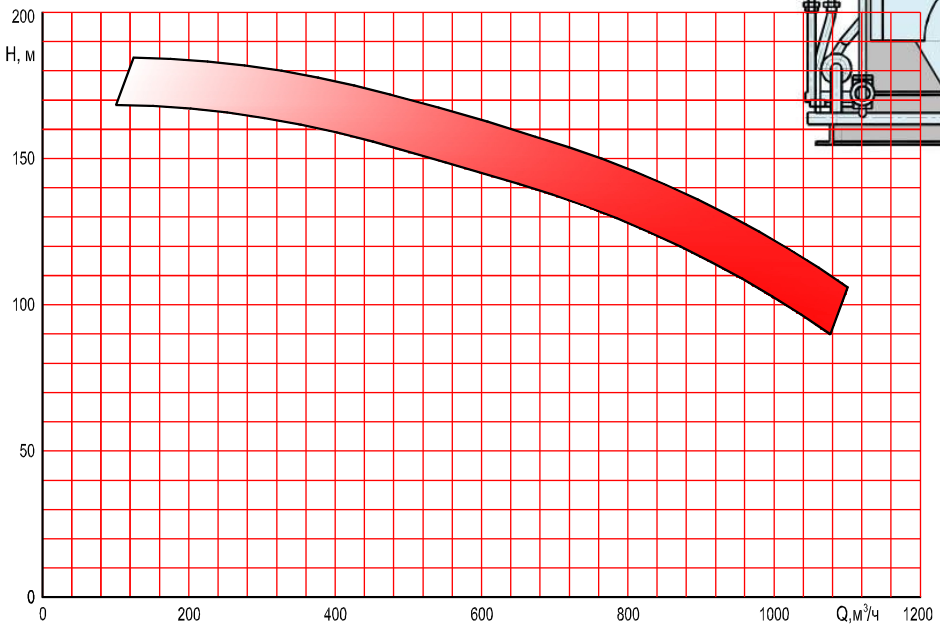
Applications: Designed to deliver feed water from the TPS de-aerator to boiler feed pumps. Also may be used for handling liquids similar to the same in viscosity and chemical activity.

Design: ПД model pump units consist of a centrifugal pump and an induction motor, which are mounted on their own fabricated base plates. The pump and motor shafts are connected by means of a rubber-bushed (pin-and-bushing) flexible coupling.

The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps
The pump as a component of the pump unit is a motor-driven horizontal single-stage axially split volute-casing centrifugal pump with a double entry radial impeller.
The pump casing features semi-spiral inlet hydraulic passages and spiral outlet hydraulic passages. Weld-end suction and discharge nozzles are arranged in the lower casing half and are oriented horizontally in the opposite directions.
The pump casing is near horizontal centerline supported in order to accommodate thermal expansions. In order to allow for free expansion of static components whilst maintaining coupling alignment, the pump feet on the drive side are dowelled to the base plate pedestal with round pins and the other end is provided with a key block at the lower casing part and a keyway in axial direction in the slipper pad (guide piece) on the base plate.
The pump rotor is carried by the plain bearings with ring lubrication. The bearing oil sump is cooled with cooling liquid supplied to a special chamber provided in the bearing housings.
The residual axial thrust of the pump rotor is compensated by an angular-contact thrust ball bearing. This bearing is designed to take up only axial forces and is radially movable.
Pump shaft sealing is by means of stuffing boxes (packed glands) fed with cooling and sealing liquid from an external source.
Sense of rotation of pump shaft is counterclockwise, if viewed from the drive side.



Coverage chart of the ПД Model Pumps



Pump make
ПД 650-160 УХЛ4
ПД 650-160 Т3

Handled Media:

- Feed water up to 165 °C

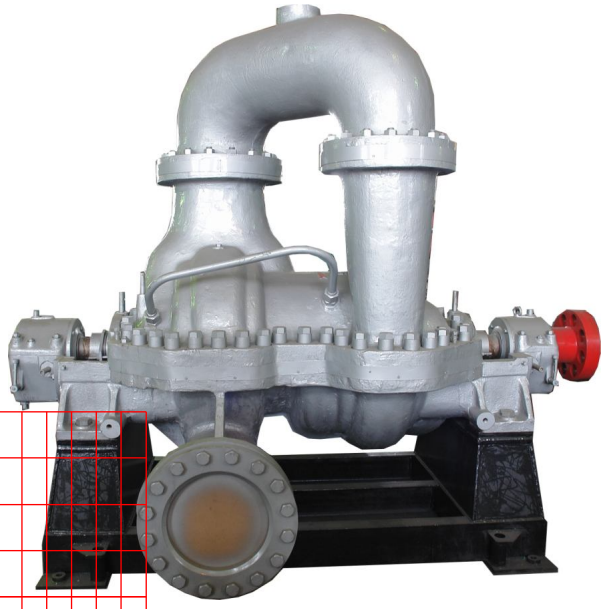
DN	mm	250, 300
Q	m^3/h	1100
H	m	182
p	kg/cm^2	10
t	°C	+165
n (sync)	rpm	3000

