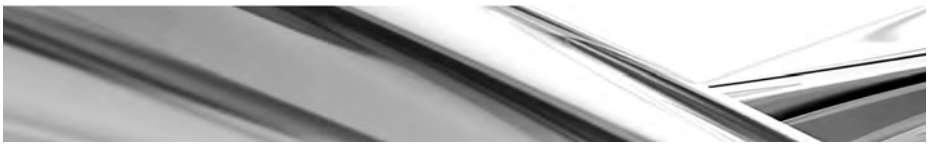
ENGINEERING FLOW SOLUTIONS

# WATER SUPPLY & SEWAGE DISPOSAL
## STANDARD PUMPS

## PRODUCT CATALOGUE

# CONTENTS



## The HMS Group

HMS GROUP is a large manufacturer of pumps, compressors, and oil & gas equipment as well as the integrated solutions provider for oil & gas, nuclear & thermal energy, water & utilities.

## Key Facts and Figures

- HMS Group foundation – 1993
- Manufacturing facilities in Russia, CIS and Europe
- Over 16 500 employees

## Main Business Activities

**Pumps**

- Oil & gas industry applications (including API 610 11th ed. pumps)
- Termal & nuclear energy applications
- Water supply & sewage disposal
- Steel, mining and other industries

**Compressors**

- Compressor units
- Compressor packages
- Gas transportation units
- Complete compressor stations
- Refrigerating machines

**Oil & Gas equipment**

- Modular and skid-mounted units
- Mobile & stationary cement storages
- Downhole equipment
- Tanks, pressure vessels, heat exchangers
- Flow meters

## Integrated Client Support

**Project Audit**

- Technical audit
- Scope of works definition
- Project scheduling and budgeting

**Engineering, Procurement, Manufacture, Testing**

- Design and engineering dossier
- Manufacturing of main process equipment (pumps, compressors, pressure vessels, heat exchangers)
- Outsourcing of auxiliaries
- Factory assembly
- Factory Acceptance Test

**Supply and Site Services**

- Shipment
- Site installation
- Pre-commissioning
- Site Performance Tests
- Site Supervision and on-the-job training
- After sales servicing and counseling

## Quality

HMS Group Quality Management System complies with ISO 9001:2008. The equipment is manufactured in accordance with internationally recognized ISO, ANSI, DIN, ASME, ATEX and API standards and in accordance with the customer specifications as well.

## Global Presence

The HMS Group references list includes the international projects in Russia and the CIS, Western and Eastern Europe, Iraq, Indonesia, India, China, the USA and other countries.

## APPLICATION RANGE

| Pumps series | Water supply | | | Contaminated water | Sewage | Waste water | Irrigation | Drainage |
|---|---|---|---|---|---|---|---|---|
| | Clean water | Hot water | Wells | | | | | |
| **ECV*** | ✓ | | ✓ | | | | | |
| **CIRIS*** | ✓ | | ✓ | | | | | |
| **D** | ✓ | | | | | | ✓ | |
| **DNA** | ✓ | | | | | | ✓ | ✓ |
| **CN** | ✓ | ✓ | | | | | | |
| **CNS/CNSg** | ✓ | ✓ | | | | | | |
| **CNSv** | ✓ | ✓ | | | | | | |
| **K, 1K, 2K** | ✓ | ✓ | | | | | | |
| **KM, 1KM** | ✓ | ✓ | | | | | | |
| **1KML, KML** | | ✓ | | | | | | |
| **VK, VKS, VKO** | ✓ | | | | | | | |
| **CVK** | ✓ | ✓ | | | | | | |
| **SM, SMS** | | | | ✓ | ✓ | ✓ | | |
| **CMF** | | | | ✓ | ✓ | ✓ | | |
| **GNOM** | ✓ | | | ✓ | | ✓ | | ✓ |
| **N1V** | | | | ✓ | ✓ | ✓ | | ✓ |
| **BURUN®** | ✓ | | | | | | ✓ | |

* Please refer the separate technical catalogues for the Ciris and Fortis pump series

### Household pumps

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MALYSH®** | ✓ | | ✓ | | | | ✓ | |
| **BCP** | | | ✓ | | | | ✓ | |

# D SERIES
## CENTRIFUGAL DOUBLE SUCTION PUMPS

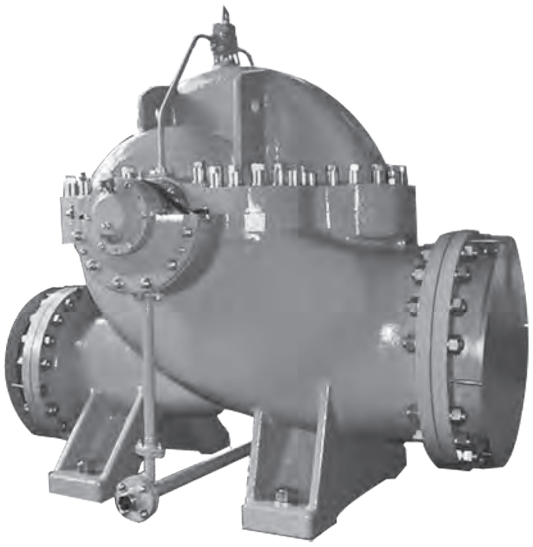
### APPLICATION

The centrifugal double suction pumps of the D series are intended for pumping of water and similar liquids:

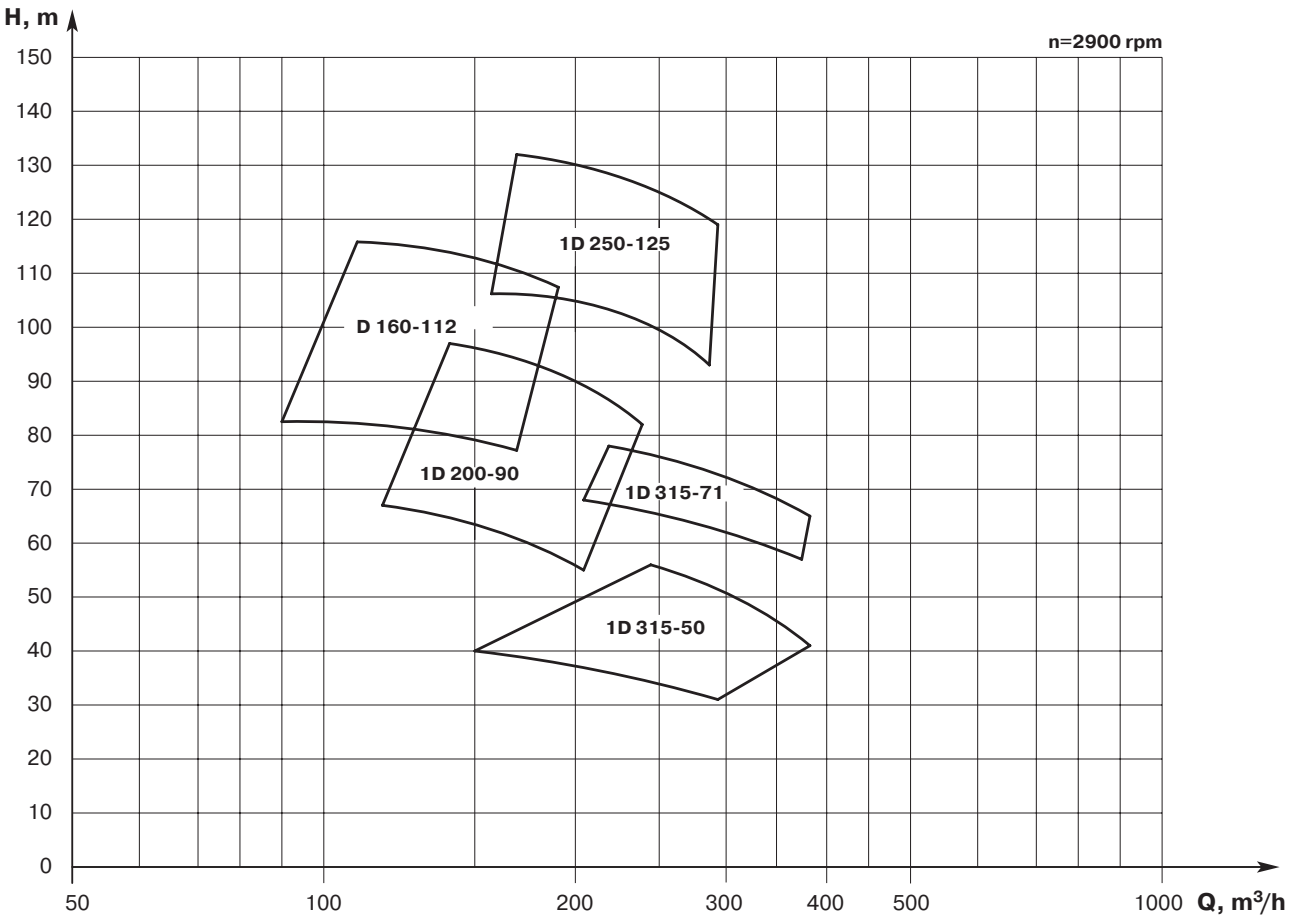
- max viscosity: $36x10^{-6}$ $m^2/s$ (36 cSt)
- max temperature: up to +85 °C
- max solids content: 0.05% by weight
- max solids size: 0.2 mm
- max microhardness: 6.5 GPa (650 kgf/$mm^2$).

The pumps are manufactured in accordance with the Russian State Standard (GOST) 15150-69.

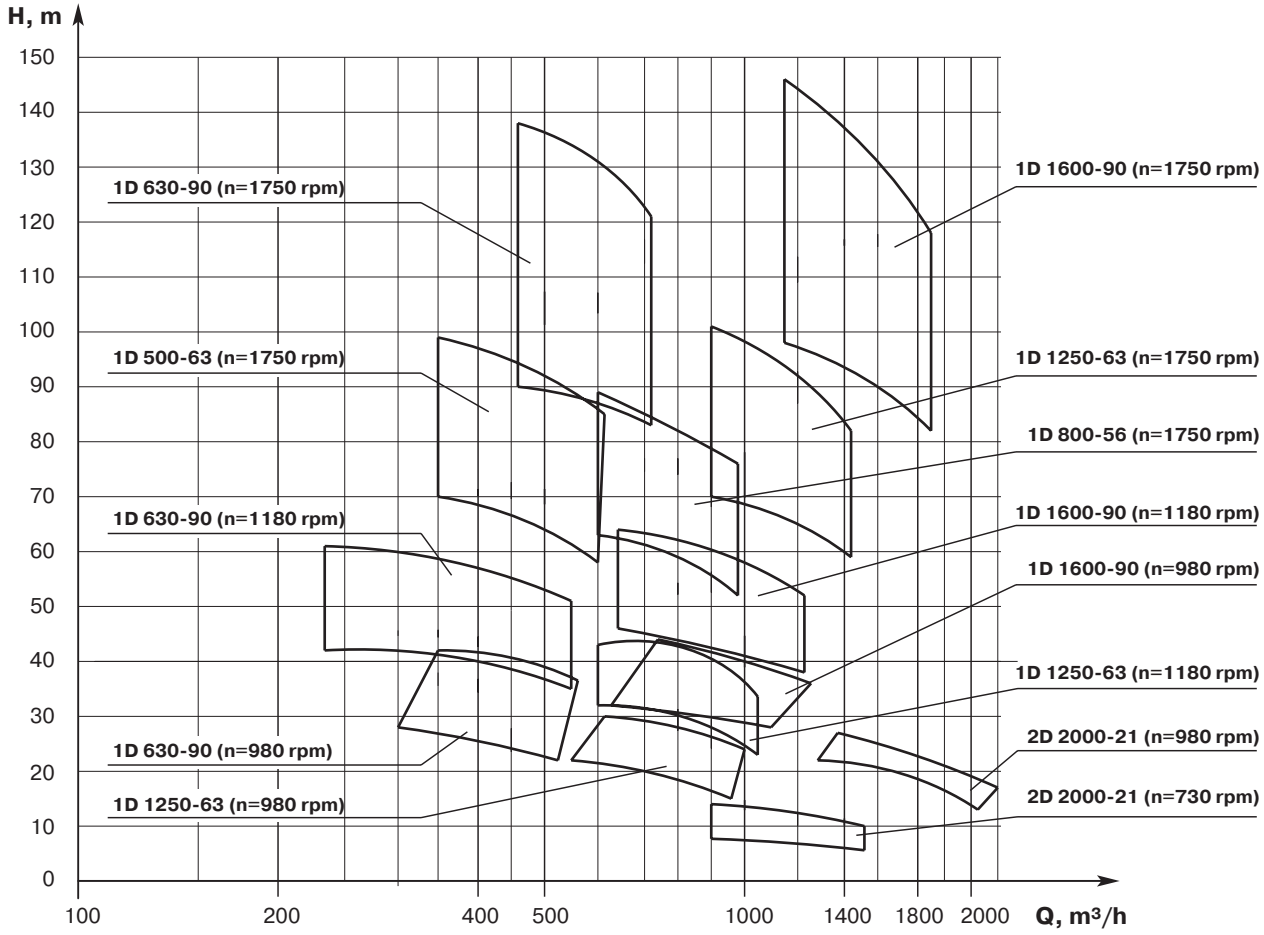
The pumps are not intended for application in explosion and fire hazardous areas.

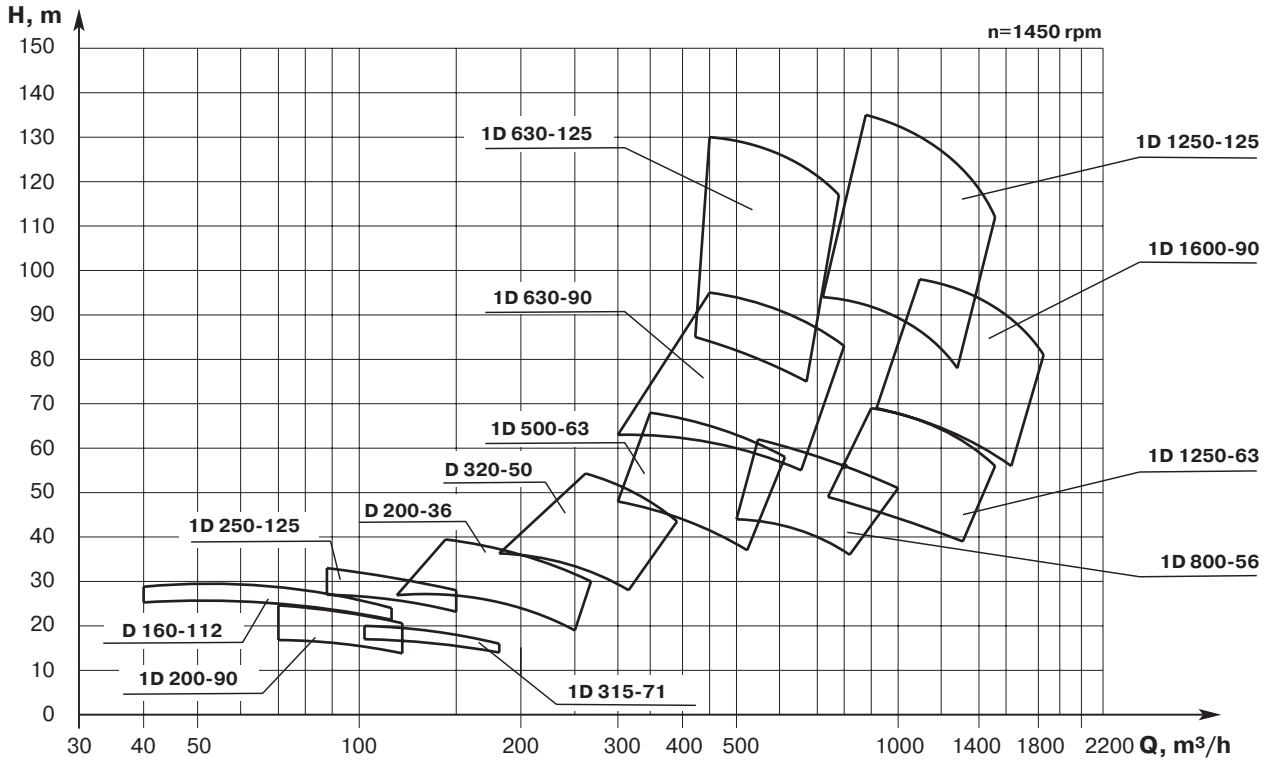


### PERFORMANCE RANGE

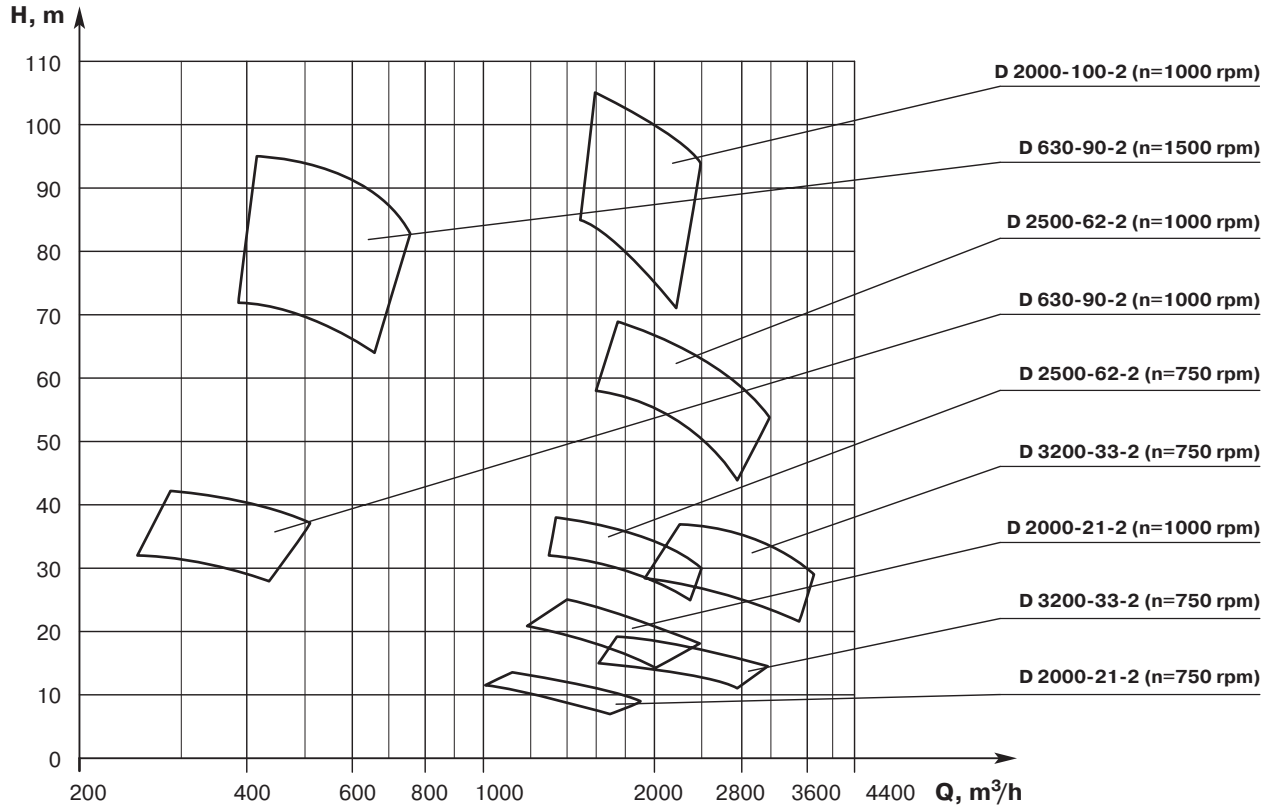


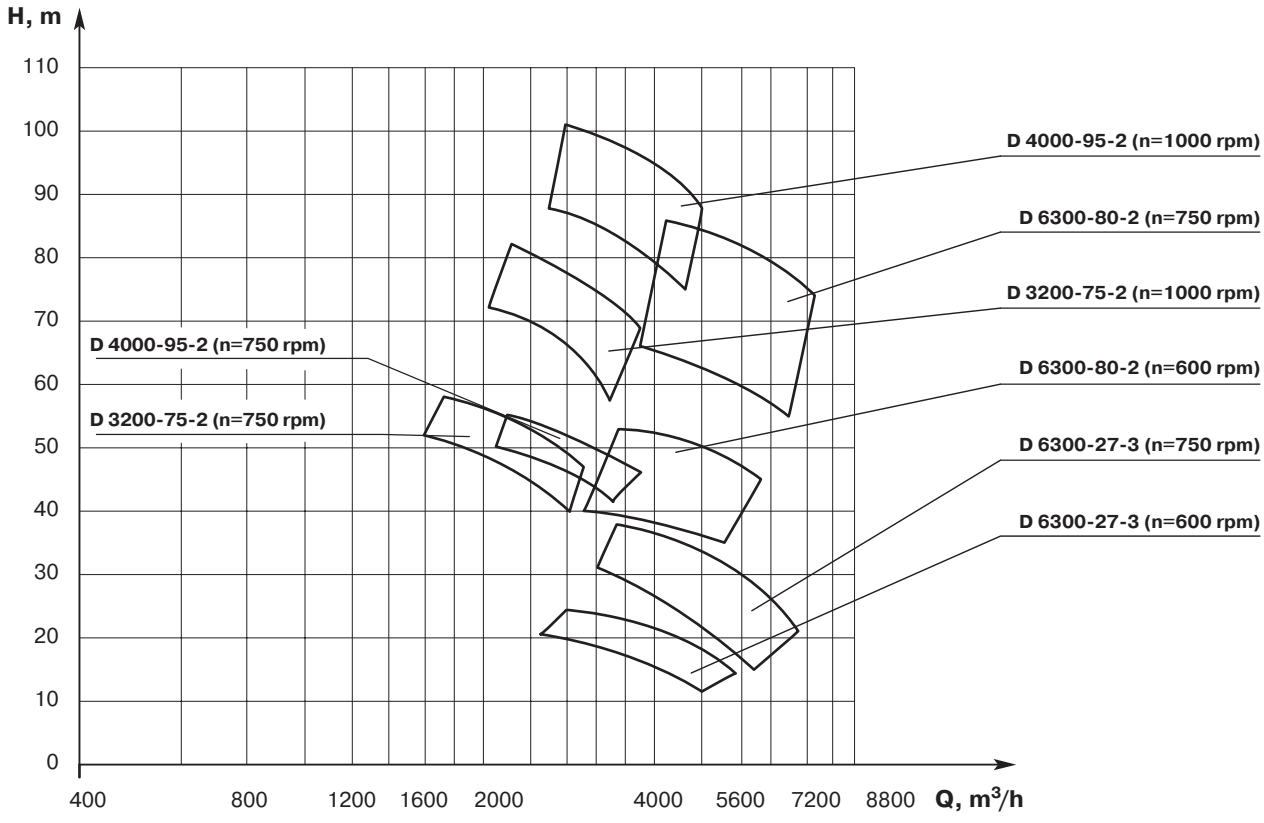
## PERFORMANCE RANGE



## PERFORMANCE RANGE



## PUMP SERIES DESIGNATION

**1D 200–90 / D 2500–62a–St–2 E**

X D XXXX - XX x - Xx X

- Series version*
- Pump series: D (doble suction)
- Capacity, $m^3/h$
- Head, m
- Type of impeller trimming (not specified for standard versions)
- Impeller and wear rings materials
- Model version*

* Location of the series version mark on the pump casing may vary depending on specific manufacturing facility of HMS Group.