District Heating Pumps

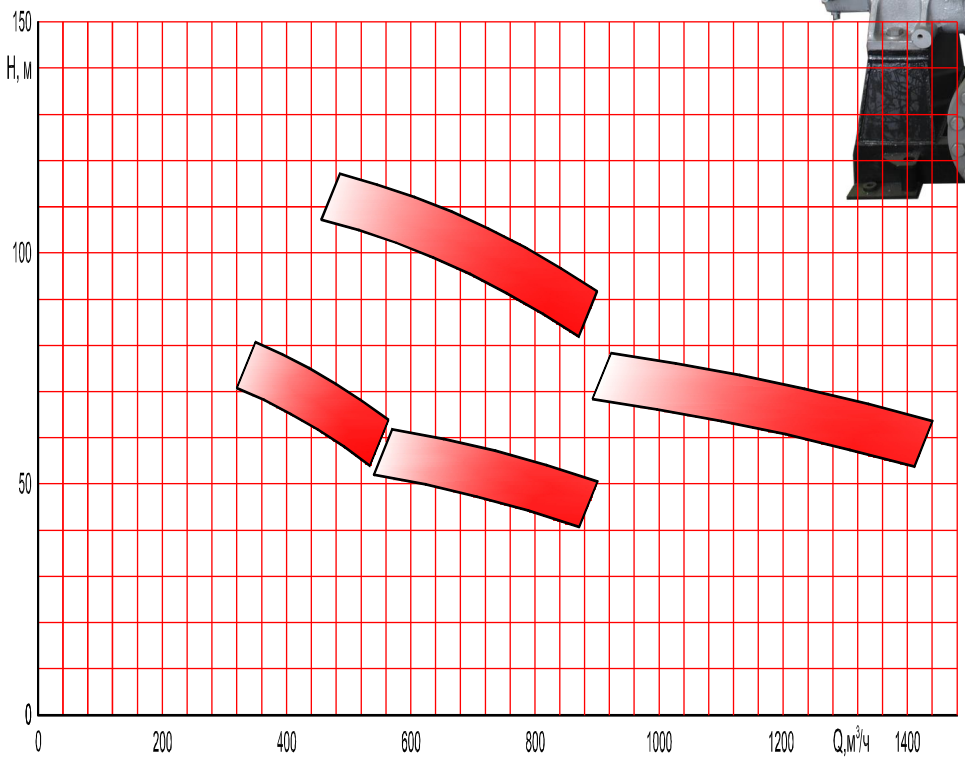
СЭ Series Between-Bearings Single-/Two-Stage Double Flow Axially Split Pumps

Applications: To be installed in main plants for hot water circulation in the heating circuit systems within a whole district.

Design: АСЭ series pump units consist of a centrifugal pump, an induction motor, a drive coupling, a coupling guard and a fabricated base plate.
The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps.
The pump are electrically driven horizontal single stage or two-stage (СЭ 800-100-11 and СЭ 1250-140-11) axially split volute casing centrifugal pumps with one or two (in case of two-stage pumps) double entry radial impellers. The stages are communicated with interstage crossover. Semicentreline casing support for accurate alignment.
The pump rotor is carried by the oil-ring or pressure lubricated plain or antifriction bearings with oil bath.
Pump shaft sealing is by means of packed glands.
Sense of rotation of pump shaft is clockwise or counterclockwise (in case of СЭ 500-70-16-С and СЭ 800-55-11-С), if viewed from the drive side:



Coverage chart of the СЭ Series Pumps



Handled Media:
- Water up to 180 °C

DN	mm	252, 303, 325, 377
Q	m^3/h	1440
H	m	116
p	kg/cm^2	11
t	°C	+180
n (sync)	rpm	1500, 3000

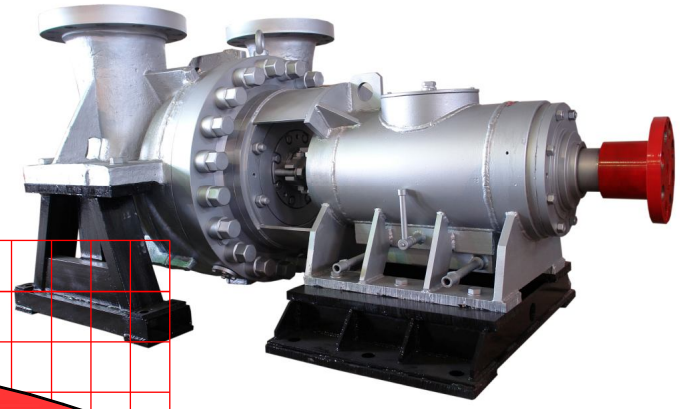
Pump make
СЭ 1250-140-11-С УХЛ4
СЭ 1250-140-11-Т УХЛ4
СЭ 1250-70-11-С УХЛ4
СЭ 1250-70-11-Т УХЛ4
СЭ 800-100-11-С УХЛ4
СЭ 800-100-11-Т УХЛ4
СЭ 800-55-11-С УХЛ4
СЭ 800-55-11-Т УХЛ4
СЭ 500-70-16-С УХЛ4
СЭ 500-70-16-Т УХЛ4

Circulating Pumps

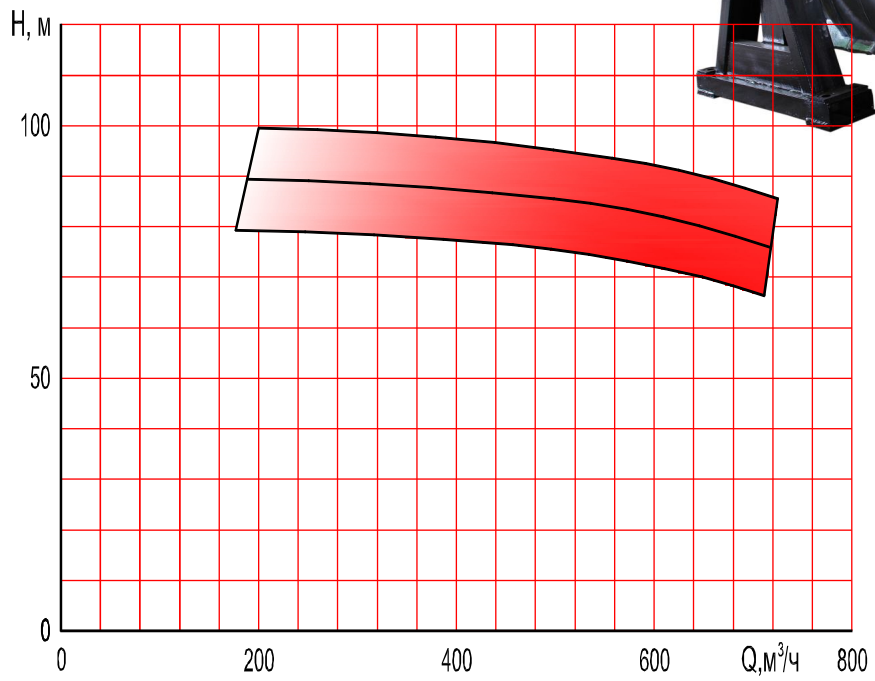
KO Series Centreline-Supported Top-Suction Single-Stage Pumps with Overhung Impeller

Applications: Designed for forced circulation of superheated boiler water within a closed-circuit systems in the exhaust-heat boilers. May be also used for handling liquids similar to the same in viscosity and chemical activity.

Design: KO series pump units consist of a centrifugal pump and an induction motor, which are connected by means of a rubber-bushed (pin-and-bushing) flexible coupling and mounted on a common fabricated base plate.
The pumps are electrically driven, horizontal, centreline-supported, back pull-out, radially-split, single stage volute-casing centrifugal pumps with overhung impeller and bearing pedestal.
Flanged suction and discharge nozzles integrally cast with the pump casing are vertically to the top.
A casing cover is provided with a thermal barrier chamber.
The pump rotor is carried by oil-bath lubricated antifriction bearings. Inner space of the bearing pedestal serves as their oil sump. The design provides for its cooling with liquid supplied into a special chamber of the bearing pedestal.
Shaft sealing: stuffing box (packed gland) fed with cooling and sealing liquid from an external source.
Sense of rotation of pump shaft is counterclockwise, if viewed from the drive side.



Coverage chart of the KO Series Pumps



Pump make
КО 650-90 УХЛ4
КО 650-80 УХЛ4
КО 650-70 УХЛ4
КО 500-75 УХЛ4

Handled Media:
- Water up to 260 °C

DN	mm	200, 250
Q	m^3/h	722
H	m	100
p	kg/cm^2	51
t	°C	+1 - +260
n (sync)	rpm	1500

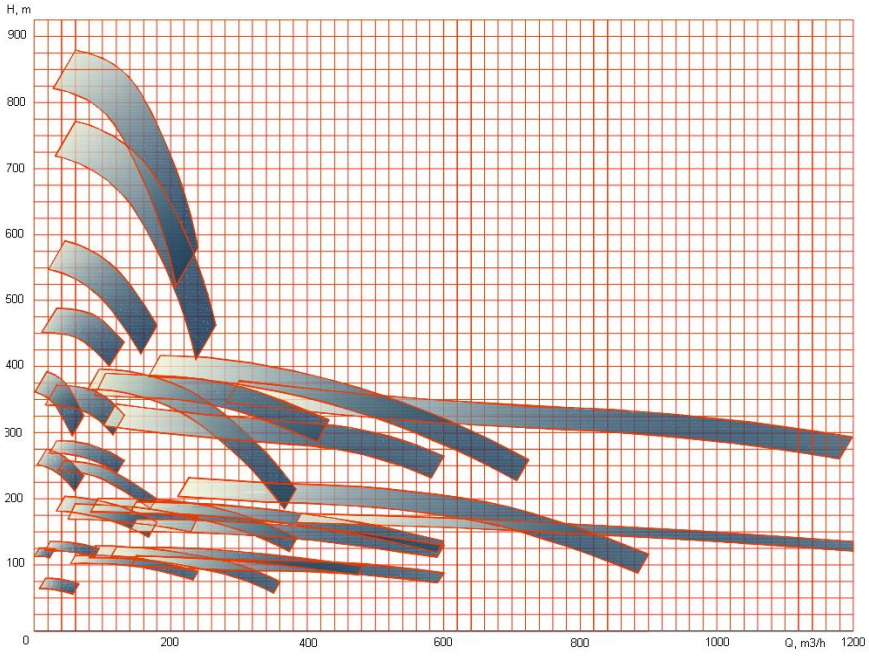
Series НДг and НМДг Process Pumps for Hot Refined Products

НДг Series Single Stage Radially Split Barrel-Insert Pumps

НДМг Series Radially Split Multistage Segmental / Barrel-Insert Pumps

Applications: Designed for handling refined products at the process plants in the oil-refining industry.
Design: АНДг and АНДМг series pump units consist of a centrifugal pump and an induction motor in the explosion-proof version, which are mounted either on a common base plate (if the nominal power of the motor is less than 400 kW) or on separate base plates. The pump and motor shafts are connected by means of a flexible coupling. The pump units shall be rigidly anchored to the foundation, and piping shall be also rigidly connected to the pumps.
The pumps as components of the pump units are electrically driven horizontal, between-bearings, centreline-supported, single- or multistage segmental or barrel type centrifugal pumps with hydraulic balancing of rotor axial thrust.
Flanged nozzles are oriented: radially to the top (discharge) and tangentially horizontally sideways (suction). Counter flanges have a weld neck.
Upon the Customer's request, the suction nozzle may be arranged vertically.
In order to enable the pump to withstand hot and cold shocks and thus to allow for free expansion of static components during the pump operation whilst maintaining coupling alignment, the pump feet on the drive side are rigidly dowelled to the base plate pedestal and the other end is pinned so that it should be axially moveable.
The pump rotor is carried either by the oil-bath lubricated antifriction bearings with forced cooling (if the nominal power of the motor is less than 400 kW), or by the oil-bath lubricated plain bearings (in case of the nominal motor power within 400 to 630 kW), or by the pressure lubricated plain bearings with lube oil supplied by a pressure lubrication installation (if the nominal power of the motor is over 630 kW).
Shaft sealing is by mechanical seals in tandem arrangement, which utilizes a pressurized barrier fluid, neutral to handled medium. Handled medium near the shaft seals is cooled by cooling liquid supplied into the thermal barrier chambers.
Sense of rotation of pump shaft is shown with a rotation arrow attached to the pump casing or to the bearing housing on the drive side.
The motor pump units shall be controlled by a process monitoring, control, warning/alarm and emergency trip system as required in ПБ 09-540-03.