## TECHNICAL DATA

| Pump | Capacity, $m^3/h$, ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power consumption, kW | NPSH, m | Efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| D 160-112m | 160 (0.044) | 122 | 48.3 (2900) | 78 | 4.8 | 73 | 200 |
| D 160-112 | 160 (0.044) | 112 | | 70 | | 73 | |
| D 160-112a | 150 (0.041) | 100 | | 58 | | 71 | |
| D 160-112b | 135 (0.037) | 80 | | 45 | | 67 | |
| D 160-112m | 90 (0.025) | 29.5 | 24.2 (1450) | 12 | 4.5 | 72 | |
| D 160-112 | 80 (0.022) | 28 | | 10 | | 72 | |
| D 160-112a | 70 (0.019) | 25 | | 8 | | 71 | |
| D 200-36 | 200 (0.055) | 36 | | 25 | 4.3 | 76 | 240 |
| D 200-36a | 190 (0.053) | 29.7 | | 20.5 | 5.3 | 73 | |
| D 200-36b | 180 (0.049) | 25 | | 16 | 6.0 | 68 | |
| D 320-50 | 320 (0.088) | 50 | | 52 | 4.5 | 80 | 300 |
| D 320-50a | 300 (0.083) | 39 | | 41 | 4.6 | 77 | |
| D 320-50b | 300 (0.083) | 30 | | 32 | 4.8 | 73 | |
| 1D 200-90 | 200 (0.055) | 90 | 48.3 (2900) | 65 | 5.5 | 77 | 145 |
| 1D 200-90a | 180 (0.049) | 74 | | 50 | 5.8 | 74 | |
| 1D 200-90b | 160 (0.044) | 62 | | 37 | 5.9 | 69 | |
| 1D 200-90 | 100 (0.028) | 22.5 | 24.2 (1450) | 8.5 | 5.3 | 76 | |
| 1D 250-125 | 250 (0.069) | 125 | 48.3 (2900) | 110 | 6.0 | 76 | 165 |
| 1D 250-125a | 240 (0.066) | 101 | | 85 | 6.4 | 73 | |
| 1D 250-125b | 225 (0.063) | 90 | | 75 | 6.6 | 70 | |
| 1D 250-125 | 125 (0.035) | 30 | 24.2 (1450) | 24 | 5.5 | 75 | |
| 1D 315-50 | 315 (0.087) | 50 | 48.3 (2900) | 53 | 6.5 | 83 | 190 |
| 1D 315-50a | 300 (0.083) | 42 | | 42 | 6.7 | 79 | |
| 1D 315-50b | 230 (0.061) | 36 | | 28 | 6.8 | 74 | |

## TECHNICAL DATA

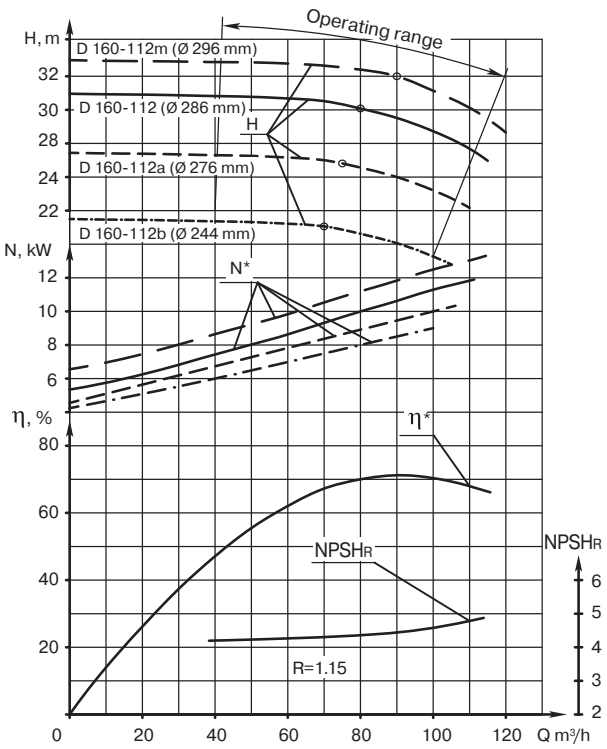
| Pump | Capacity, $m^3/h$, ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power consumption, kW | NPSH, m | Efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| 1D 315-71 | 315 (0.087) | 71 | 48.3 (2900) | 78 | 6.5 | 83 | 190 |
| 1D 315-71a | 300 (0.083) | 62 | | 63 | 7 | 79 | |
| 1D 315-71b | 280 (0.078) | 52 | | 55 | 7.3 | 76 | |
| 1D 315-71 | 150 (0.041) | 18 | 24.2 (1450) | 14.5 | 6.5 | 83 | |
| 1D 500-63 | 500 (0.140) | 63 | | 107 | 4.5 | 80 | 450 |
| 1D 500-63a | 450 (0.125) | 53 | | 80 | 4.8 | 77 | |
| 1D 500-63b | 400 (0.111) | 44 | | 65 | 5 | 75 | |
| 1D 630-90 | 630 (0.175) | 90 | | 188 | 5.5 | 82 | 524 |
| 1D 630-90a | 550 (0.153) | 74 | | 142 | 5.8 | 78 | |
| 1D 630-90b | 500 (0.140) | 60 | | 102 | 5.9 | 78 | |
| 1D 630-90 | 500 (0.140) | 38 | 16.3 (980) | 74 | 5 | 80 | |
| 1D 630-90a | 470 (0.131) | 30 | | 59 | 5.1 | 77 | |
| 1D 630-90b | 420 (0.117) | 25 | | 42 | 5.2 | 72 | |
| 1D 630-125 | 630 (0.175) | 125 | 24.2 (1450) | 290 | 5.5 | 75 | 797 |
| 1D 630-125a | 550 (0.153) | 101 | | 210 | 5.6 | 72 | |
| 1D 630-125b | 500 (0.14) | 82 | | 160 | 5.7 | 70 | |
| 1D 800-56 | 800 (0.220) | 56 | | 145 | 5 | 84 | 560 |
| 1D 800-56a | 740 (0.205) | 48 | | 119 | 5.1 | 81 | |
| 1D 800-56b | 700 (0.195) | 40 | | 100 | 5.2 | 76 | |
| 1D 1250-63 | 800 (0.220) | 28 | 16.3 (980) | 82 | 5.5 | 87 | 800 |
| 1D 1250-63a | 740 (0.205) | 24 | | 64 | 5.6 | 84 | |
| 1D 1250-63b | 710 (0.197) | 20 | | 47 | 5.7 | 79 | |
| 1D 1250-63 | 1250 (0.350) | 63 | 24.2 (1450) | 246 | 6 | 87 | |
| 1D 1250-63a | 1100 (0.306) | 52.5 | | 187 | 6.1 | 84 | |
| 1D 1250-63b | 1050 (0.292) | 44 | | 149 | 6.2 | 79 | |
| 1D 1250-125 | 1250 (0.350) | 125 | | 519 | 5.5 | 82 | 1300 |
| 1D 1250-125a | 1150 (0.319) | 102 | | 404 | 5.6 | 80 | |
| 1D 1250-125b | 1030 (0.286) | 87 | | 317 | 5.7 | 75 | |
| 1D 1600-90 | 1000 (0.280) | 40 | 16.3 (980) | 140 | 5 | 85 | 1165 |
| 1D 1600-90a | 970 (0.269) | 34 | | 104 | 5.1 | 82 | |
| 1D 1600-90b | 870 (0.242) | 30 | | 84 | 5.2 | 77 | |
| 1D 1600-90 | 1600 (0.445) | 90 | 24.2 (1450) | 460 | 7.0 | 85 | |
| 1D 1600-90a | 1450 (0.403) | 75 | | 360 | 7.1 | 82 | |
| 1D 1600-90b | 1300 (0.361) | 63 | | 275 | 7.2 | 77 | |
| 2D 2000-21 | 1250 (0.347) | 13 | 12.2 (730) | 56 | 3 | 88 | 1565 |
| 2D 2000-21a | 1250 (0.347) | 10 | | 42 | 3.5 | 85 | |
| 2D 2000-21 | 2000 (0.556) | 21 | 16.3 (980) | 135 | 5 | 86 | |
| 2D 2000-21a | 1750 (0.486) | 18 | | 99 | 5 | 84 | |

## TECHNICAL DATA

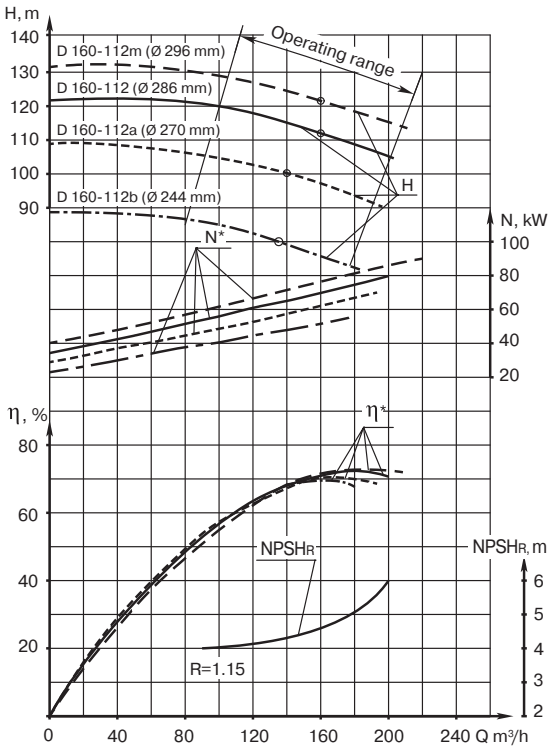
| Pump | Capacity, $m^3/h$, ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power consumption, kW | NPSH, m | Efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| D 2000-100-2 | 2000 (0.55) | 100 | 16.3 (980) | 665 | 6.0 | 82 | 2470 |
| D 2000-100a-2 | 1900 (0.53) | 88 | 16.3 (980) | 577 | 6.0 | 79 | 2470 |
| D 2000-100b-2 | 1800 (0.5) | 80 | 16.3 (980) | 510 | 6.0 | 77 | 2460 |
| D 2500-62-2 | 2500 (0.7) | 62 | 16.3 (980) | 480 | 6 | 88.5 | 2700 |
| | 2000 (0.55) | 34 | 12.2 (730) | 210 | 4 | 88.5 | |
| D 2500-62a-2 | 2300 (0.64) | 52 | 16.3 (980) | 380 | 6 | 86.5 | 2690 |
| | 1900 (0.53) | 29 | 12.2 (730) | 175 | 4 | 86.5 | |
| D 3200-33-2 | 3200 (0.9) | 33 | 16.3 (980) | 320 | 6.5 | 90 | 2700 |
| | 2500 (0.7) | 17 | 12.2 (730) | 130 | 4.0 | 90 | |
| D 3200-33a-2 | 3000 (0.83) | 29 | 16.3 (980) | 270 | 6.5 | 88 | |
| | 2400 (0.67) | 15 | 12.2 (730) | 110 | 4.0 | 88 | |
| D 3200-33b-2 | 2800 (0.78) | 25 | 16.3 (980) | 220 | 6.5 | 86 | |
| | 2300 (0.64) | 13 | 12.2 (730) | 95 | 4.0 | 86 | |
| D 3200-75-2 | 3200 (0.9) | 75 | 16.3 (980) | 740 | 6.5 | 88.5 | 3650 |
| | 2500 (0.7) | 42 | 12.2 (730) | 325 | 4 | 88.5 | |
| D 3200-75a-2 | 3000 (0.83) | 65 | 16.3 (980) | 615 | 6.5 | 86.5 | 3640 |
| | 2300 (0.64) | 35 | 12.2 (730) | 255 | 4 | 86.5 | |
| D 4000-95-2 | 4000 (0.11) | 95 | 16.3 (980) | 1170 | 7.0 | 88.5 | 4660 |
| | 3200 (0.9) | 50 | 12.2 (730) | 495 | 5.0 | | 4650 |
| D 4000-95a-2 | 3700 (0.103) | 82 | 16.3 (980) | 955 | 7.0 | 86.5 | 4650 |
| | 3000 (0.83) | 45 | 12.2 (730) | 425 | 5.0 | | |
| D 6300-27-3 | 6300 (0.175) | 27 | 12.2 (730) | 515 | 7.5 | 90 | 4600 |
| | 5000 (0.14) | 17 | 9.9 (585) | 260 | 5.0 | 90 | |
| D 6300-27-3-1 | 5000 (0.14) | 32 | 12.2 (730) | 485 | 7.5 | 90 | 4600 |
| | 4000 (0.11) | 20 | 9.9 (585) | 240 | 5.0 | 90 | |
| D 6300-27a-3 | 5800 (0.161) | 24 | 12.2 (730) | 430 | 7.5 | 88 | 4600 |
| | 4620 (0.128) | 15 | 9.9 (585) | 215 | 5.0 | 88 | |
| D 6300-27b-3 | 5450 (0.151) | 22 | 12.2 (730) | 380 | 7.5 | 88 | 4600 |
| | 4350 (0.118) | 14 | 9.9 (585) | 195 | 5.0 | 88 | |
| D 6300-80-2 | 6300 (0.175) | 80 | 12.2 (730) | 1550 | 6.5 | 88.5 | 8170 |
| | 5000 (0.14) | 50 | 9.9 (585) | 770 | 5.5 | 88.5 | |
| D 6300-80a-2 | 5900 (0.164) | 70 | 12.2 (730) | 1300 | 6.5 | 86.5 | 8160 |
| | 4700 (0.131) | 45 | 9.9 (585) | 665 | 5.5 | 86.5 | |
| D 6300-80b-2 | 5500 (0.153) | 60 | 12.2 (730) | 1060 | 6.5 | 84.5 | 8150 |
| | 4000 (0.122) | 38 | 9.9 (585) | 540 | 5.5 | 84.5 | |
| D 12500-10 | 12500 | 10 | 6.2 (372) | 426 | 6.0 | 82.5 | 14830 |
| D 12500-24 | 12500 | 24 | 8.25 (495) | 929 | 7.0 | 89 | 14830 |

## PERFORMANCE CURVE

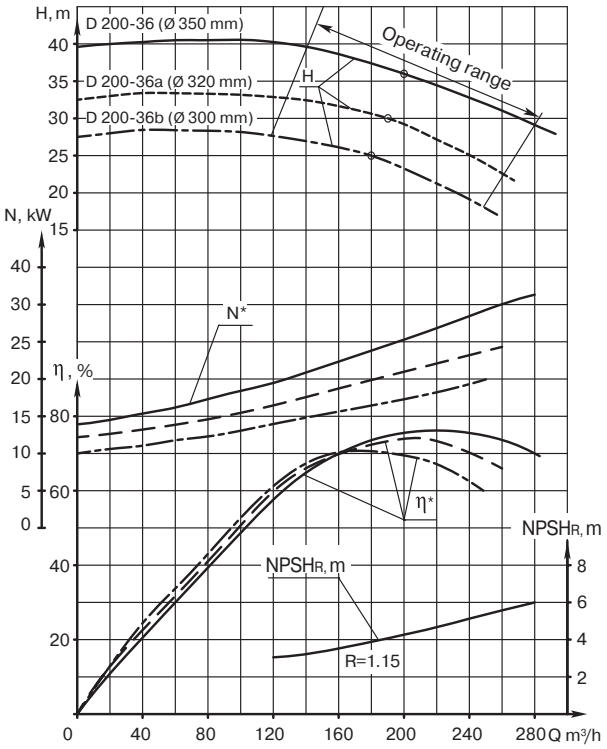
**D 160–112** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³



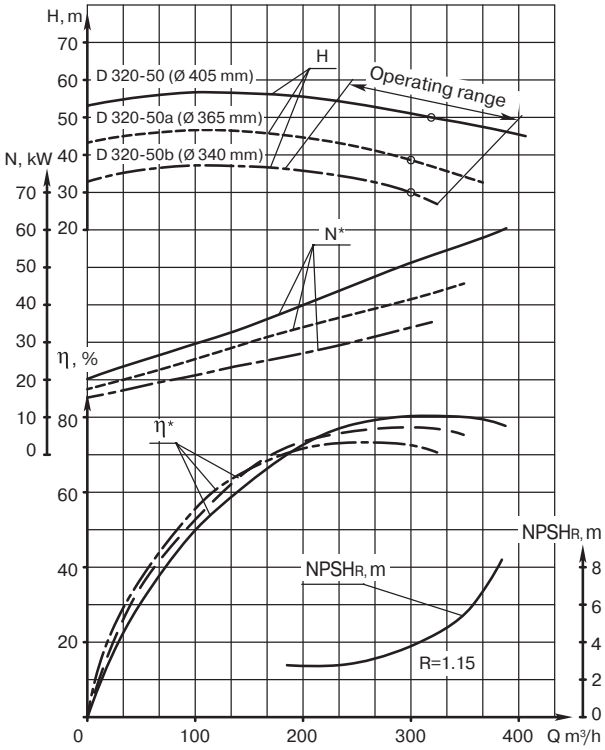

**D 160–112** * – pump data
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³




**D 200–36** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

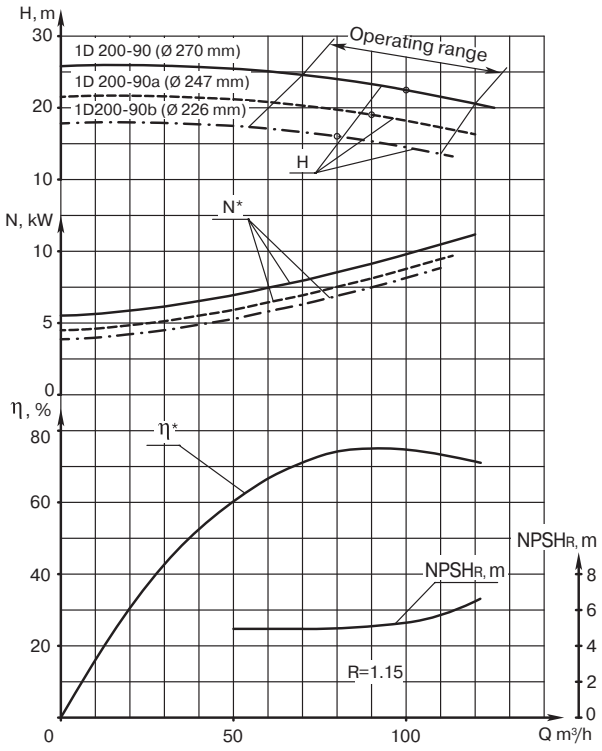



**D 320–50** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

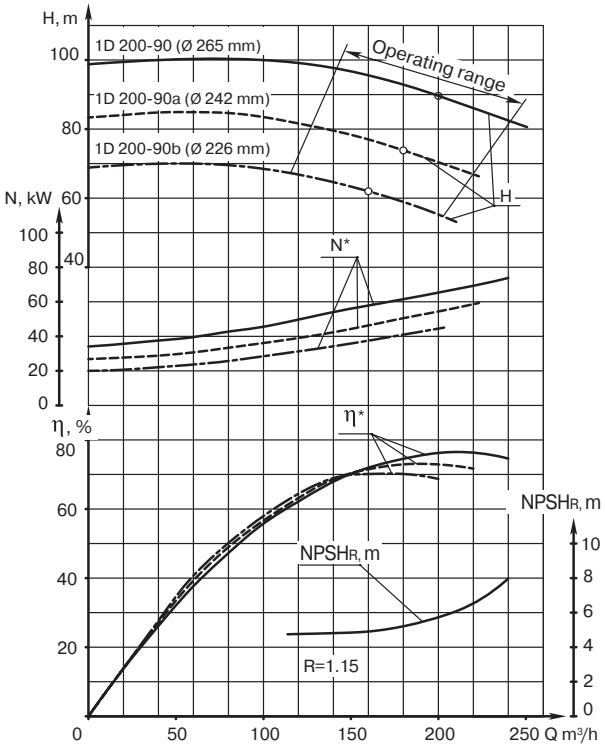


## PERFORMANCE CURVE

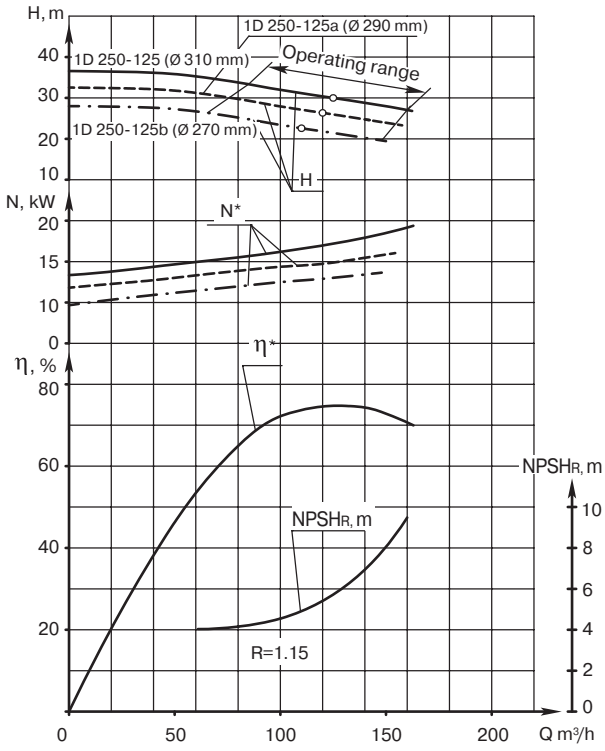
**1D 200–90** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³