Coverage chart of the НДг and НДМг Series Pumps



Handled Media:
- Refined products up to 400 °C at the process plants in the oil-refining industry

DN	mm	75 - 386
Q	m^3/h	1200
H	m	875
p	kg/cm^2	12
t	°C	+400
n (sync)	rpm	1500, 3000

Pump make	
НДг 55-70 У2	НДМг 110-350 У2
НДг 80-130 У2	НДМг 110-460 У2
НДг 200-100 У2	НДМг 150-180 У2
НДг 200-180 У2	НДМг 150-220 У2
НДг 300-100 У2	НДМг 150-510 У2
НДг 320-170 У2	НДМг 200-720 У2
НДг 400-110 У2	НДМг 220-600 У2
НДг 500-100 У2	НДМг 320-290 У2
НДг 500-160 У2	НДМг 360-350 У2
НДг 1300-125	НДМг 500-145 У2
НДМг 25-125 У2	НДМг 500-300 У2
НДМ г 60-250	НДМг 600-320 У2
НДМг 60-350 У2	НДМг 750-170 У2
НДМг 110-270	НДМг 1000-320 У2

Series НК and НКВ Process Pumps for Volatile Flammable and Inflammable Liquids

НК Series End Suction Pumps with Overhung Impeller(s) and НКВ Series Inducer End Suction Pumps with Overhung Impeller(s)

Applications: Designed for handling volatile flammable and inflammable liquids at the process plants in the oil-refining industry. May also be used for handling water.

Design: АНК and АНКВ series pump units consist of a centrifugal pump and an induction motor in the explosion-proof version, which are mounted on a common base plate.

The pump and motor shafts are connected by means of a diaphragm flexible coupling. The pump units shall be rigidly anchored to the foundation, and piping shall be also rigidly connected to the pumps.

The pumps as components of the pump units are electrically driven horizontal, end-suction, centreline-supported, back pull-out, single- or two-stage centrifugal pumps with overhung impeller(s). Suction nozzle is axially horizontal and discharge nozzle is radially to the top. Counter flanges have a weld neck.

Pump shaft sealing is by mechanical seals in tandem arrangement, which utilizes a pressurized barrier fluid, neutral to handled medium.

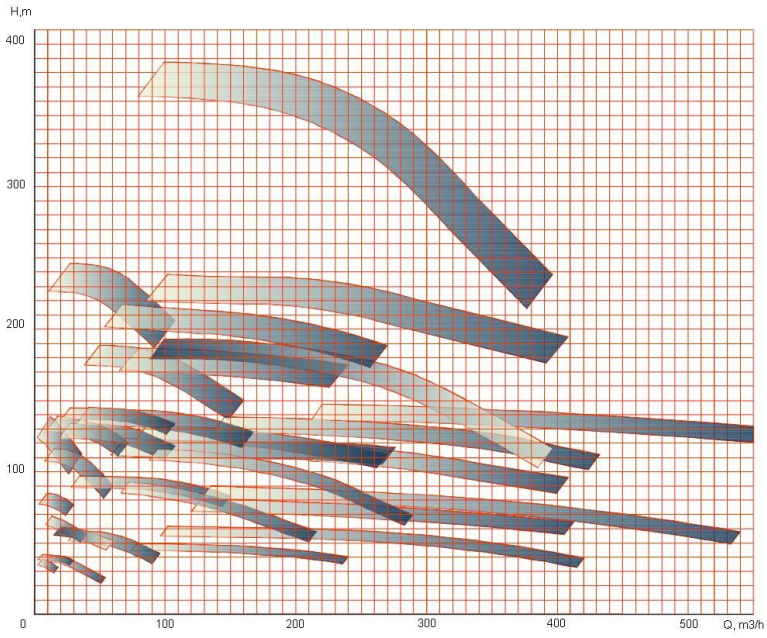
The pump design provides for cooling the mechanical seal chamber (heat barrier) with cooling liquid supplied. In case of using the pumps for handling liquids with a temperature below 90°C, cooling liquid inlet/outlet holes shall be plugged.

The pump rotor is carried by the oil-bath lubricated antifriction bearings. Inner space of the bearing bracket serves as their oil sump. The design provides for its cooling with liquid supplied into a special chamber of the bearing bracket.

Sense of rotation of pump shaft is shown with a rotation arrow attached to the bearing bracket.

The motor pump units shall be controlled by a process monitoring, control, warning/alarm and emergency trip system as required in ПБ 09-540-03.

Coverage chart of the НК and НКВ Series Pumps



Handled Media:

НК, НКВ XX-XX У2 - Refined products up to 120 °C

НК, НКВ XX-XX-Г У2 - Refined products 120 °C to 360 °C

			Г
DN	mm	47 - 254	47 - 254
Q	m^3/h	680	680
H	m	187	388
p	kg/cm^2	12	12
t	°C	+120	+120 - +360
n (sync)	rpm	1500, 3000	1500, 3000