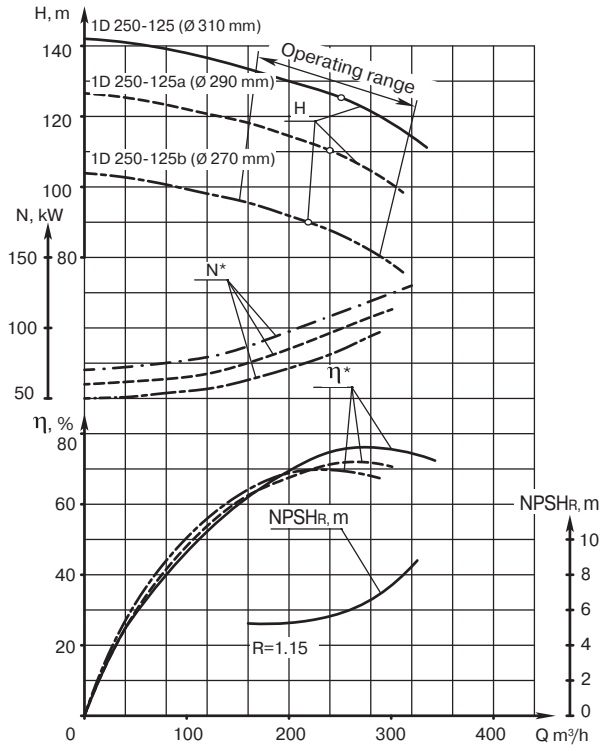

**1D 200–90** * – pump data
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³




**1D 250–125** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

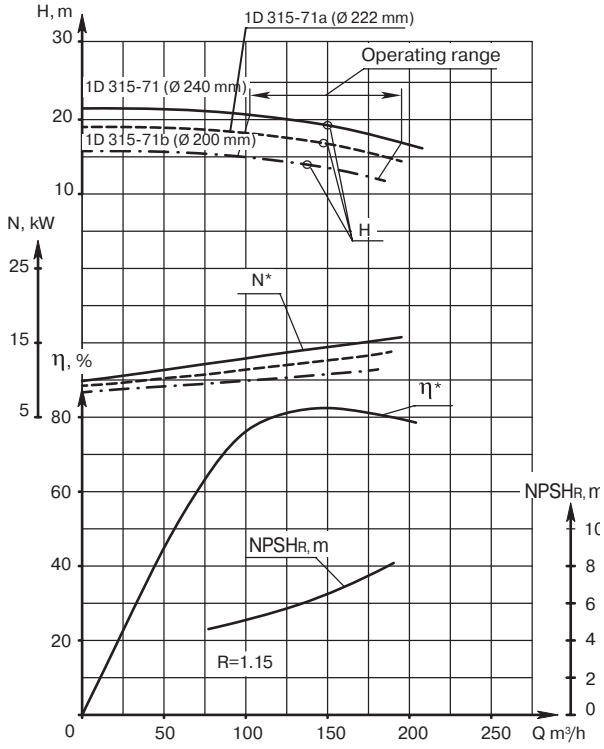



**1D 250–125** * – pump data
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³

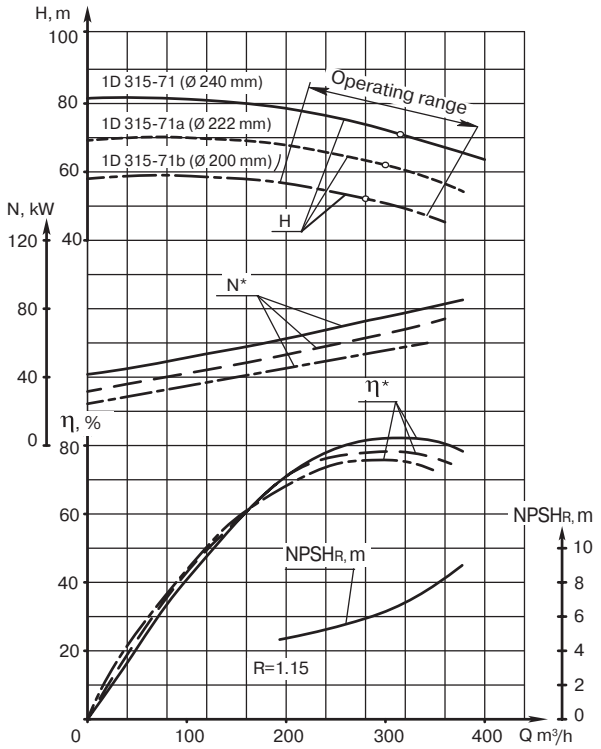


## PERFORMANCE CURVE

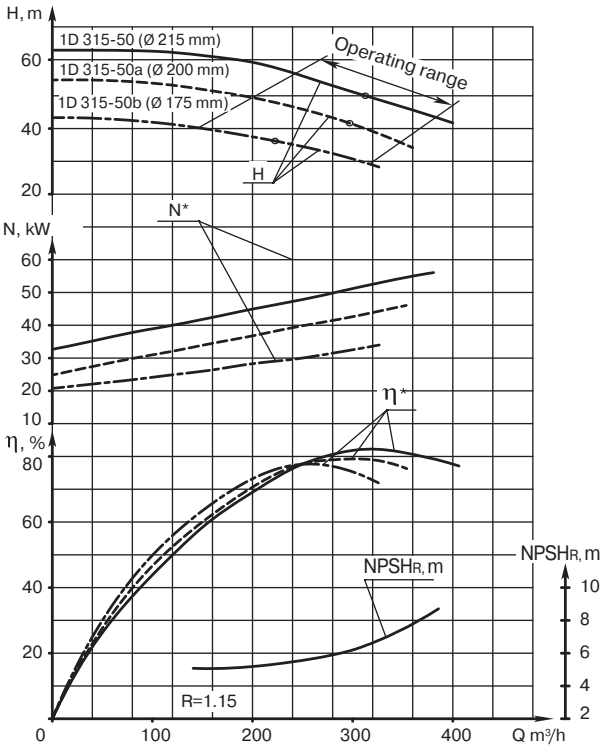
**1D 315–71** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³



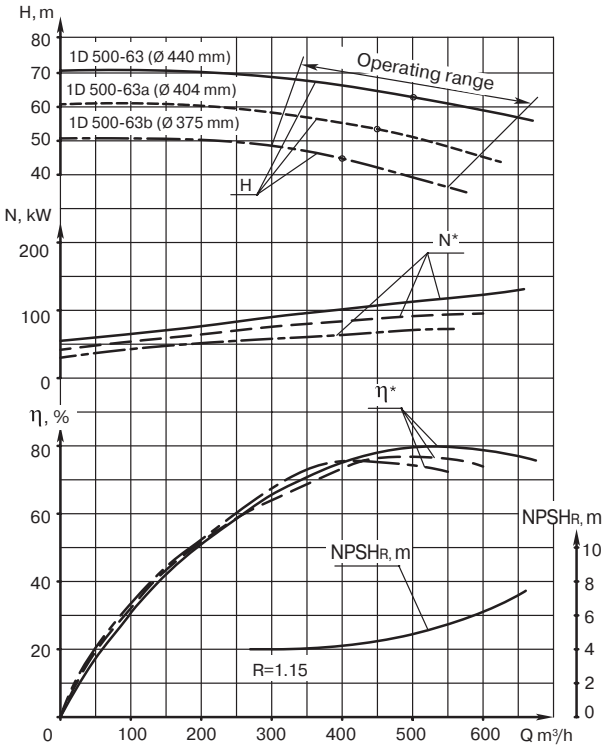

**1D 315–71** * – pump data
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³




**1D 315–50** * – pump data
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³

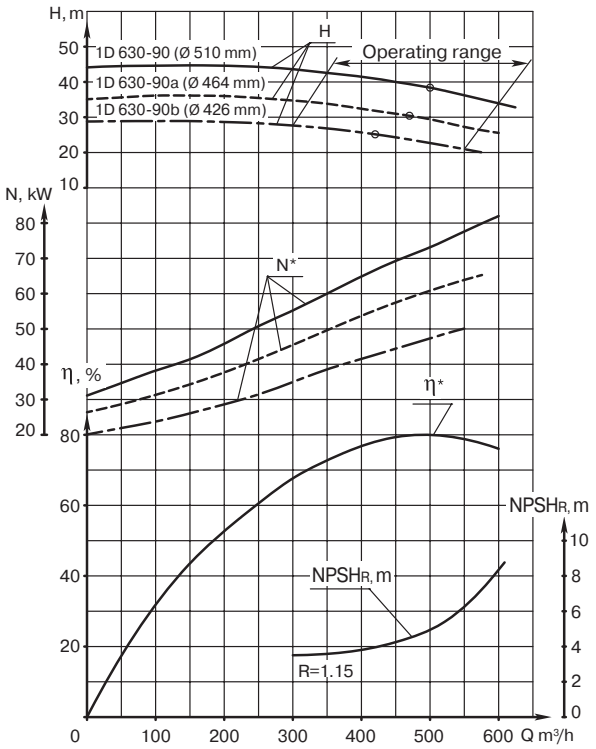



**1D 500–63** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

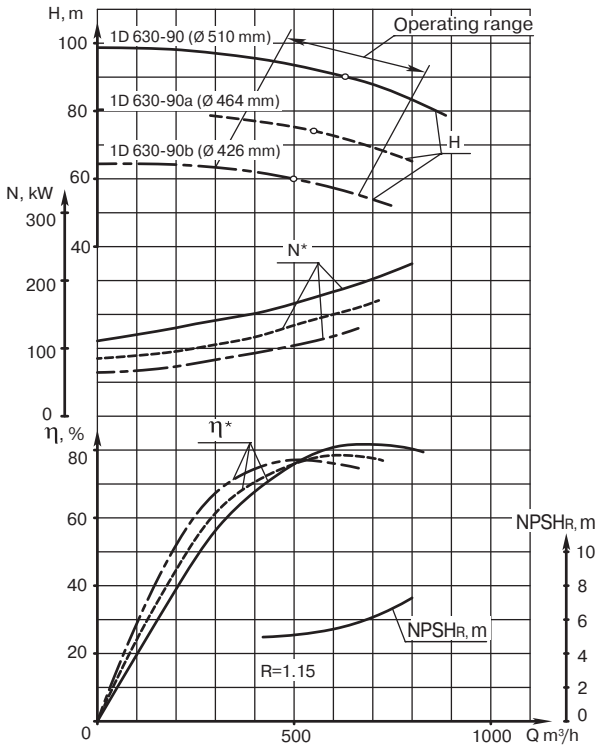


## PERFORMANCE CURVE

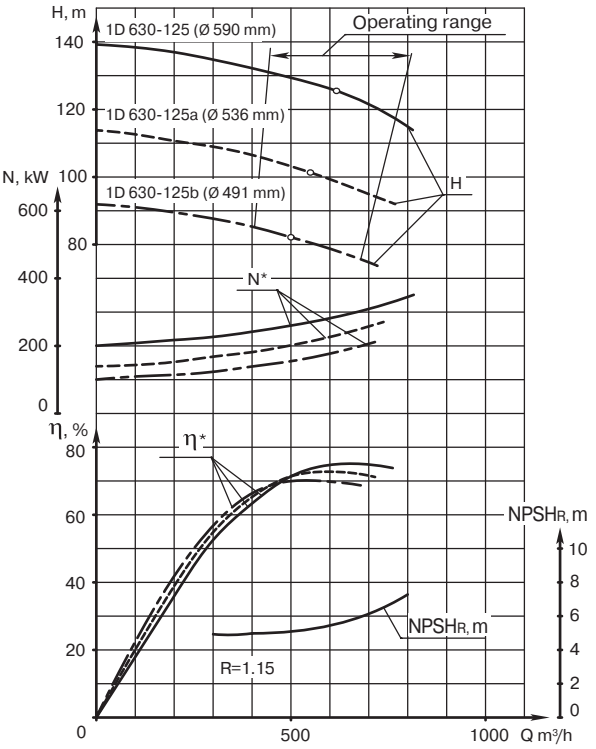
**1D 630–90** * – pump data
rotation speed 16.3 $c^{-1}$ (980 rpm)
liquid – water (20 °C), density 1000 kg/m³



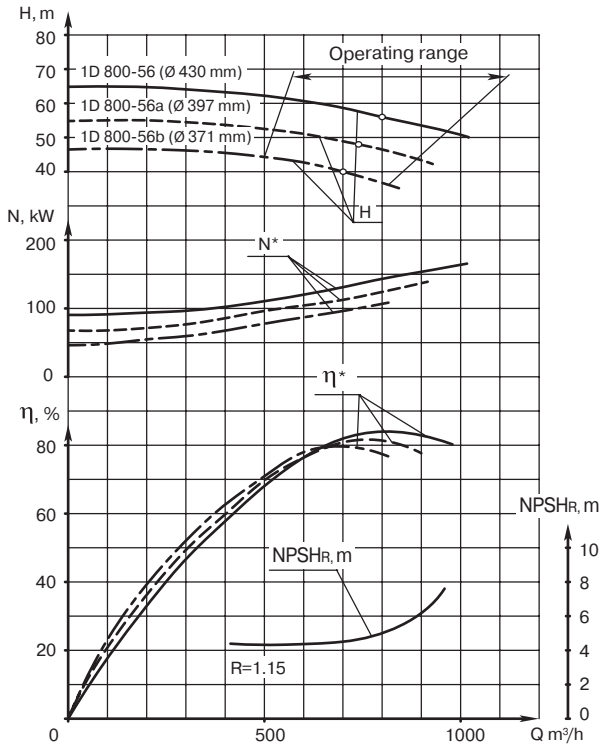

**1D 630–90** * – pump data
rotation speed 24.2 $c^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³




**1D 630–125** * – pump data
rotation speed 24.2 $c^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

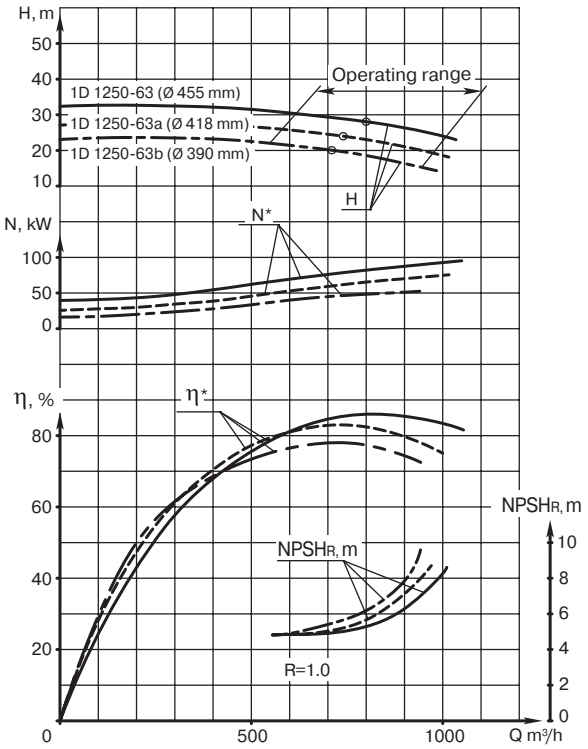



**1D 800–56** * – pump data
rotation speed 24.2 $c^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³

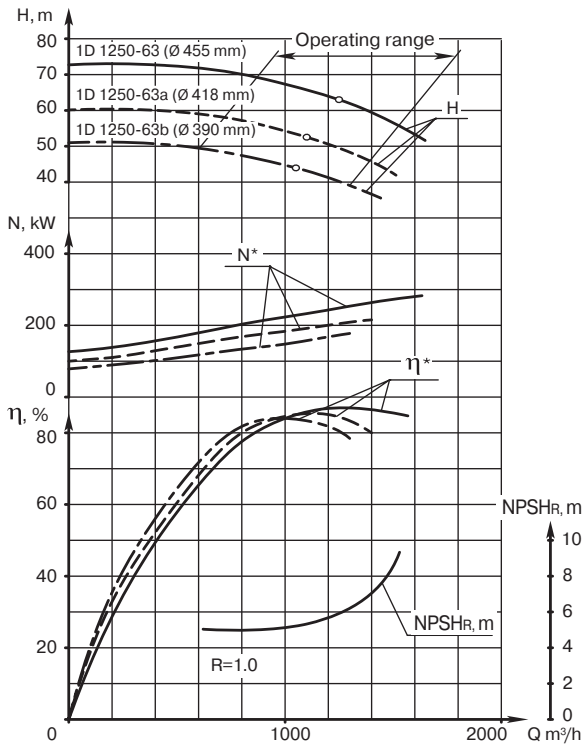


## PERFORMANCE CURVE

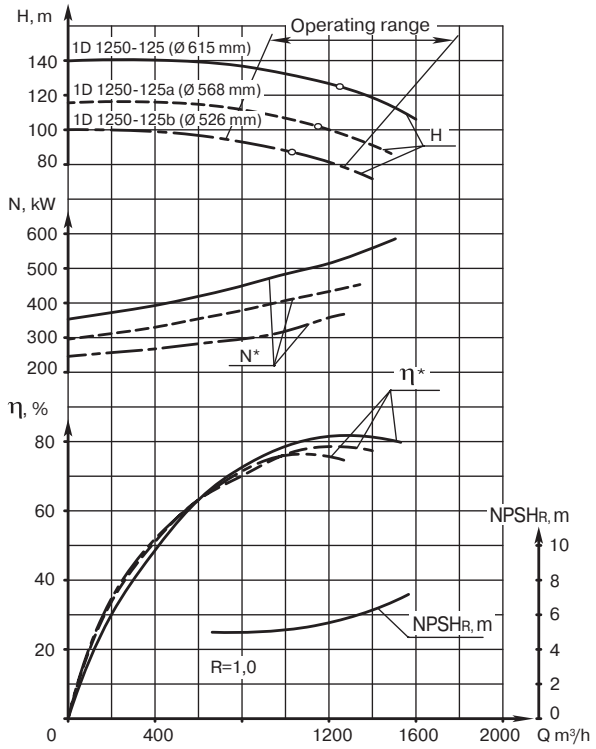
**1D 1250–63** * – pump data
rotation speed 16.3 $s^{-1}$ (980 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**1D 1250–63** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

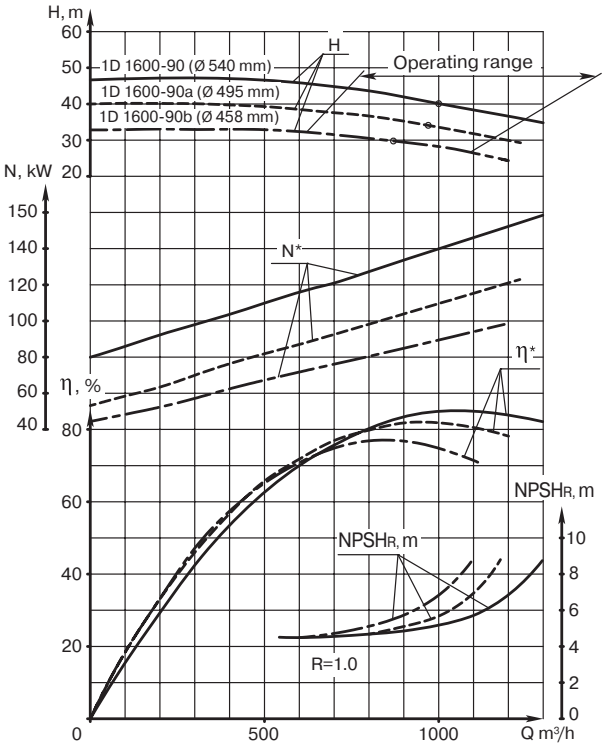



**1D 1250–125** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

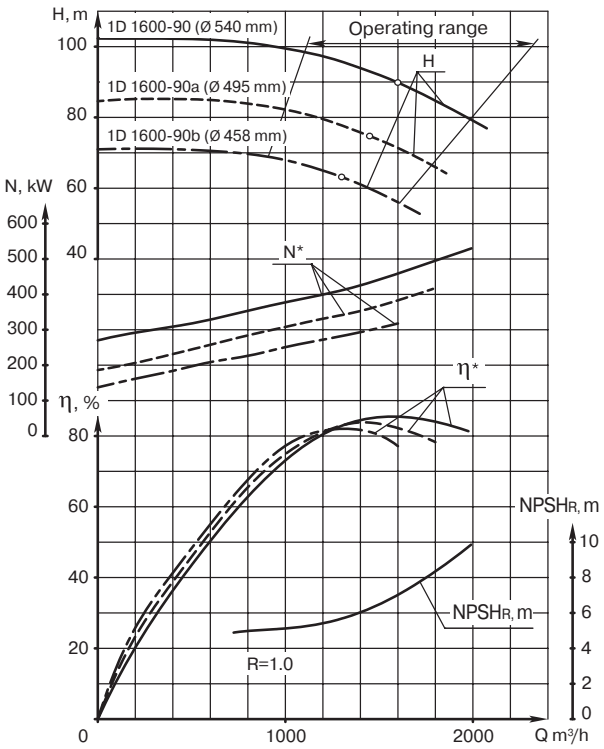


## PERFORMANCE CURVE

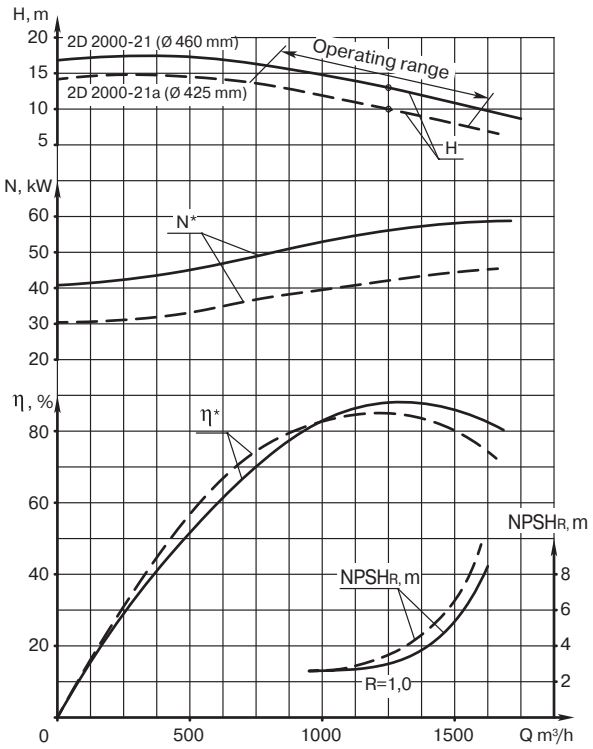
**1D 1600–90** * – pump data
rotation speed 16.3 $s^{-1}$ (980 rpm)
liquid – water (20 °C), density 1000 kg/m³