Pump make	
НК 15-35,-Г У2	НКВ 30-60-Г У2
НКВ 25-80,-Г У2	НКВ 30-120-Г У2
НК 30-60,-Г У2	НКВ 45-30-Г У2
НК 30-120,-Г У2	НКВ 50-100-Г У2
НКВ 50-55,-Г У2	НКВ 65-125-Г У2
НКВ 80-50,-Г У2	НКВ 90-125-Г У2
НК 80-125,-Г У2	НКВ 90-140-Г У2
НКВ 200-45,-Г У2	НКВ 90-220-Г У2
НКВ 200-180,-Г У2	НКВ 125-90-Г У2
НКВ 125-170,-Г У2	НКВ 140-135-Г У2
НКВ 180-70,-Г У2	НКВ 225-200-Г У2
НКВ 225-120,-Г У2	НКВ 230-120-Г У2
НК 225-120,-Г У2	НКВ 330-150-Г У2
НКВ 240-90,-Г У2	НКВ 330-300-Г У2
НК 340-80,-Г У2	НКВ 340-105-Г У2
НКВ 360-125,-Г У2	НКВ 340-210-Г У2
НКВ 550-130,-Г У2	НКВ 350-50-Г У2
НКВ 25-40-Г У2	НКВ 450-70-Г У2

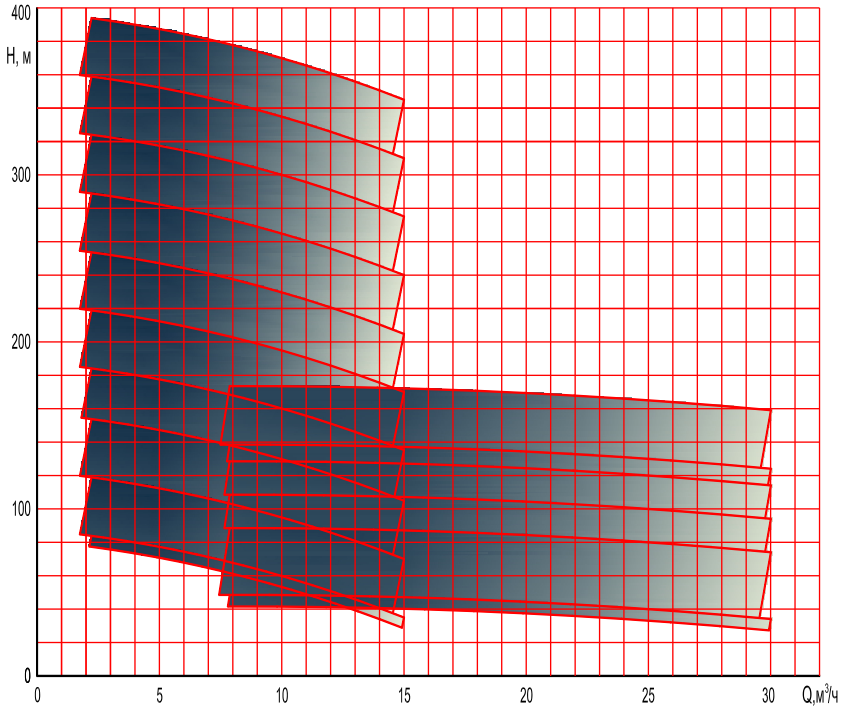
Series НДМс Process Pumps for Multiple Services

НДМс Series Between-Bearings Multistage Segmental Pumps

Applications: Designed for handling liquefied hydrocarbon gases, volatile flammable and inflammable liquids as well as solutions of inorganic alkalis (sodium hydroxide) at the process plants in the oil-refining industry.
May be also used to transfer water and condensate in the steam and water circuit systems.
Design: НДМс series motor pump units consist of a centrifugal pump and an induction motor in the explosion-proof version, which are mounted on a common fabricated base plate.
The pump and motor shafts are connected by means of a flexible coupling. The pump units shall be rigidly anchored to the foundation, and piping shall be also rigidly connected to the pumps.
The pumps as components of the pump units are electrically driven horizontal, centreline-supported, multistage ring section centrifugal pumps with rotor axial thrust balancing by a balance drum.
The suction and delivery casings of the pump have flanged suction and discharge nozzles respectively which are oriented radially to the top. Counter flanges have a weld neck.
In order to enable the pump to withstand hot and cold shocks and thus to allow for free expansion of static components during the pump operation whilst maintaining coupling alignment, the delivery casing (on the drive side) are rigidly dowelled to the base plate pedestal and the other end is pinned so that it should be axially moveable.
The pump rotor is carried by the grease lubricated or oil-bath (with oil ring) lubricated antifriction bearings.
Pump shaft sealing is by mechanical seals in tandem arrangement, which utilizes a pressurized barrier fluid, neutral to handled medium.
Sense of rotation of pump shaft is:

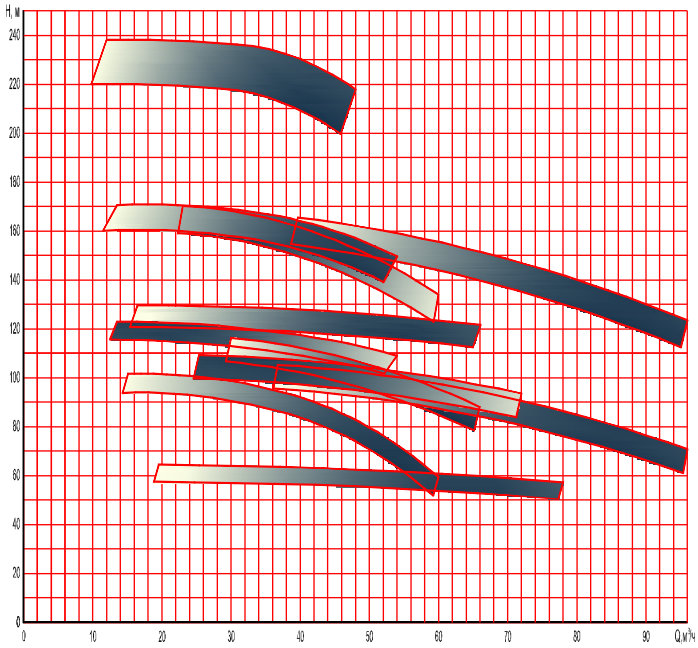
- either counterclockwise (in case of the pump models НДМс 15, НДМс 25, НДМс 40, НДМс 45, НДМс 50, НДМс 55, НДМс 60, НДМс 65 and НДМс 8), if viewed from the drive side;
- or clockwise (in case of the pump models НДМс 75 и НДМс 105), if viewed from the drive side;