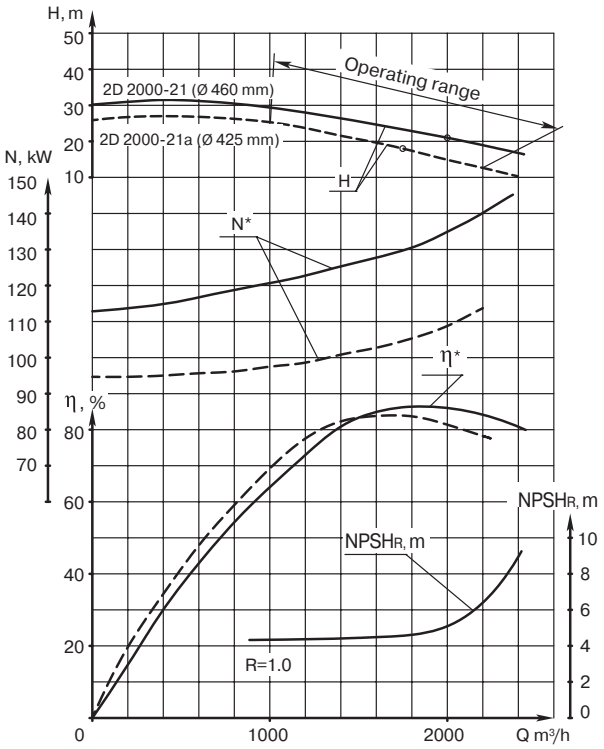

**1D 1600–90** * – pump data
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³



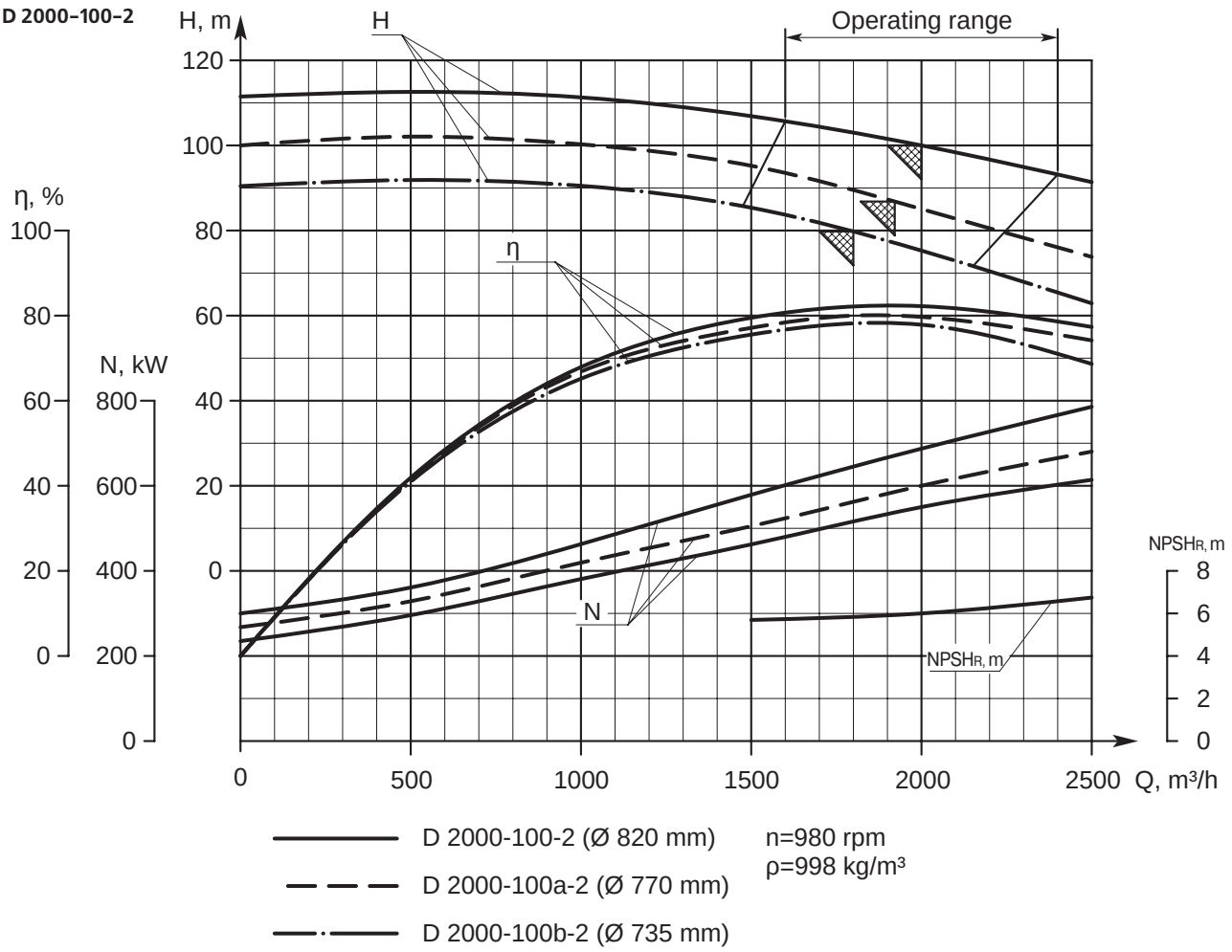

**2D 2000–21** * – pump data
rotation speed 12.2 $s^{-1}$ (730 rpm)
liquid – water (20 °C), density 1000 kg/m³




**2D 2000–21** * – pump data
rotation speed 16.3 $s^{-1}$ (980 rpm)
liquid – water (20 °C), density 1000 kg/m³

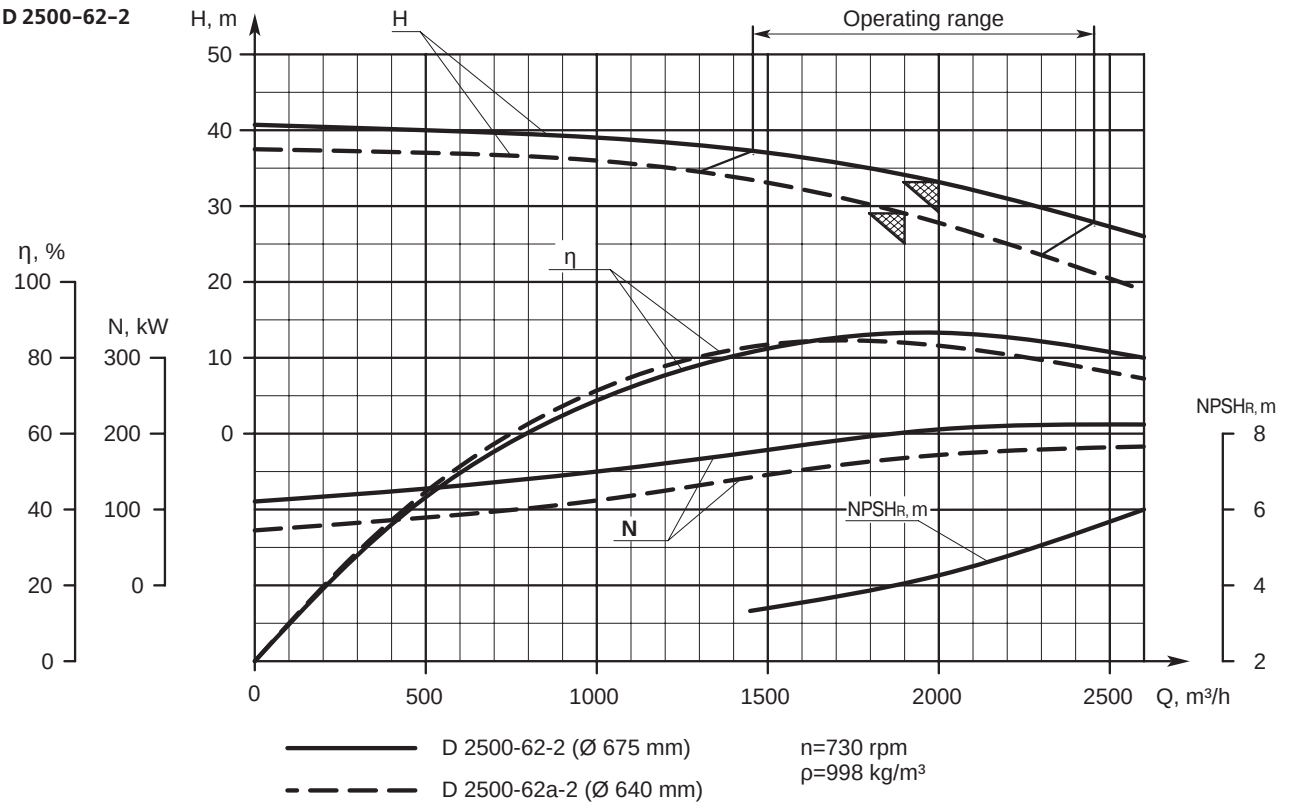


## PERFORMANCE CURVE

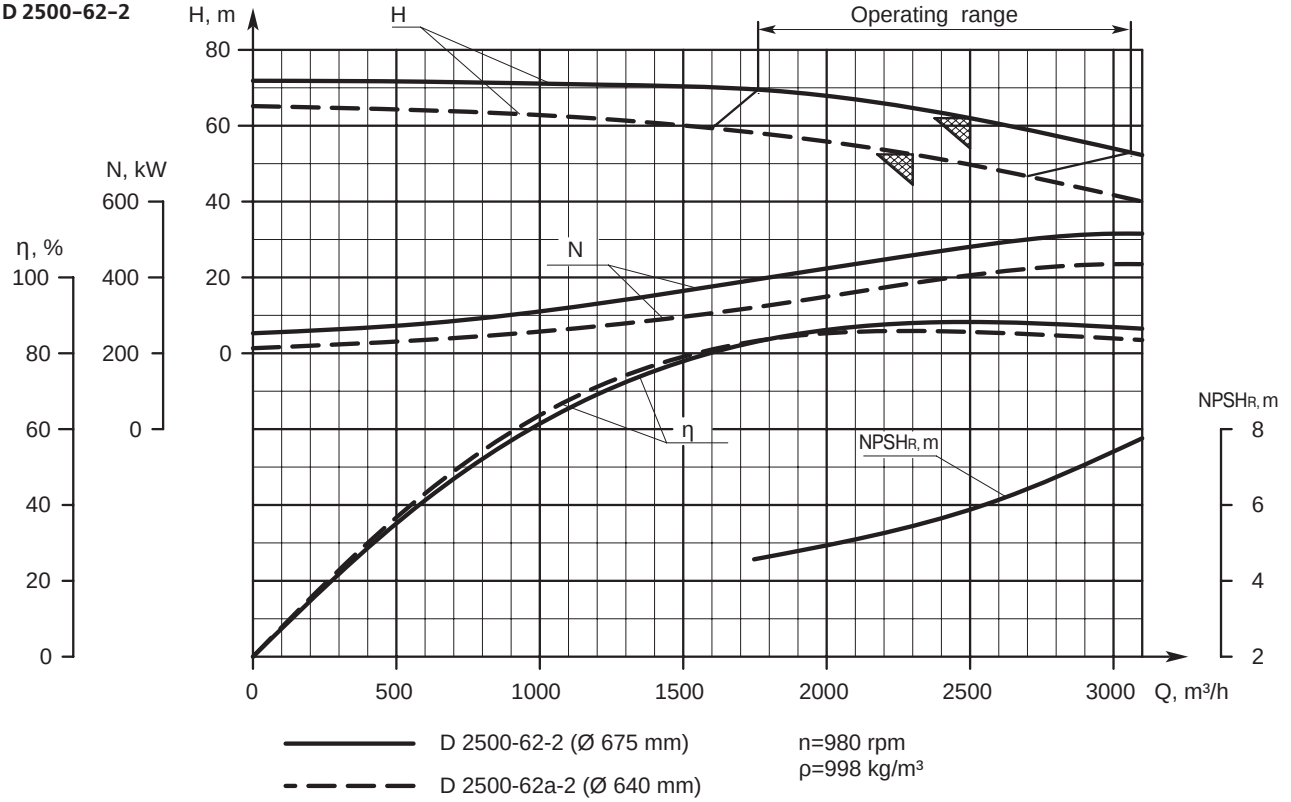


## PERFORMANCE CURVE

**D 2500-62-2**

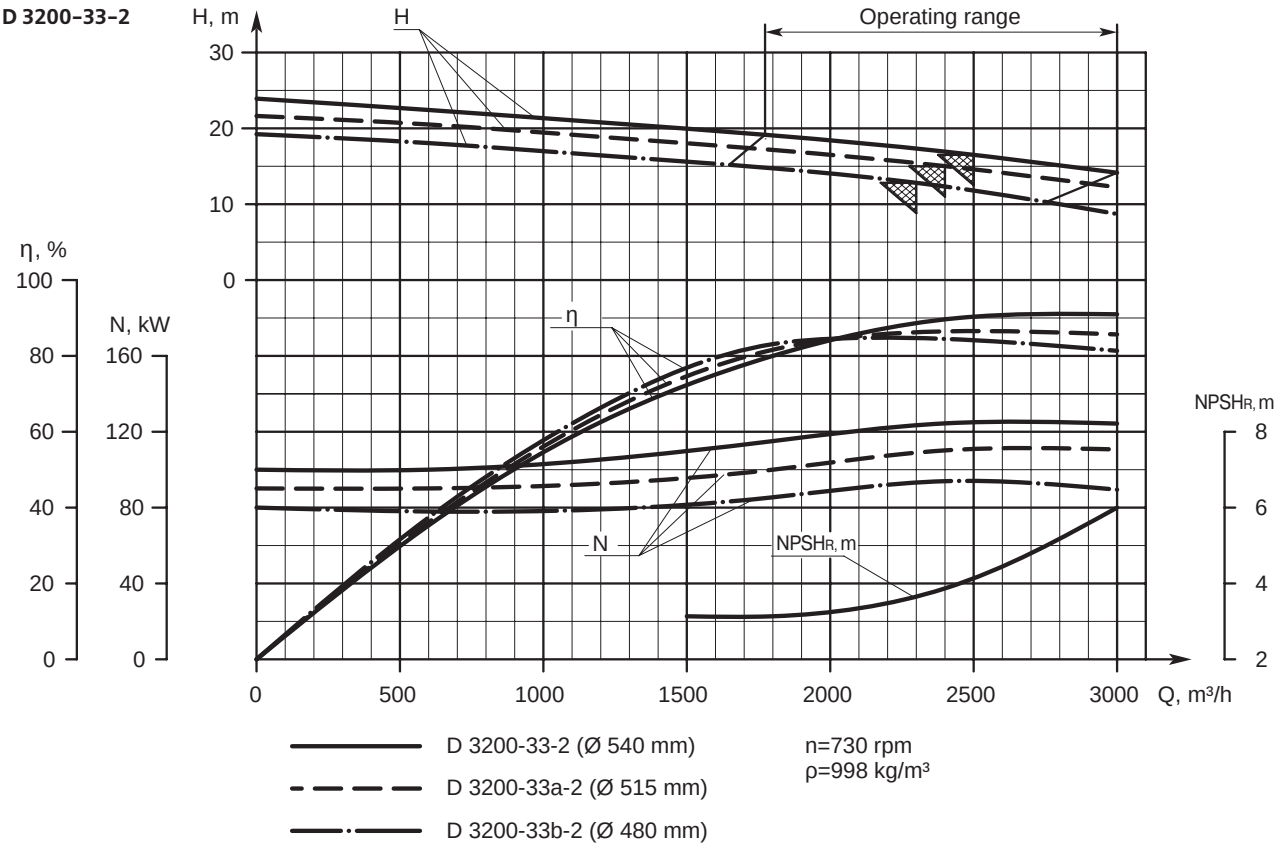



**D 2500-62-2**

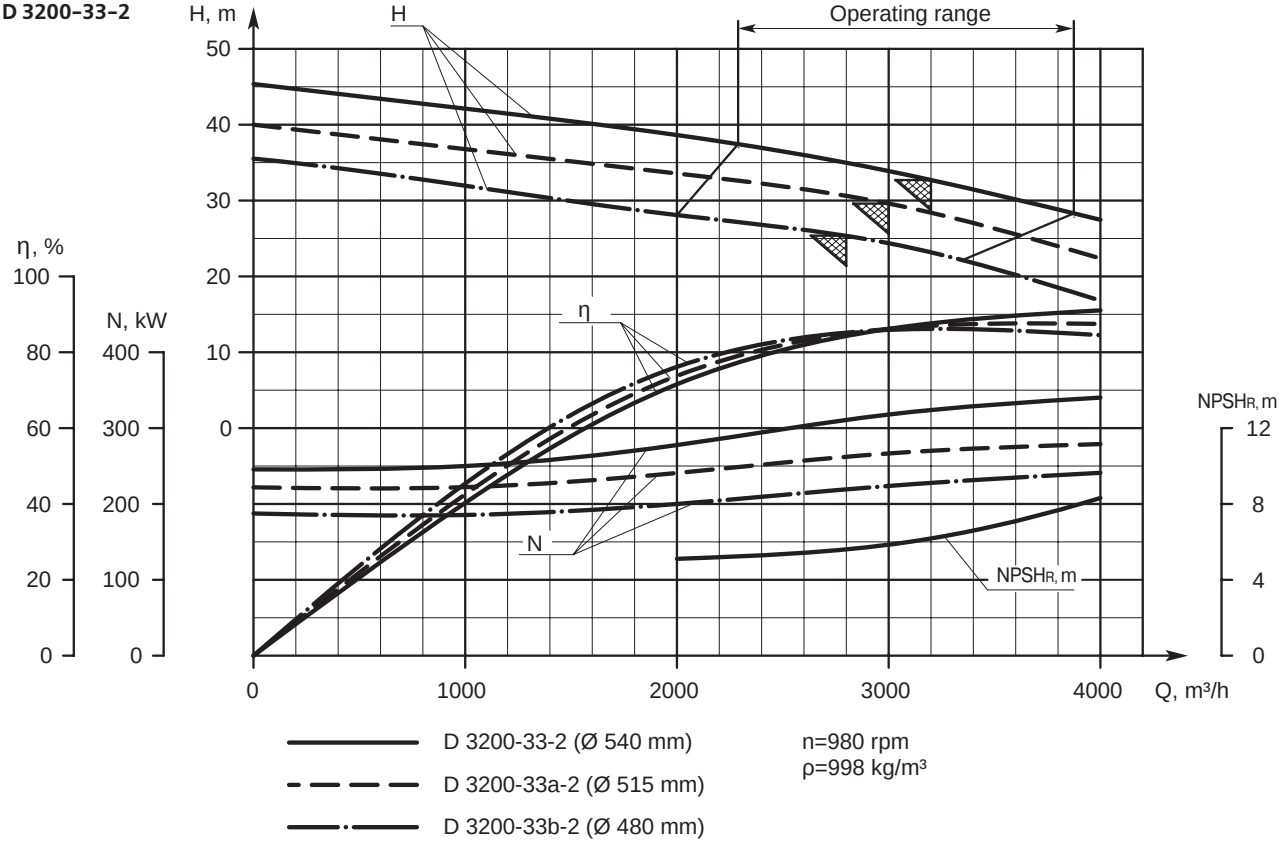


## PERFORMANCE CURVE

**D 3200–33–2**

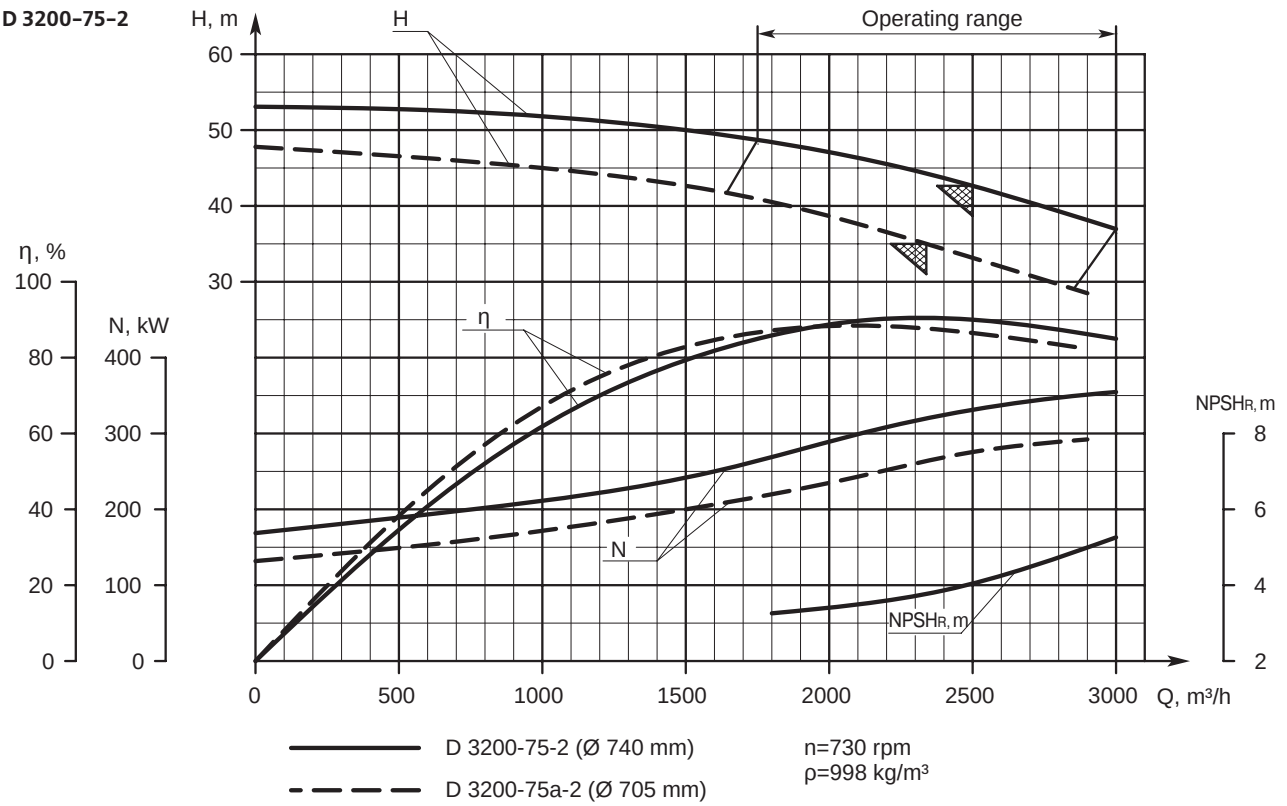



**D 3200–33–2**

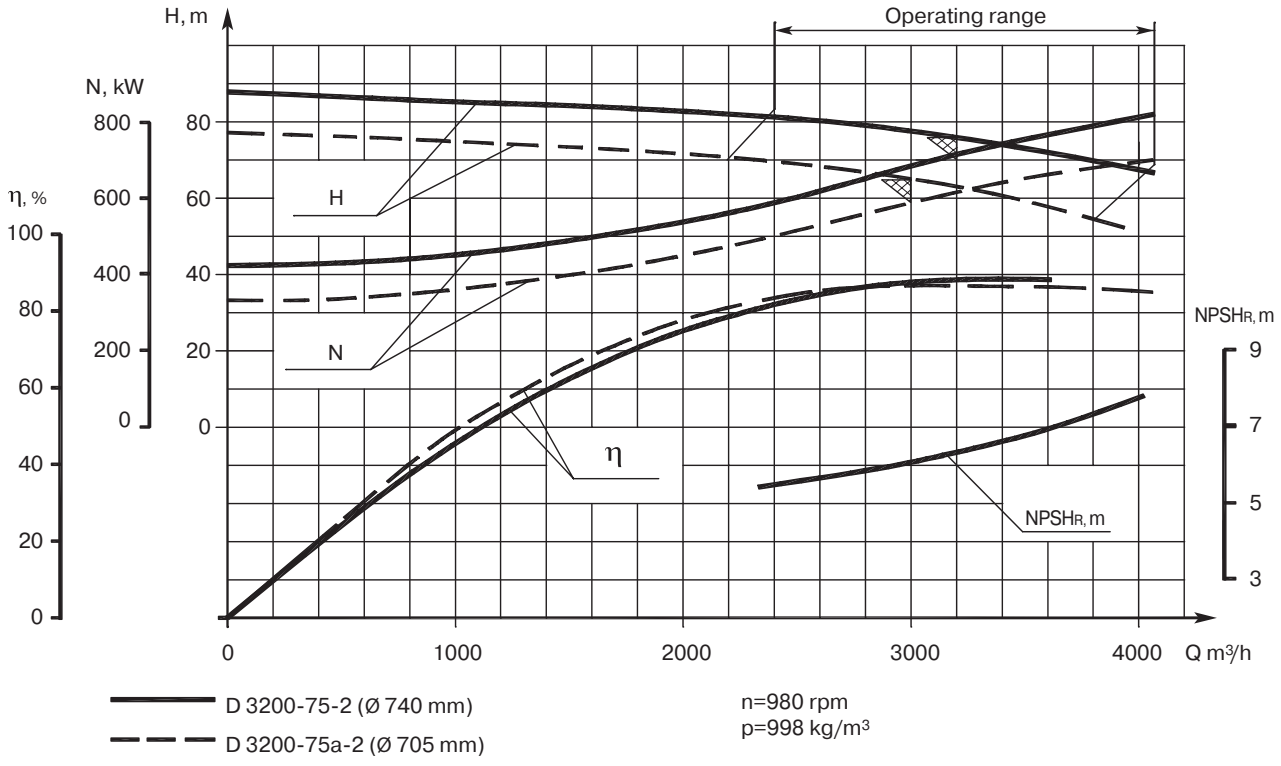


## PERFORMANCE CURVE

**D 3200–75–2**

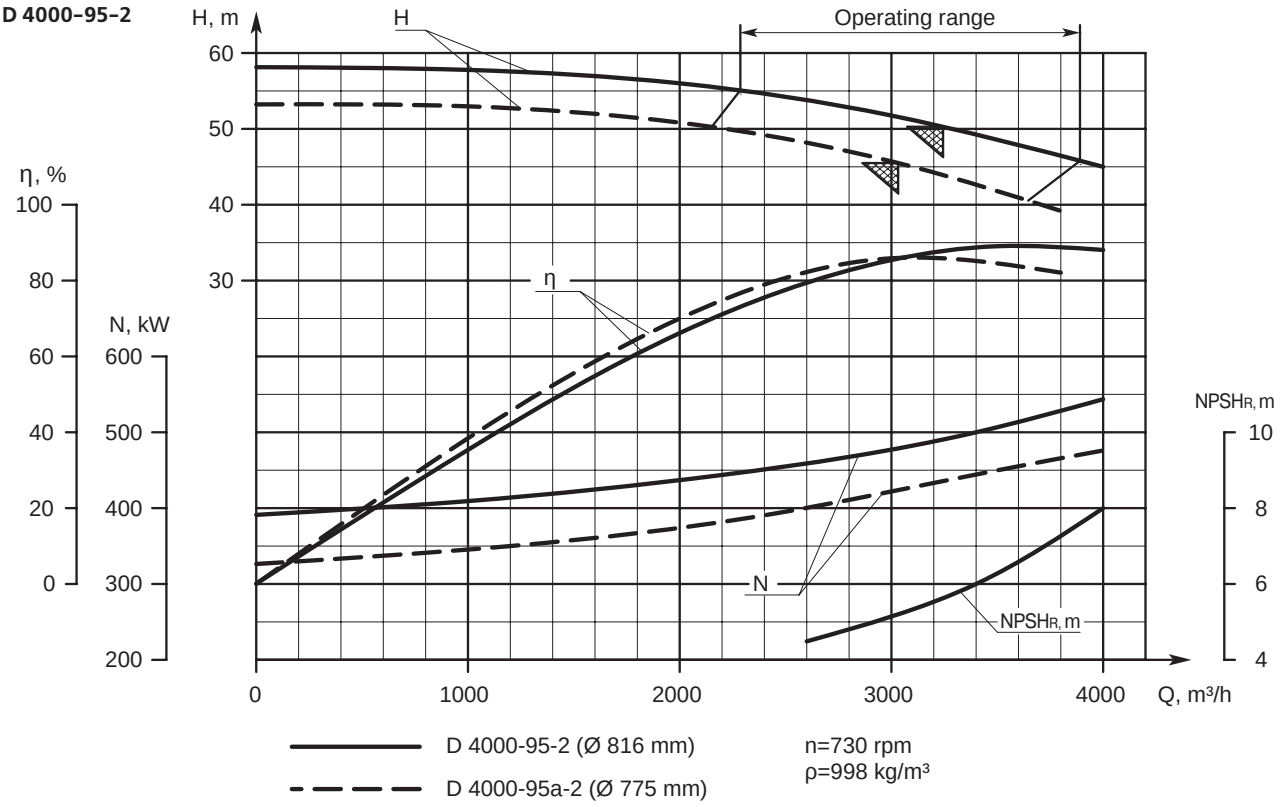



**D 3200–75–2**

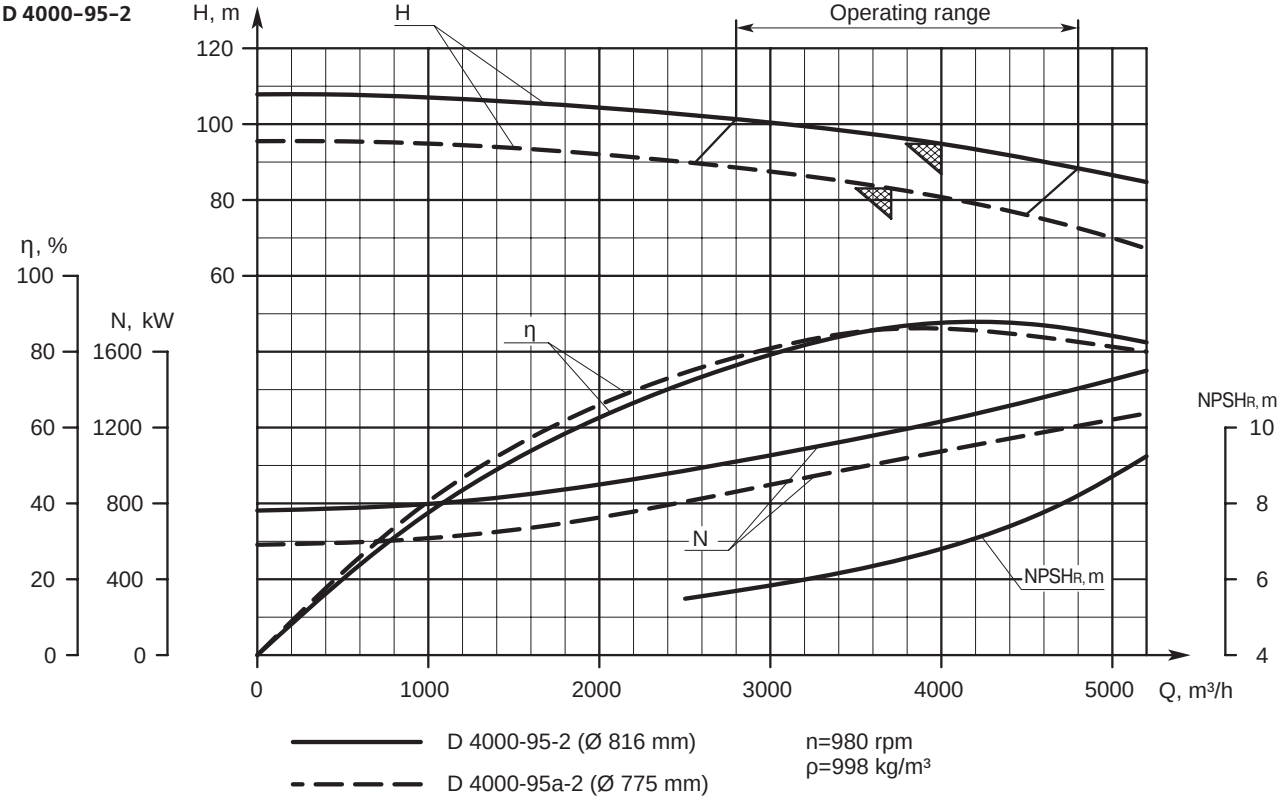


## PERFORMANCE CURVE

**D 4000–95–2**

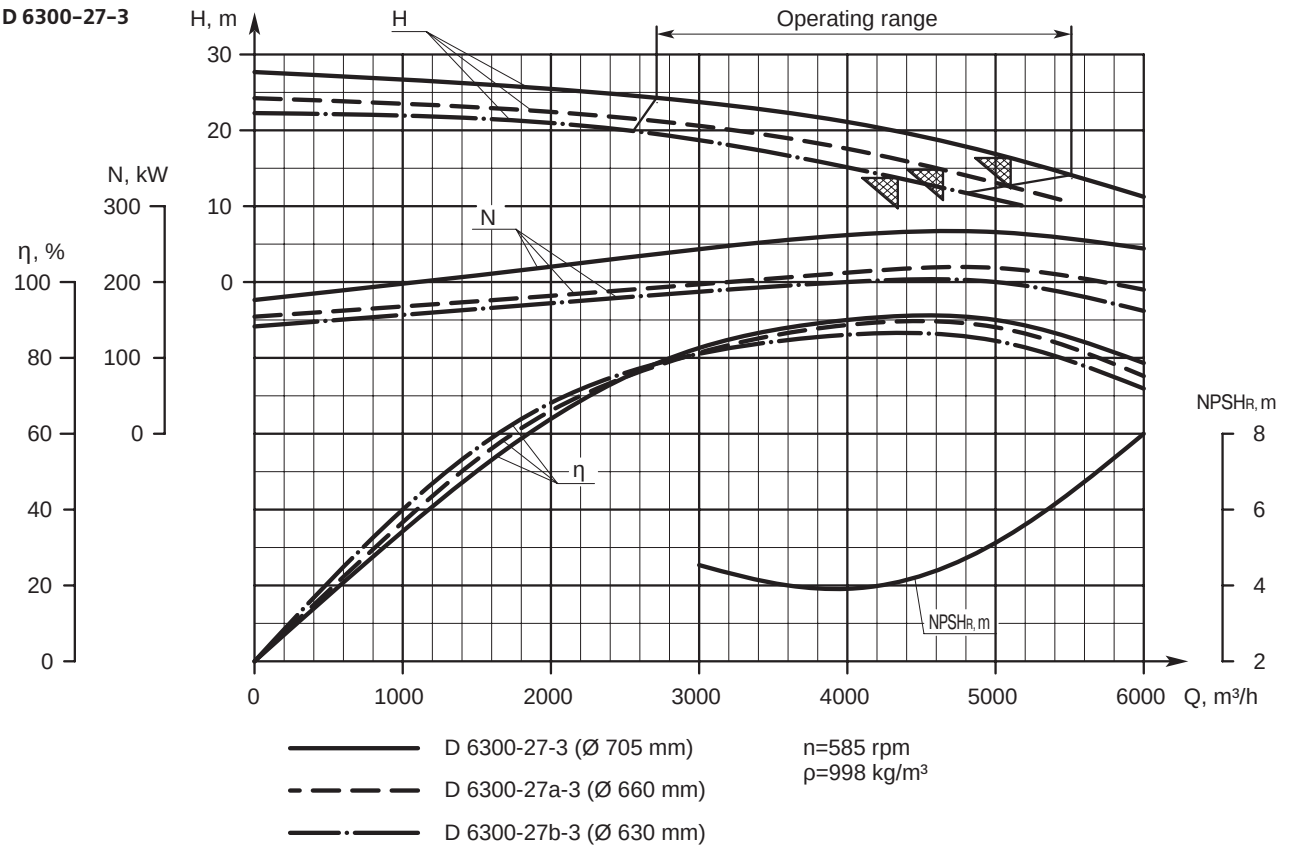



**D 4000–95–2**

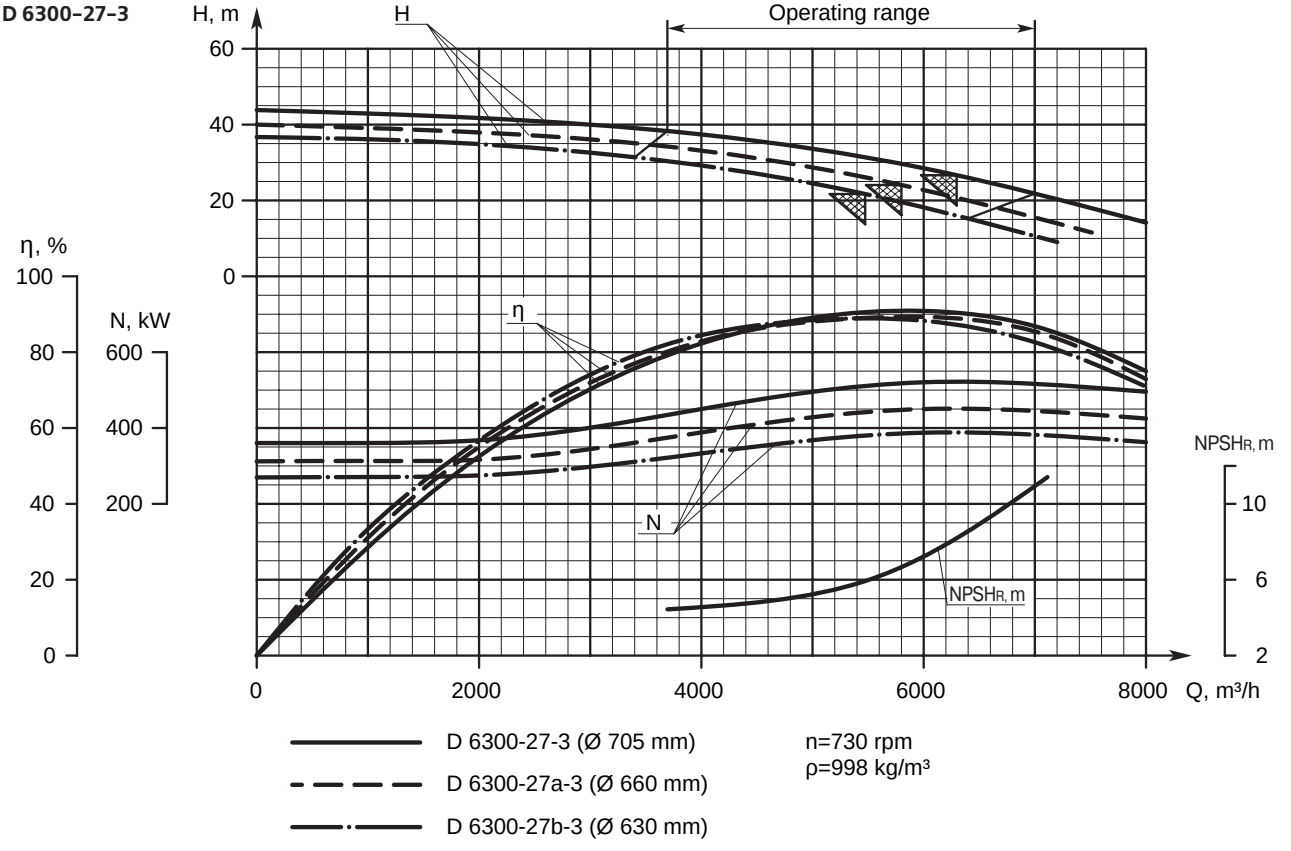


## PERFORMANCE CURVE

**D 6300–27–3**

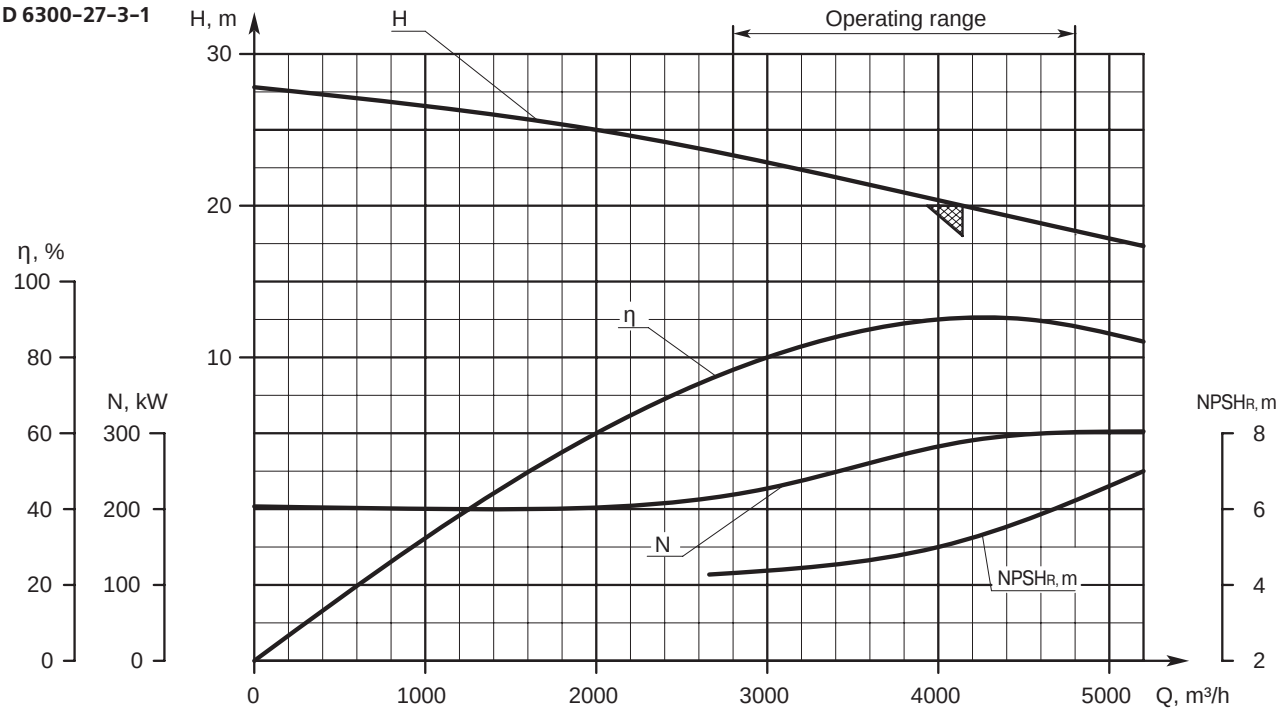



**D 6300–27–3**



## PERFORMANCE CURVE

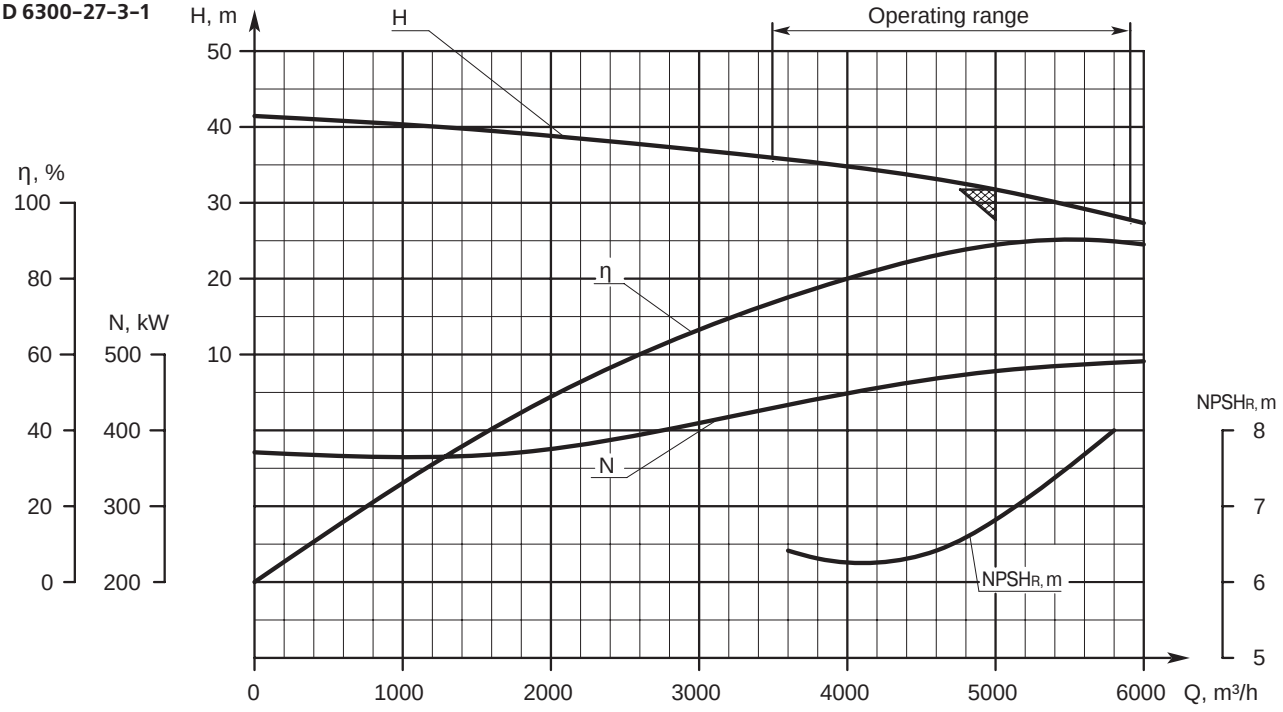
**D 6300-27-3-1**




$D_2$ = 700 mm

n=585 rpm
ρ=998 kg/m³

**D 6300-27-3-1**

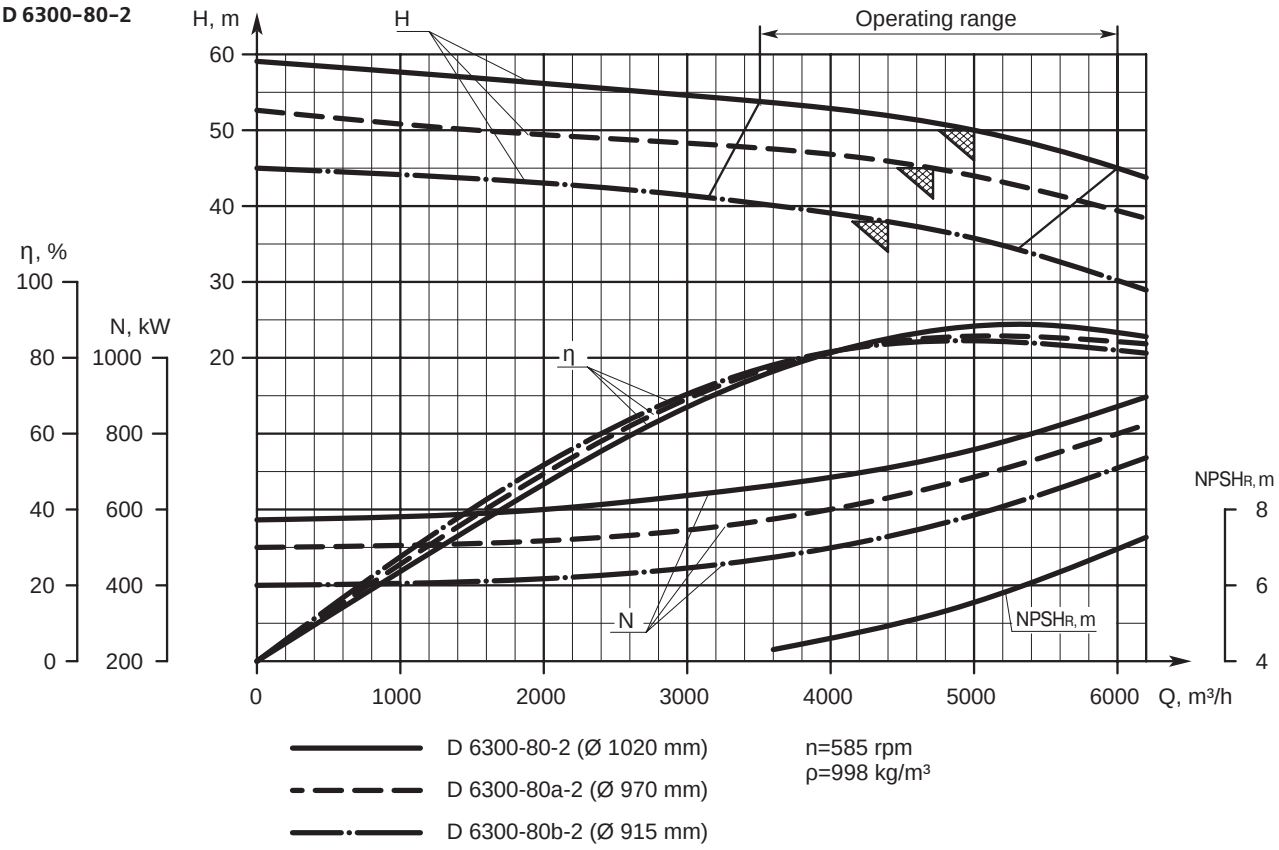



$D_2$ = 700 mm

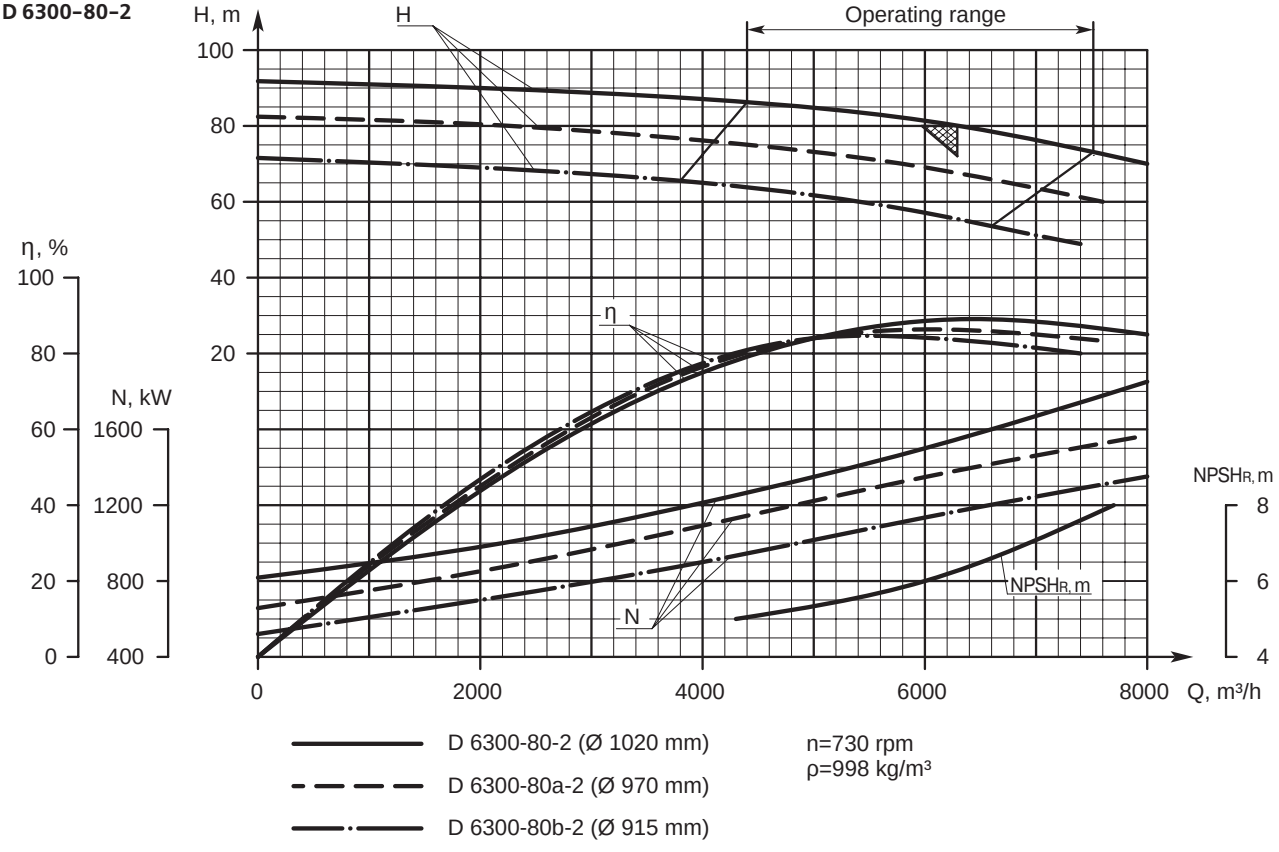
n=730 rpm
ρ=998 kg/m³

## PERFORMANCE CURVE

**D 6300-80-2**

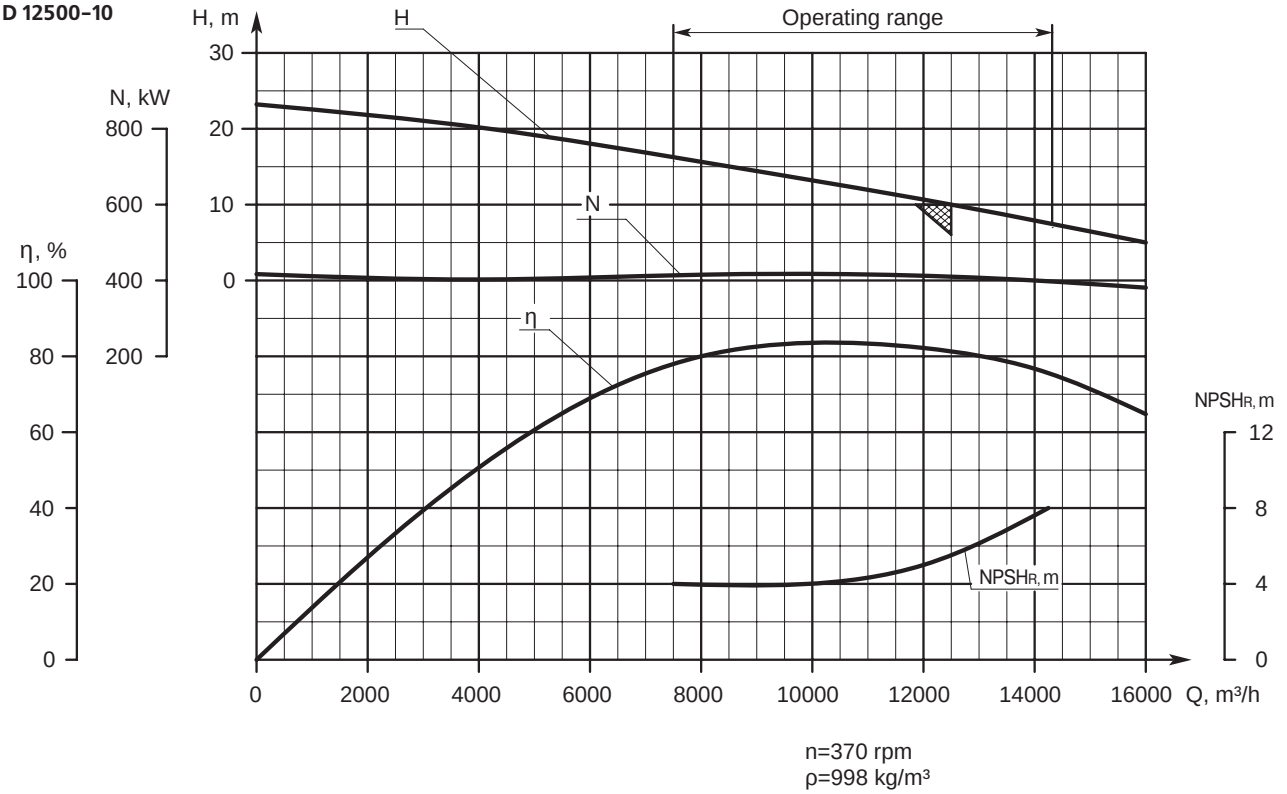



**D 6300-80-2**



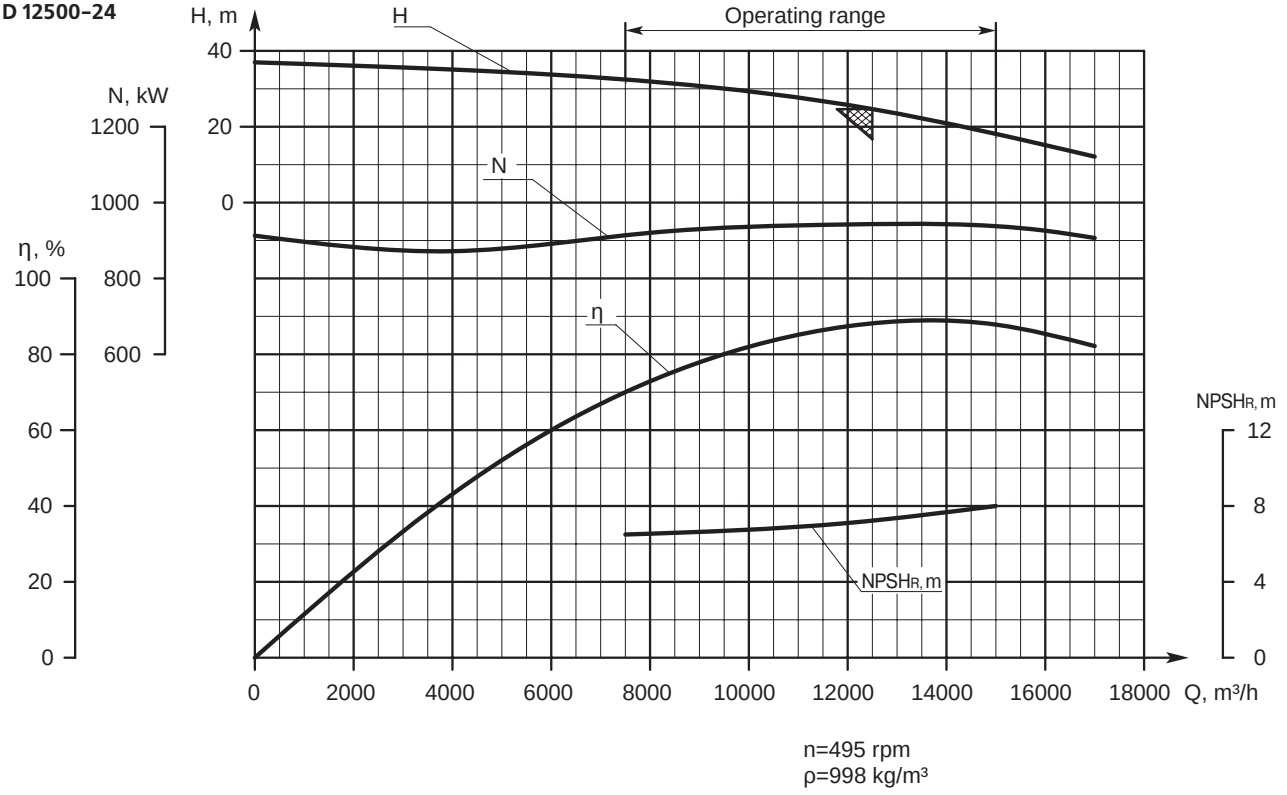
## PERFORMANCE CURVE

**D 12500–10**



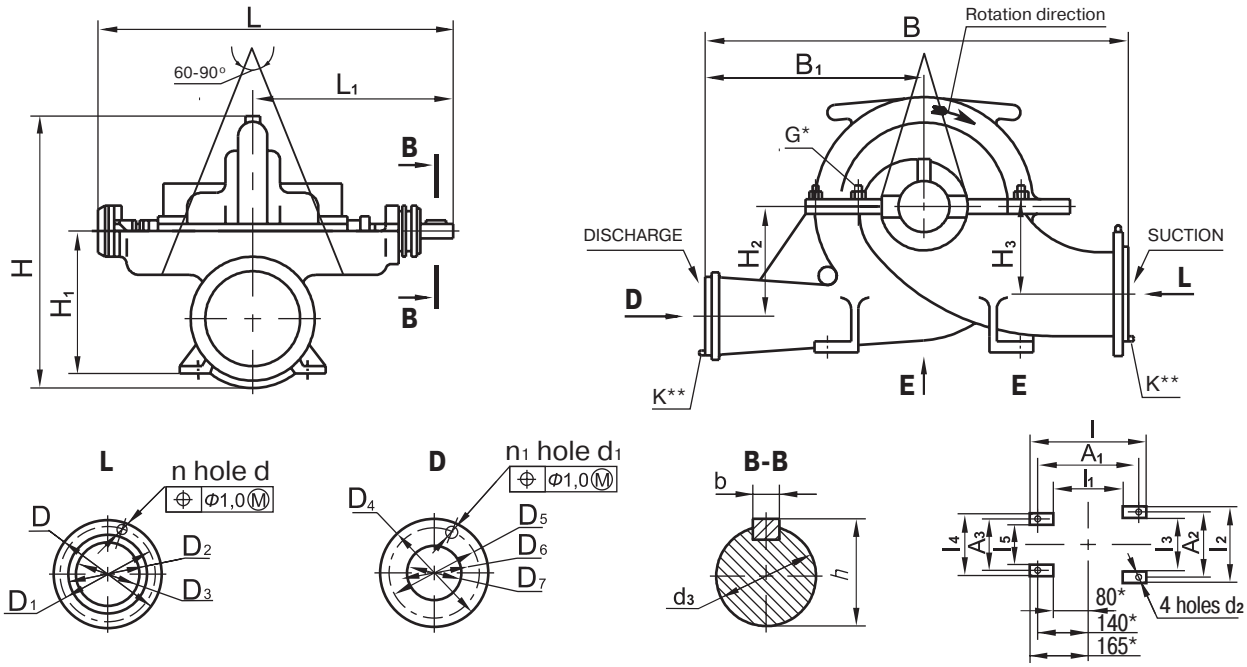

n=370 rpm
ρ=998 kg/m³

**D 12500–24**




n=495 rpm
ρ=998 kg/m³

## OVERALL DIMENSIONS




*Dimensions for pumps 1D 200-90, 1D 250-125, 1D 315-50 and 1D 315-74 G* — Guarantee sealing. K** — Conservation sealing

| Pump | Dimensions, mm | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ | B | $B_1$ | H | $H_1$ | $H_2$ | $H_3$ |
| D 160-112 | 790 | 450 | 450 | 210 | 340 | 160 | 340 | 160 | 640 | 300 | 555 | 300 | 181 | 146 |
| D 200-36 | 830 | 458 | 510 | 300 | 340 | 160 | 340 | 160 | 800 | 373 | 620 | 350 | 224 | 162 |
| D 320-50 | 830 | 458 | 600 | 350 | 400 | 200 | 400 | 200 | 966 | 474 | 700 | 400 | 260 | 188 |
| 1D 200-90 | 766 | 420 | 355 | 165 | 370 | 220 | 250 | 100 | 530 | 250 | 495 | 260 | 170 | 170 |
| 1D 250-125 | 766 | 420 | 355 | 165 | 370 | 220 | 250 | 100 | 550 | 250 | 515 | 260 | 190 | 170 |
| 1D 315-50 | 766 | 420 | 355 | 165 | 370 | 220 | 250 | 100 | 600 | 300 | 520 | 290 | 170 | 170 |
| 1D 315-71 | 766 | 420 | 355 | 165 | 370 | 220 | 250 | 100 | 600 | 300 | 520 | 290 | 170 | 170 |
| 1D 500-63 | 1145 | 645 | 500 | 260 | 590 | 390 | 360 | 160 | 770 | 350 | 714 | 390 | 280 | 220 |
| 1D 630-90 | 1145 | 645 | 590 | 360 | 590 | 390 | 360 | 160 | 1000 | 500 | 845 | 440 | 330 | 270 |
| 1D 630-125 | 1145 | 645 | 590 | 360 | 590 | 390 | 360 | 160 | 900 | 400 | 900 | 470 | 370 | 300 |
| 1D 800-56 | 1145 | 645 | 590 | 360 | 590 | 390 | 360 | 160 | 880 | 400 | 835 | 440 | 300 | 240 |
| 1D 1250-63 | 1185 | 665 | 590 | 360 | 590 | 390 | 360 | 160 | 950 | 450 | 897 | 500 | 340 | 300 |
| 1D 1250-125 | 1421 | 782 | 710 | 400 | 710 | 450 | 440 | 180 | 1050 | 450 | 1005 | 530 | 400 | 300 |
| 1D 1600-90 | 1421 | 782 | 710 | 400 | 710 | 450 | 440 | 180 | 1200 | 600 | 1030 | 530 | 380 | 300 |
| 2D 630-90 | 1278 | 695 | 590 | 350 | 590 | 390 | 360 | 160 | 780 | 390 | 650 | 400 | 220 | 220 |
| 2D 630-125 | 1278 | 695 | 590 | 350 | 590 | 390 | 360 | 160 | 800 | 400 | 670 | 380 | 220 | 220 |
| 2D 2000-21 | 1590 | 885 | 850 | 450 | 940 | 600 | 630 | 290 | 1200 | 500 | 1160 | 710 | 400 | 400 |

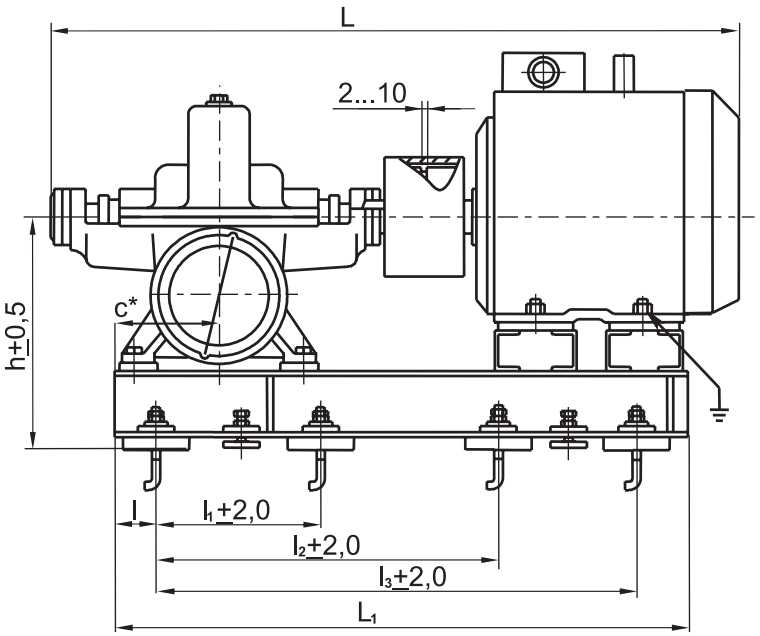
| Pump | Dimensions, mm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | $A_3$ | h | D | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ |
| D 160-112 | 330±1.6Ⓜ | 260±1.6Ⓜ | 260±1.6Ⓜ | $39_{-0.29}$ | 280 | 240 | 212 | 150 | 215 | 180 | 158 | 100 |
| D 200-36 | 430±1.1Ⓜ | 260±1.1Ⓜ | 260±1.1Ⓜ | $35_{-0.21}$ | 260 | 225 | 202 | 150 | 235 | 200 | 178 | 125 |

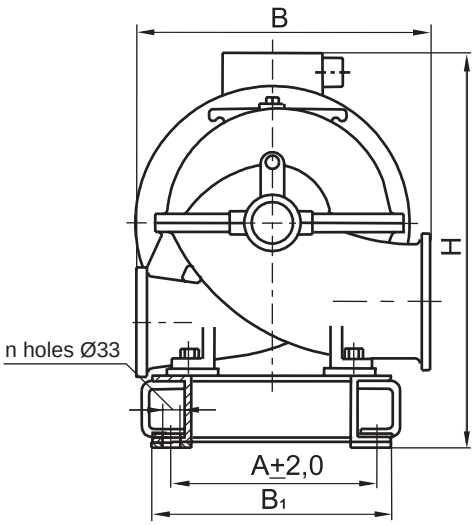
## OVERALL DIMENSIONS

| Pump | Dimensions, mm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | $A_3$ | h | D | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ |
| D 320-50 | 510±1.1Ⓜ | 320±1.1Ⓜ | 320±1.1Ⓜ | 35$_{-0.21}$ | 315 | 280 | 258 | 200 | 260 | 225 | 202 | 150 |
| 1D 200-90 | 270±1.1Ⓜ | 320±1.1Ⓜ | 200±1.1Ⓜ | 39$_{-0.29}$ | 260 | 225 | 202 | 150 | 215 | 180 | 158 | 100 |
| 1D 250-125 | 270±1.1Ⓜ | 320±1.1Ⓜ | 200±1.1Ⓜ | 39$_{-0.29}$ | 260 | 225 | 202 | 150 | 215 | 180 | 158 | 100 |
| 1D 315-50 | 270±1.1Ⓜ | 320±1.1Ⓜ | 200±1.1Ⓜ | 39$_{-0.29}$ | 315 | 280 | 258 | 200 | 280 | 240 | 212 | 150 |
| 1D 315-71 | 270±1.1Ⓜ | 320±1.1Ⓜ | 200±1.1Ⓜ | 39$_{-0.29}$ | 315 | 280 | 258 | 200 | 280 | 240 | 212 | 150 |
| 1D 500-63 | 440±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 370 | 335 | 312 | 250 | 280 | 240 | 212 | 150 |
| 1D 630-90 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 370 | 335 | 312 | 250 | 335 | 295 | 268 | 200 |
| 1D 630-125 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 370 | 335 | 312 | 250 | 280 | 240 | 212 | 150 |
| 1D 800-56 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 435 | 395 | 365 | 300 | 335 | 295 | 268 | 200 |
| 1D 1250-63 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 485 | 445 | 415 | 350 | 390 | 350 | 320 | 250 |
| 1D 1250-125 | 630±1.1Ⓜ | 630±1.1Ⓜ | 360±1.1Ⓜ | 85$_{-0.31}$ | 485 | 445 | 415 | 350 | 335 | 295 | 268 | 200 |
| 1D 1600-90 | 630±1.1Ⓜ | 630±1.1Ⓜ | 360±1.1Ⓜ | 85$_{-0.31}$ | 485 | 445 | 415 | 350 | 460 | 410 | 370 | 300 |
| 2D 630-90 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 370 | 335 | 312 | 250 | 335 | 295 | 268 | 200 |
| 2D 630-125 | 530±1.1Ⓜ | 530±1.1Ⓜ | 300±1.1Ⓜ | 64$_{-0.31}$ | 370 | 335 | 312 | 250 | 335 | 295 | 268 | 200 |
| 2D 2000-21 | 670±1.1Ⓜ | 810±1.1Ⓜ | 510±1.1Ⓜ | 85$_{-0.31}$ | 670 | 620 | 585 | 500 | 565 | 515 | 482 | 400 |

| Pump | Dimensions, mm | | | | | | | $P_y$, MPa (kgf/cm$^2$) suction/discharge | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|
| | d | $d_1$ | $d_2$ | $d_3$ | n | $n_1$ | b | | |
| D 160-112 | 22 | 18 | 23 | 36js6 (±0.008) | 8 | 8 | 10 $\frac{N9\ (-0.036)}{h9\ (-0.036)}$ | 1.0 (10) / 1.6 (16) | 200 |
| D 200-36 | 18 | 18 | 23 | 32js6 (±0.008) | | | | 0.6 (6) / 0.6 (6) | 240 |
| D 320-50 | 18 | 18 | 23 | 32js6 (±0.008) | | | | 0.6 (6) / 0.6 (6) | 300 |
| 1D 200-90 | 18 | 18 | 24 | 36js6 (±0.008) | | | | 0.6 (6) / 1.6 (16) | 145 |
| 1D 250-125 | 18 | 18 | 24 | 36js6 (±0.008) | | | | 0.6 (6) / 1.6 (16) | 165 |
| 1D 315-50 | 18 | 22 | 24 | 36js6 (±0.008) | | | | 0.6 (6) / 1.0 (10) | 190 |
| 1D 315-71 | 18 | 22 | 24 | 36js6 (±0.008) | | | | 0.6 (6) / 1.0 (10) | 190 |
| 1D 500-63 | 18 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 8 | 18 $\frac{N9\ (-0.043)}{h9\ (-0.043)}$ | 0.6 (6) / 1.0 (10) | 450 |
| 1D 630-90 | 18 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | | 0.6 (6) / 1.6 (16) | 524 |
| 1D 630-125 | 18 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 8 | | 0.6 (6) / 1.6 (16) | 797 |
| 1D 800-56 | 22 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 8 | | 0.6 (6) / 1.0 (10) | 560 |
| 1D 1250-63 | 22 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | | 0.6 (6) / 1.0 (10) | 800 |
| 1D 1250-125 | 22 | 22 | 35 | 80k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | 22 $\frac{N9\ (-0.052)}{h9\ (-0.052)}$ | 0.6 (6) / 1.6 (16) | 1515 |
| 1D 1600-90 | 22 | 26 | 35 | 80k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | | 0.6 (6) / 1.6 (16) | 1165 |
| 2D 630-90 | 18 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | 18 $\frac{N9\ (-0.043)}{h9\ (-0.043)}$ | 0.6 (6) / 1.6 (16) | 465 |
| 2D 630-125 | 18 | 22 | 28 | 60k6 ($^{+0.021}_{+0.002}$) | 12 | 12 | | 0.6 (6) / 1.6 (16) | 500 |
| 2D 2000-21 | 26 | 26 | 35 | 80k6 ($^{+0.021}_{+0.002}$) | 20 | 16 | 22 $\frac{N9\ (-0.052)}{h9\ (-0.052)}$ | 1.0 (10) /1.0 (10) | 1565 |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA




| C* (mm) | 175 | 185 | 215 | 190 | 370 | 485 | 310 |
|---|---|---|---|---|---|---|---|
| Pump | D 160-112 | D 200-36 | D 320-50 | 1D 200-90<br>1D 250-125<br>1D 315-50<br>1D 315-71 | 1D 1250-125<br>1D 1600-90 | 2D 200-21 | other pumps |

| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| D 160-112 | 1760 | 1355 | 175 | - | - | 900 | 640 | 510 | 440 | 905 | 525 | 4 | 5AM250M2 | 90 | 220/380 | 550 | 877 |
| | 1465 | 1080 | 175 | | | 700 | | | | 765 | 520 | | 5A160S4 | 15 | | 127 | 467 |
| | 1400 | 1080 | 175 | | | 700 | | | | 765 | 520 | | AIR160S4 | 15 | | 120 | 460 |
| D 160-112a | 1730 | 1355 | 175 | - | - | 900 | 640 | 510 | 440 | 905 | 525 | 4 | 5AM250S2 | 75 | 220/380 | 480 | 847 |
| | 1465 | 1080 | 175 | | | 700 | | | | 765 | 520 | | 5A160S4 | 15 | | 127 | 467 |
| | 1400 | 1080 | 175 | | | 700 | | | | 765 | 520 | | AIR160S4 | 15 | | 120 | 460 |
| D 160-112b | 1630 | 1260 | 175 | | | 900 | 640 | 510 | 440 | 830 | 520 | 4 | 5A225M2 | 55 | 220/380 | 340 | 693 |