Coverage chart of the НДМс 15 and НДМс 25 Model Pumps



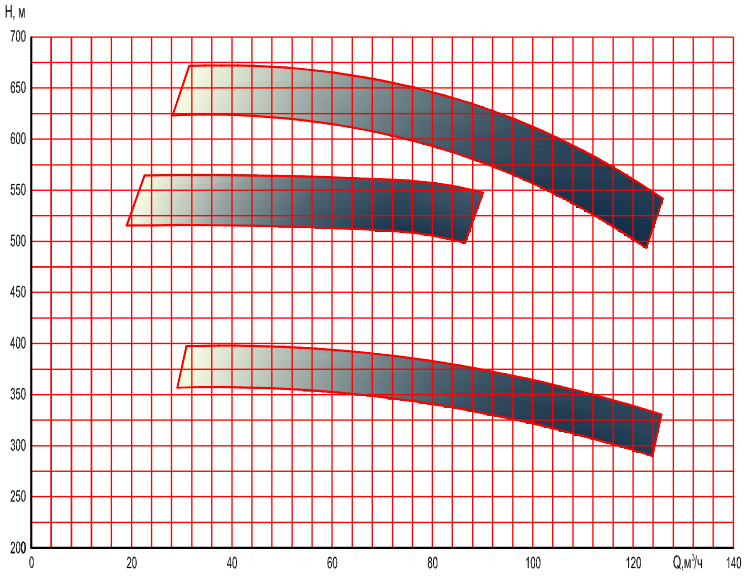
Pump make
НДМс 15-345-НП, -НПг, -СГ У2
НДМс 15-310-НП, -НПг, -СГ У2
НДМс 15-275-НП, -НПг, -СГ У2
НДМс 15-240-НП, -НПг, -СГ У2
НДМс 15-205-НП, -НПг, -СГ У2
НДМс 15-170-НП, -НПг, -СГ У2
НДМс 15-135-НП, -НПг, -СГ У2
НДМс 15-105-НП, -НПг, -СГ У2
НДМс 15-70-НП, -НПг, -СГ У2
НДМс 15-35-НП, -НПг, -СГ У2
НДМс 25-165-НП, -НПг, -СГ У2
НДМс 25-130-НП, -НПг, -СГ У2
НДМс 25-120-НП, -НПг, -СГ У2
НДМс 25-100-НП, -НПг, -СГ У2
НДМс 25-80-НП, -НПг, -СГ У2
НДМс 25-40-НП, -НПг, -СГ У2

Coverage chart of the НДМс Series Pumps



Pump make
НДМс 40-230-НП, -НПг, -СГ У2
НДМс 45-160-НП, -НПг, -СГ У2
НДМс 45-115-НП, -НПг, -СГ У2
НДМс 50-150-НП, -НПг, -СГ У2
НДМс 50-80-НП, -НПг, -СГ У2
НДМс 55-125-НП, -НПг, -СГ У2
НДМс 55-100-НП, -НПг, -СГ У2
НДМс 60-100-НП, -НПг, -СГ У2
НДМс 65-60-НП, -НПг, -СГ У2
НДМс 80-140-НП, -НПг, -СГ У2
НДМс 80-85-НП, -НПг, -СГ У2

Coverage chart of the НДМс 75 and НДМс 105 Model Pumps



Pump make
НДМс 75-660-НП, -НПг У2
НДМс 75-560-НП, -НПг У2
НДМс 105-600-НП, -НПг У2
НДМс 105-360-НП, -НПг У2

Handled Media:

НДМс ХХ-ХХ-СГ У2 - Liquefied hydrocarbon gases 10 ºC to 60 ºC

НДМс ХХ-ХХ-НПг У2 - Refined products up to 280 ºC

НДМс ХХ-ХХ-НП У2 - Refined products up to 120 ºC
Solutions of inorganic alkalis: sodium hydroxide (NaOH) 10 ºC to 50 ºC

		НП	НПг	СГ
DN	mm	50-200	50-200	50 - 146
Q	m^3/h	126	126	96
H	m	675	675	392
p	kg/cm^2	23	23	23
t	ºC	+10 - +50, +120	+280	+10 - +60
n (sync)	rpm	3000	3000	3000

Series HMcr Process Pumps for Liquefied Hydrocarbons

HMcr Series Between-Bearings Cartridge-Type Radially Split Barrel-Insert Pumps

Applications: Designed for handling liquefied hydrocarbon gases (with the density up to 510 kg/m^3) in the oil-refining industry.

The pumps (pump units) are supplied according to Specifications ТУ У29.1-34933255-014:2007.

Design: HMcr motor pump units consist of a pump and an induction motor in explosion-proof version, which are mounted on a common fabricated base plate.

Shafts of the pump and motor are connected by means of a diaphragm flexible coupling.

The pump units shall be rigidly anchored to the foundation, and piping shall be rigidly connected to the pumps.

The pumps as components of the pump units are electrically driven horizontal, centreline-supported, multistage radially split barrel-casing centrifugal pumps with a withdrawable cartridge of diffuser ring section type and with rotor axial thrust balancing either by a balance drum (in case of the pump makes HMcr 25-125 У2 and HMcr 550-500 У2) or by a balance disc (in case of the pump makes HMcr 360-500 У2, HMcr 450-400 У2 and HMcr 450-500 У2).

The barrel (outer casing of the pump) has flanged suction and discharge nozzles, which are oriented radially to the top. Counter flanges have a weld neck.

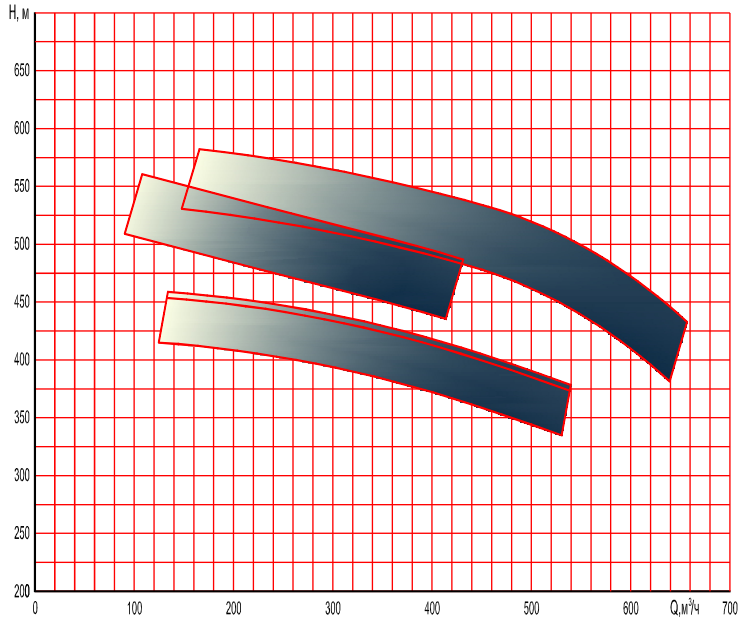
The rotor of the pump makes HMcr 25-125 У2, HMcr 360-500 У2, HMcr 450-400 У2 and HMcr 450-500 У2 is carried by the oil-ring lubricated antifriction bearings with oil-bath.

In case of the pump make HMcr 550-500 У2 the rotor is carried by the oil-ring lubricated plain bearings with oil-bath.

Pump shaft sealing is by mechanical seals in tandem arrangement, which utilizes a pressurized barrier fluid, neutral to handled medium.

Sense of rotation of pump shaft is shown with a rotation arrow attached to the pump casing or to the bearing housing on the drive side.

Coverage chart of the HMcr Series Pumps



Pump make
HMcr 25-125 У2
HMcr 360-500 У2
HMcr 450-400 У2
HMcr 450-500 У2
HMcr 550-500 У2

Handled Media:

Liquefied hydrocarbon gases (with the density up to 510 kg/m^3) 10 °C to 60 °C

DN	mm	80 - 350
Q	m^3/h	655
H	m	560
p	kg/cm^2	23
t	°C	+10 - +60
n (sync)	rpm	3000

Series НДД Process Pumps for Hot Refined Products and Water

НДД Series Between-Bearings Single/Two Stage Double Flow Axially Split Volute Casing Pumps

НДД Series Between-Bearings Single Stage Double Flow Radially Split Circular Casing Pumps

Applications: Designed for handling refined products at the process plants in the oil-refining industry.
May be also used to pump over industrial water through processing trains in the oil-refining industry as well as for handling water and condensate in the steam and water circuit systems.

Design: АНДД series pump units consist of a centrifugal pump and an induction motor in the explosion-proof version, which are mounted either on a common base plate (if the nominal power of the motor is less than 400 kW) or on separate base plates. The pump and motor shafts are connected by means of a flexible coupling. The pump units shall be rigidly anchored to the foundation, and piping shall be also rigidly connected to the pumps. The pumps as components of the pump units are electrically driven horizontal, between-bearings, single- or two-stage centrifugal pumps with double entry impellers.

The pump casings are:

- axially split, with a semi-spiral inlet hydraulic passage and a spiral outlet hydraulic passage (in case of НДД 140-140, НДД 420-100, НДД 420-200, НДД 800-30, НДД 800-60, НДД 1100-60 and НДД 1200-70);
- radially split, with a tangential semi-spiral inlet hydraulic passage and a circular outlet hydraulic passage (in case of НДД 600-320 У2, НДД 500-290 У2, НДД 800-230 У2 and НДД 850-180 У2).

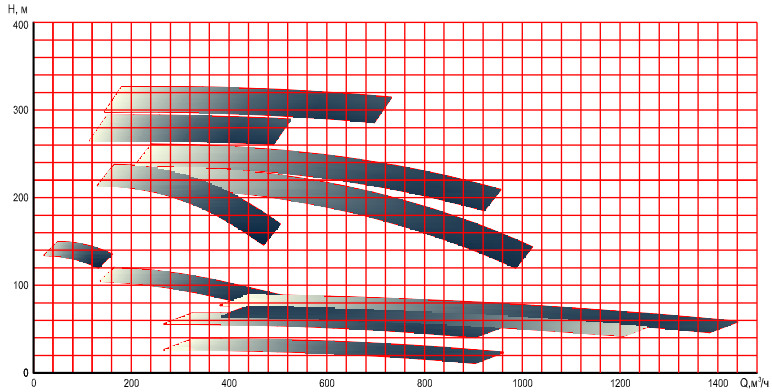
Flanged nozzles are integrally cast with the pump casing and are oriented:

- horizontally (discharge) and vertically to the bottom (suction) in the НДД 140-140 model pumps;
- tangentially (the suction nozzle is on one side and discharge nozzles is on the other side of the shaft centerline), facing opposite directions, in the НДД 420-100, НДД 420-200, НДД 800-30, НДД 800-60, НДД 1100-60 и НДД 1200-70 pump models;
- radially at side (suction) and vertically to top (discharge) in the НДД 600-320 У2, НДД 500-290 У2, НДД 800-230 У2 and НДД 850-180 У2 pump makes.

Counter flanges have a weld neck.
The rotor axial thrust is hydraulically balanced. The residual axial forces arising as a result of an uneven wear of sealing surfaces in the running clearances are taken up by the bearings.
Casings of the pumps for hot refined products are supported in the horizontal plane near the shaft centerline to accommodate thermal expansions. In order to allow for free expansion of static components whilst maintaining coupling alignment, the pump feet on the drive side are rigidly dowelled to the base plate pedestal and the other end is pinned so that it should be axially moveable.
The rotor in the НДД 140-140, НДД 420-100, НДД 420-200, НДД 800-30, НДД 800-60, НДД 1100-60 and НДД 1200-70 pump models is carried by the oil-bath lubricated antifriction bearings with forced cooling.
The rotor in the НДД 600-320 У2, НДД 500-290 У2, НДД 800-230 У2 and НДД 850-180 У2 pump makes is carried by the pressure lubricated plain bearings, with lube oil supplied by a pressure lubrication installation.
Shaft sealing is by mechanical seals:
- in tandem arrangement, which utilizes a pressurized barrier fluid, neutral to handled medium, and is provided with a cooling system in case of the pumps for hot refined products;
- single seals provided with a liquid cooling system in case of the pumps for industrial water.

Upon the Customer's request, pumps intended for handling industrial may be furnished with packed glands.
Handled medium near the shaft seals is cooled by cooling liquid supplied into the thermal barrier chambers.
Sense of rotation of pump shaft is shown with a rotation arrow attached to the pump casing or to the bearing housing on the drive side.

Coverage chart of the НДД Series Pumps

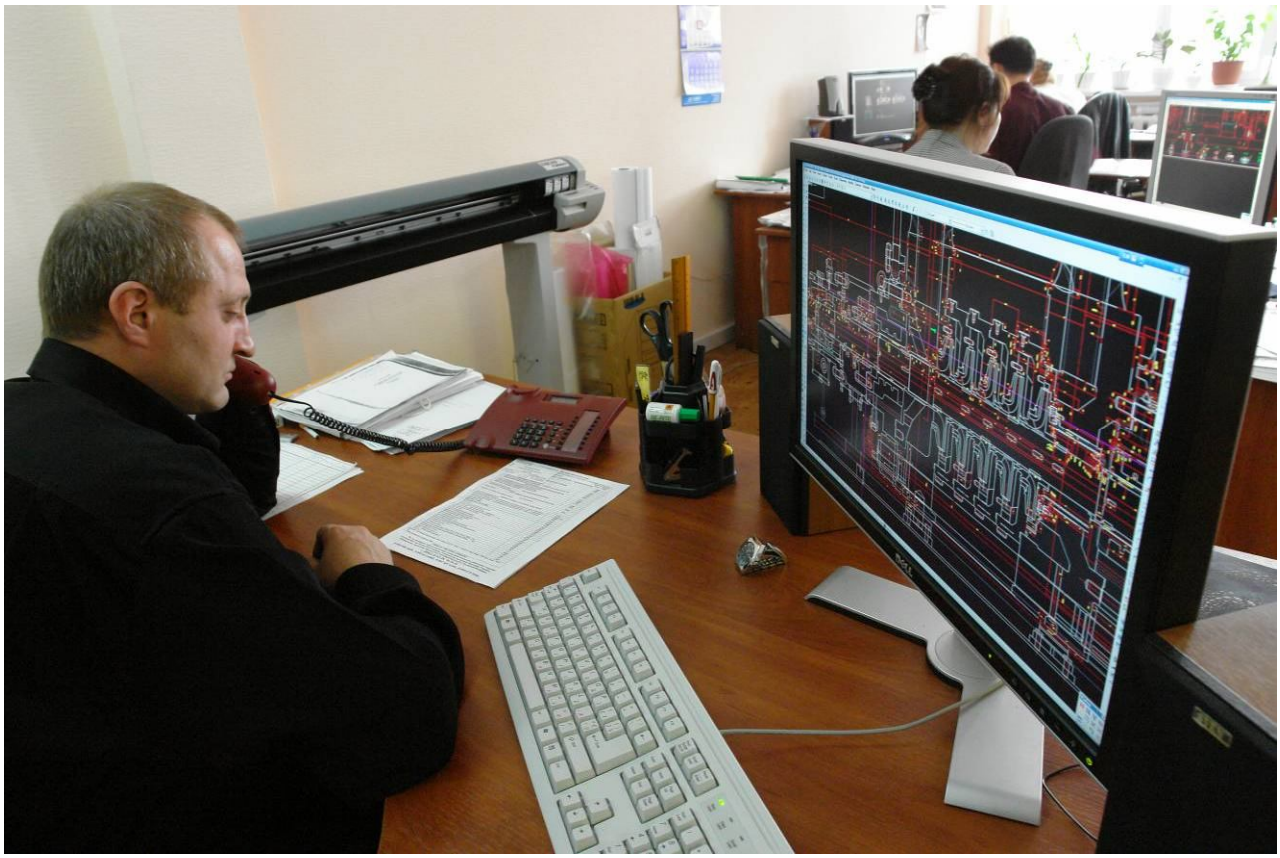


Handled Media:

НДД XX-XX У2 - Refined products up to 80 ºC
НДД XX-XX-Г У2 - Refined products up to 400 ºC
НДД XX-XX-1 УХЛ4 - Water up to 80°C

			Г
DN	mm	100 - 350	200-350
Q	m^3/h	1440	1020
H	m	238	325
p	kg/cm^2	4	10
t	°C	+80	+400
n (sync)	rpm	1000, 1500	3000

Pump make
НДД 140-140, -1 УХЛ4
НДД 420-100, -1 УХЛ4
НДД 420-200, -1 УХЛ4
НДД 800-30, -1 УХЛ4
НДД 800-60, -1 УХЛ4
НДД 1100-60 , -1 УХЛ4
НДД 1200-70, -1 УХЛ4
НДД 600-320-Г У2
НДД 500-290-Г У2
НДД 800-230-Г У2
НДД 850-180-Г У2



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