| D 200-36 | 1455 | 1170 | 185 | - | - | 800 | 800 | 500 | 400 | 850 | 560 | 4 | 4AMN180M4 | 37 | 380 | 190 | 557 |
| | 1600 | 1235 | | | | 870 | | | | 845 | | | 5A200M4 | 37 | 380 | 245 | 557 |
| | 1585 | 1235 | | | | | | | | 835 | | | A200M4 | 37 | 220/380 | 230 | 542 |
| | 1670 | 1270 | | | | | | | | 835 | | | A200L4 | 45 | 220/380 | 260 | 547 |
| D 200-36a | 1415 | 1135 | 185 | - | - | 800 | 800 | 500 | 440 | 850 | 560 | 4 | 4AMN180S4 | 30 | 380 | 170 | 535 |
| | 1540 | 1170 | | | | | | | | 830 | | | A180M4 | 30 | 220/380 | 190 | 557 |
| | 1515 | 1170 | | | | | | | | 830 | | | AIR180M4 | 30 | 380 | 190 | 557 |
| D 200-36b | 1465 | 1135 | 185 | - | - | 800 | 800 | 500 | 440 | 830 | 560 | 4 | AIR180S4 | 22 | 380 | 170 | 534 |
| | 1480 | 1135 | 185 | | | 800 | 800 | 500 | 440 | 830 | 560 | | A180S4У3 | 22 | 220/380 | 157 | 525 |
| D 320-50 | 1775 | 1360 | 215 | - | - | 940 | 970 | 530 | 470 | 990 | 610 | 4 | 5AM250S4 | 75 | 380 | 480 | 955 |
| | 1770 | 1360 | 215 | | | 940 | 970 | 530 | 470 | 955 | 610 | | A250S4 | 75 | 220/380 | 450 | 920 |
| D 320-50a | 1710 | 1320 | 215 | - | - | 940 | 970 | 530 | 470 | 890 | 600 | 4 | A225M4 | 55 | 220/380 | 325 | 785 |
| | 1705 | | | | | 940 | | | | 910 | 600 | | 5A225M4 | 55 | 380 | 345 | 805 |
| | 1575 | | | | | 890 | | | | 955 | 620 | | 5AN200L4 | 55 | 380 | 290 | 740 |
| D 320-50b | 1650 | 1320 | 215 | - | - | 890 | 970 | 530 | 470 | 920 | 620 | 4 | 5A200L4 | 45 | 380 | 270 | 745 |
| | 1675 | 1320 | 215 | | | 890 | 970 | 530 | 470 | 920 | 620 | | A200L4 | 45 | 220/380 | 260 | 735 |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| 1D 200-90 | 1740 | 1330 | 190 | - | - | 910 | 545 | 460 | 400 | 840 | 460 | 4 | 5AM250M2 | 90 | 380 | 505 | 770 |
| | 1705 | | | | | | 530 | | | 805 | | | A250M2 | 90 | 220/380 | 490 | 755 |
| | 1710 | | | | | | 545 | | | 805 | | | 5AMN250S2 | 90 | 380 | 485 | 750 |
| | 1445 | 1080 | | | | 735 | 530 | 350 | 290 | 705 | | | 5A160S4 | 15 | 220/380 | 127 | 365 |
| | 1405 | 1080 | | | | 735 | 530 | 350 | 290 | 715 | | | AIR160S4 | 15 | 220/380 | 120 | 360 |
| | 1565 | 1190 | | | | 780 | 530 | 350 | 290 | 705 | | | 4ANM180MO4 | 15 | 220 | 179,5 | 410 |
| 1D 200-90a | 1710 | 1330 | 190 | - | - | 910 | 545 | 460 | 400 | 840 | 460 | 4 | 5AM250S2 | 75 | 380 | 475 | 740 |
| | 1705 | 1330 | | | | 910 | 530 | 460 | 400 | 805 | | | A250S2 | 75 | 220/380 | 450 | 715 |
| | 1525 | 1270 | | | | 820 | 530 | 360 | 300 | 750 | | | 5AN200L2 | 75 | 380 | 280 | 525 |
| 1D 200-90b | 1610 | 1235 | 190 | - | - | 840 | 530 | 450 | 380 | 790 | 480 | 4 | 5A225M2 | 55 | 380 | 340 | 605 |
| | 1615 | 1235 | | | | 840 | | 450 | 380 | 745 | 480 | | A225M2 | | 220/380 | 320 | 585 |
| | 1495 | 1205 | | | | 820 | | 360 | 300 | 750 | 460 | | 5AN200M2 | | 380 | 250 | 500 |
| | 1555 | 1240 | | | | | | | | 745 | | | 5A200L2 | 45 | 380 | 255 | 500 |
| | 1575 | 1240 | | | | | | | | 735 | | | A200L2 | | 220/380 | 255 | 500 |
| | 1395 | 1125 | | | | 780 | | 350 | 290 | 750 | | | 4AMN180M2 | | 380 | 185 | 430 |
| 1D 250-125 | 1932 | 1500 | 190 | - | - | 990 | 895 | 630 | 510 | 985 | 535 | 4 | 5AM315S2 | 160 | 380 | 970 | 1287 |
| | 1972 | 1500 | | | | | 590 | 630 | 510 | 880 | 535 | | A315S2 | | 220/380 | 905 | 1225 |
| | 1852 | 1490 | | | | | 620 | 520 | 450 | 880 | 500 | | 5AMN280M2 | | 380 | 770 | 1080 |
| | 1628 | 1490 | | | | | 665 | 520 | 450 | 965 | 500 | | 5AN280A2 | | 380 | 744 | 1042 |
| 1D 250-125a | 1852 | 1490 | 190 | | | 990 | 620 | 520 | 450 | 880 | 500 | 4 | 5AM280M2 | 132 | 380 | 770 | 1080 |
| | 1822 | 1490 | 190 | - | - | 990 | 550 | 520 | 450 | 845 | 500 | 4 | A280M2 | 132 | 220/380 | 620 | 943 |
| 1D 315-50 | 1707 | 1325 | 190 | - | - | 890 | 600 | 470 | 400 | 890 | 510 | 4 | 5AM250S2 | 75 | 380 | 475 | 788 |
| | 1702 | 1325 | | | | 890 | | 470 | 400 | 895 | 510 | | A250S2 | | 220/380 | 450 | 750 |
| | 1522 | 1265 | | | | 820 | | 360 | 300 | 790 | 500 | | 5AN200L2 | | 380 | 280 | 580 |
| 1D 315-50a | 1607 | 1255 | 190 | - | - | 840 | 600 | 440 | 370 | 805 | 495 | 4 | 5A225M2 | 55 | 380 | 340 | 650 |
| | 1612 | 1255 | | | | 840 | | 440 | 370 | 760 | 495 | | A225M2 | | 220/380 | 320 | 630 |
| | 1492 | 1235 | | | | 820 | | 360 | 300 | 790 | 500 | | 5AN200M2 | | 380 | 250 | 549 |
| 1D 315-50b | 1553 | 1235 | 190 | - | - | 820 | 600 | 360 | 300 | 785 | 500 | 4 | 5A200L2 | 45 | 380 | 255 | 554 |
| | 1577 | 1235 | | | | 820 | | | | 775 | | | A200L2 | | 220/380 | 255 | 554 |
| | 1392 | 1130 | | | | 780 | | | | 790 | | | 4AMN180M2 | | 380 | 185 | 474 |

| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| 1D 315-71 | 1737 | 1325 | 190 | - | - | 890 | 600 | 470 | 400 | 890 | 510 | 4 | 5AMN250M2 | 110 | 380 | 530 | 843 |
| | 1852 | 1400 | | | | 940 | 620 | 520 | 450 | 890 | | | 5AM280S2 | | 380 | 720 | 1045 |
| | 1822 | 1400 | | | | 940 | 620 | 520 | 450 | 855 | | | A280S2 | | 220/380 | 590 | 915 |
| 1D 315-71a | 1737 | 1325 | 190 | - | - | 890 | 600 | 470 | 400 | 890 | 510 | 4 | 5AM250M2 | 90 | 380 | 505 | 818 |
| | 1702 | 1325 | | | | | | | | 855 | | | A250M2 | | 220/380 | 490 | 803 |
| | 1707 | 1325 | | | | | | | | 890 | | | 5AMN250S2 | | 380 | 485 | 798 |
| 1D 500-63 | 2445 | 1895 | 310 | - | 620 | 1240 | 770 | 630 | 570 | 1065 | 615 | 6 | 5AM315S4 | 160 | 380/660 | 1110 | 1850 |
| | 2335 | 1830 | | | | | | 530 | 470 | 1000 | 620 | | 5AMN280M4 | | | 835 | 1510 |
| | 2040 | 1885 | | | | | | 530 | 470 | 1205 | 620 | | 5AN280B4 | | | 764 | 1445 |
| 1D 500-63a | 2265 | 1830 | 310 | - | 620 | 1240 | 770 | 530 | 470 | 1000 | 620 | 6 | 5AMN280S4 | 132 | 380/660 | 756 | 1430 |
| | 2290 | 1830 | | | | | | | | 965 | | | A280M4 | | | 700 | 1360 |
| | 2040 | 1885 | | | | | | | | 1205 | | | 5AN280A4 | | | 720 | 1400 |
| | 2265 | 1830 | 310 | - | 620 | 1240 | 770 | 530 | 470 | 1000 | 620 | 6 | 5AM280S4 | 110 | 380/660 | 780 | 1455 |
| | 2175 | 1830 | | | 620 | 1240 | | 530 | 470 | 965 | 620 | | A280S4 | | | 570 | 1230 |
| | 2120 | 1670 | | | 570 | 1140 | | 500 | 440 | 1000 | 610 | | 5AMN250M4 | | | 540 | 1175 |
| 1D 500-63b | 2090 | 1670 | 310 | - | 570 | 1140 | 770 | 500 | 440 | 1000 | 610 | 6 | 5AMN250-S4 | 90 | 220/380 | 490 | 1125 |
| | 2120 | | | | | | | | | | | | 5AM250-M4 | | | 515 | 1150 |
| | 2105 | | | | | | | | | | | | 5A250-M4 | | | 525 | 1160 |
| | 2145 | | | | | | | | | 955 | | | A250-M4 | | | 550 | 1185 |
| 1D 630-90 | 2930 | 2435 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1580 | 710 | 8 | DAZO4 400XK-4M | 315 | 6000 | 2190 | 3050 |
| | 2930 | 2435 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1580 | 710 | 8 | DAZO4 400X-4M | 315 | | 2330 | 3050 |
| | 2360 | 2125 | 310 | - | 700 | 1400 | 1090 | 720 | 660 | 1535 | 665 | 6 | A4-355-L4 | 250 | | 1250 | 2070 |
| | 2445 | 1960 | | | 630 | 1250 | 1000 | 600 | 540 | 1115 | | | 5AMN315-M4 | | 380/660 | 1050 | 1940 |
| | 2195 | 1930 | | | | | | | | 1175 | | | 5AN315-B4 | | | 990 | 1780 |
| | 2250 | 2065 | | | | | | | | 1200 | | | DAN315-M4 | | | 970 | 1775 |
| | 2580 | 2290 | | | 700 | 1400 | 1090 | 720 | 660 | 1110 | | | DAV250-4 | | 6000 | 1420 | 2260 |
| | 2345 | 1960 | | | 630 | 1250 | 1000 | 600 | 540 | 1115 | | | 5AM315 S6 | 110 | 380/660 | 960 | 1750 |
| | 2040 | 1905 | | | 570 | 1140 | | | | 1070 | | | 5AN280B-6 | 110 | | 732 | 1500 |
| | 2265 | | | | | | | | | | | | 5AMN280-S6 | 90 | | 715 | 1480 |
| | 2265 | | | | | | | | | | | | 5AM280M-6 | | | 780 | 1545 |
| | 2040 | | | | | | | | | | | | 5AN280A-6 | | | 700 | 1470 |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

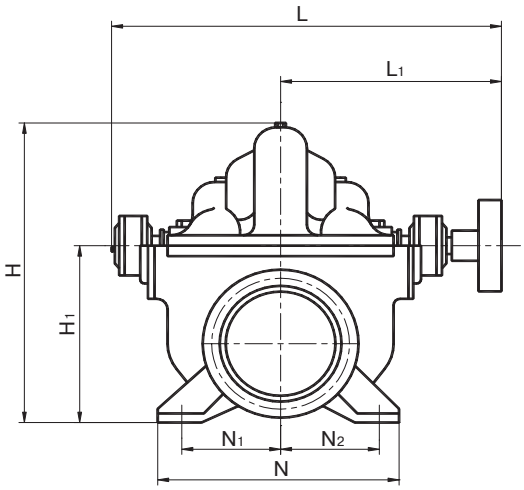
| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| 1D 630-90a | 2360 | 2125 | 310 | - | 700 | 1400 | 1090 | 720 | 660 | 1535 | 655 | 6 | A4-355-LK-4 | 200 | 6000 | 1200 | 2025 |
| | 2445 | 1960 | | | 630 | 1250 | 1000 | 600 | 540 | 1115 | | | 5AMN315-S4 | | 380/660 | 1050 | 1845 |
| | 2445 | 1960 | | | | | | | | 1115 | | | 5AM315M4 | | | 1110 | 1945 |
| | 2195 | 1930 | | | | | | | | 1175 | | | 5AN315A-4 | | | 900 | 1960 |
| | 2200 | 2015 | | | | | | | | 1200 | | | DAN315-S4 | | | 870 | 1675 |
| | 2265 | 1905 | | | 570 | 1140 | | | | 1070 | | | 5AM280-S6 | 75 | | 745 | 1510 |
| | 2175 | 1905 | | | | | | | | | | | A280S6 | | | 570 | 1335 |
| | 2120 | 1695 | | | | | | | | | | | 5AMN250-M6 | | 220/380 | 475 | 1200 |
| 1D 630-90b | 2445 | 1960 | 310 | - | 630 | 1250 | 1000 | 600 | 540 | 1115 | 655 | 6 | 5AM315-S4 | 160 | 380/660 | 1110 | 1905 |
| | 2335 | 1905 | | | 570 | 1140 | | | | 1070 | | | 5AMN280-M4 | | | 835 | 1600 |
| | 2040 | 1905 | | | | | | | | 1130 | | | 5AN280-B4 | | | 764 | 1530 |
| | 2120 | 1695 | | | | | | | | 1070 | | | 5AM250-M6 | 55 | 220/380 | 450 | 1200 |
| | 2085 | 1695 | | | | | | | | 1070 | | | A250-M6 | 55 | 220/380 | 455 | 1205 |
| 1D 630-125 | 2330 | 2065 | 310 | - | 700 | 1345 | 910 | 625 | 530 | 1725 | 750 | 6 | 5AN355-B4 | 400 | 380/660 | 1400 | 2500 |
| | 2805 | 2260 | 310 | - | 700 | 1345 | 1090 | 625 | 530 | 1265 | 750 | 6 | A4-355Y-4 | | 6000 | 1730 | 2845 |
| | 2705 | 2395 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1650 | 750 | 8 | A4-400XK-4M | | 6000 | 1930 | 3095 |
| | 2905 | 2590 | 200 | 700 | 1400 | 2100 | 1540 | 1005 | 920 | 1755 | 770 | | A4-85/37K-4 | | 10000 | 2600 | 3775 |
| | 2930 | 2415 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1620 | 750 | | DAZO4-400X-4M | | 6000 | 2330 | 3495 |
| | 3130 | 2590 | 200 | 700 | 1400 | 2100 | 1540 | 1005 | 920 | 1795 | 770 | | DAZO4-85/37-4 | | 10000 | 2820 | 4000 |
| 1D 630-125a | 2330 | 2065 | 310 | - | 700 | 1345 | 910 | 625 | 530 | 1725 | 750 | 6 | 5AN355-A4 | 315 | 380/660 | 1290 | 2395 |
| | 2715 | 2160 | 310 | - | 700 | 1345 | 1090 | 625 | 530 | 1265 | | 6 | A4-355X-4 | | 6000 | 1450 | 2560 |
| | 2930 | 2415 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1620 | | 8 | DAZO4-400XK-4M | | 6000 | 2190 | 3360 |
| | 2385 | 2185 | 310 | - | 700 | 1345 | 1040 | 625 | 530 | 1445 | | 6 | DAN-355S-4 | | 380/660 | 1270 | 2390 |
| | 2575 | 2365 | 310 | - | 700 | 1345 | 1140 | 625 | 530 | 1195 | | 6 | DAB-315-4 | | 6000 | 1450 | 2570 |
| | 3130 | 2590 | 200 | 700 | 1400 | 2100 | 1540 | 1005 | 920 | 1795 | 770 | 8 | DAZO4-85/37K-4 | | 10000 | 2820 | 4000 |
| 1D 630-125b | 2595 | 1935 | 310 | - | 700 | 1345 | 900 | 625 | 530 | 1195 | 745 | 6 | 5AMN315-M4 | 250 | 380/660 | 1145 | 2235 |
| | 2195 | 1935 | | | | | 900 | | | 1245 | 745 | | 5AN315-B4 | | 380/660 | 990 | 2080 |
| | 2635 | 2090 | | | | | 1090 | | | 1265 | 750 | | A4-355L-4 | | 6000 | 1250 | 2355 |
| | 2250 | 2055 | | | | | 900 | | | 1280 | 745 | | DAN-315-M4 | | 380/660 | 970 | 2075 |
| | 2575 | 2365 | | | | | 1140 | | | 1195 | 750 | | DAV-250-4 | | 6000 | 1420 | 2570 |

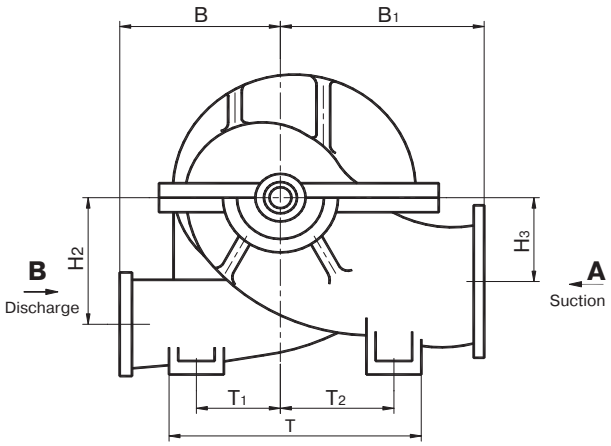
| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| 1D 800-56 | 2306 | 2125 | 310 | - | 630 | 1250 | 880 | 600 | 540 | 1535 | 665 | 6 | A4-355-LK4 | 200 | 6000 | 1200 | 2050 |
| | 2595 | 1960 | | | | | | | | 1115 | | | 5AMN315-S4 | | 380/660 | 1050 | 1870 |
| | 2595 | 1960 | | | | | | | | 1115 | | | 5AM315-M4 | | | 1150 | 1970 |
| | 2195 | 1930 | | | | | | | | 1165 | | | 5AN315-A4 | | | 900 | 1710 |
| | 2200 | 2015 | | | | | | | | 1165 | | | DAN315-S4 | | | 870 | 1695 |
| 1D 800-56a | 2385 | 1905 | 310 | - | 570 | 1140 | 880 | 600 | 540 | 1045 | 665 | 6 | 5AMN280-S4 | 132 | 380/660 | 756 | 1545 |
| | 2040 | | | | | | | | | 1130 | | | 5AN280-A4 | | | 720 | 1505 |
| | 2325 | | | | | | | | | 1045 | | | A280-M4 | | | 700 | 1485 |
| 1D 800-56b | 2415 | 1905 | 310 | - | 570 | 1140 | 880 | 660 | 540 | 1045 | 665 | 6 | 5AM280-S4 | 110 | 380/660 | 780 | 1565 |
| | 2325 | 1905 | | | | | | | | | | | A280-S4 | | | 570 | 1355 |
| | 2270 | 1695 | | | | | | | | | | | 5AMN250-M4 | | | 540 | 1310 |
| 1D 1250-63 | 2370 | 2064 | 310 | - | 700 | 1400 | 950 | 720 | 650 | 1210 | 725 | 6 | 5AN355-A4 | 315 | 380/660 | 1290 | 2485 |
| | 2670 | 2385 | | | | | 1050 | | | 1175 | 690 | | DAV-315-4 | | 6000 | 1450 | 2583 |
| | 2425 | 2205 | | | | | 950 | | | 1425 | 690 | | DAH355-S4 | | 380/660 | 1270 | 2387 |
| | 2970 | 2415 | 200 | 650 | 1300 | 1950 | 1320 | 885 | 800 | 1640 | 770 | 8 | DAZO4-400XK-4M | | 6000 | 2190 | 3385 |
| | 2755 | 2210 | 310 | - | 700 | 1400 | 1040 | 720 | 650 | 1280 | 690 | 6 | A4-355X-4 | | 6000 | 1450 | 2558 |
| | 2535 | 1970 | | | 620 | 1265 | 950 | 600 | 540 | 1175 | 725 | | 5AM315-S6 | 110 | 380/660 | 960 | 2045 |
| | 2545 | 1840 | | | 620 | 1265 | | | | 1080 | 725 | | A315-S6 | | | 750 | 1795 |
| | 2080 | 1890 | | | 600 | 1200 | | | | 1195 | 730 | | 5AN280-V6 | | | 732 | 1742 |
| 1D 1250-63a | 2670 | 2385 | 310 | - | 700 | 1400 | 1050 | 720 | 650 | 1175 | 690 | 6 | DAV-250-4 | 250 | 6000 | 1420 | 2583 |
| | 2290 | 2075 | | | 620 | 1265 | 950 | 600 | 540 | 1260 | 725 | | DAN-315-M4 | | 380/660 | 970 | 2062 |
| | 2235 | 1920 | | | | | | | | 1225 | | | 5AN315-V4 | | | 990 | 2070 |
| | 2635 | 1970 | | | | | | | | 1175 | | | 5AMN315-M4 | | | 1145 | 2230 |
| | 2675 | 2130 | | | 700 | 1400 | 1040 | 720 | 650 | 1280 | 690 | | A4-355L-4 | | 6000 | 1250 | 2352 |
| | 2455 | 1890 | | | 600 | 1200 | 950 | 600 | 540 | 1110 | 730 | | 5AM280-S6 | 75 | 380/660 | 430 | 1755 |
| | 2425 | 1780 | | | 600 | 1245 | 950 | 600 | 540 | 1085 | 730 | | A280-S6 | 75 | 380/660 | 570 | 1712 |
| 1D 1250-63b | 2635 | 1970 | 310 | - | 620 | 1265 | 950 | 600 | 540 | 1175 | 725 | 6 | 5AM315-M4 | 200 | 380/660 | 1150 | 2235 |
| | 2635 | 1970 | | | | | | | | 1175 | | | 5AMN315-S4 | | | 1050 | 2135 |
| | 2235 | 1920 | | | | | | | | 1225 | | | 5AN315-A4 | | | 900 | 1980 |
| | 2675 | 2130 | | | 700 | 1400 | 1040 | 720 | 650 | 1280 | 690 | | A4-355LK-4 | | 6000 | 1200 | 2300 |
| | 2240 | 2025 | | | 620 | 1265 | 950 | 600 | 540 | 1260 | 725 | | DAN-315-S4 | | 380/660 | 970 | 1960 |
| | 2280 | 1710 | | | 600 | 1150 | | | | 1110 | 730 | | 5AM250-M6 | 55 | 220/380 | 450 | 1464 |
| | 2260 | 1710 | | | 600 | 1150 | | | | 1085 | 730 | | A250-M6 | 55 | 220/380 | 455 | 1435 |

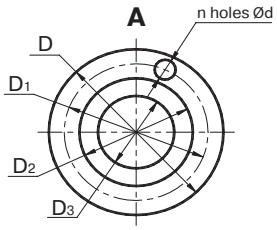
## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

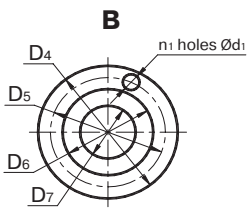
| Pump | Dimensions, mm | | | | | | | | | | | n | Electric motor | | | | Unit weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | l | $l_1$ | $l_2$ | $l_3$ | B | $B_1$ | A | H | h | | Model | Power, kW | Voltage, V | Weight, kg | |
| 1D 1250-125 | 3255 | 2655 | 250 | 700 | 1400 | 2100 | 1420 | 1005 | 920 | 1835 | 810 | 8 | DAZO4-450H-4M | 630 | 6000 | 2900 | 4830 |
| | 3180 | 2810 | | 720 | 1440 | 2160 | 1540 | | | 1795 | | | A4-85/43-4 | | 10000 | 2800 | 4700 |
| | 3526 | 2930 | | 800 | 1600 | 2400 | 1540 | | | 1835 | | | DAZO4-85/49-4 | | 10000 | 3325 | 5335 |
| 1D 1250-125a | 2980 | 2615 | 250 | 700 | 1400 | 2100 | 1320 | 985 | 900 | 1700 | 800 | 8 | A4-400H-4M | 500 | 6000 | 2070 | 4015 |
| | 3305 | 2715 | 250 | 700 | 1400 | 2100 | 1320 | 985 | 900 | 1670 | 800 | 8 | DAZO4-400U-4M | 500 | 6000 | 2630 | 4540 |
| 1D 1250-125b | 2980 | 2615 | 250 | 700 | 1400 | 2100 | 1320 | 985 | 900 | 1700 | 800 | 8 | A4-400HK-4M | 400 | 6000 | 1930 | 3875 |
| | 2605 | 2240 | 370 | - | 700 | 1500 | 1200 | 715 | 630 | 1345 | 800 | 6 | 5AN355-B4 | 400 | 380/660 | 1400 | 3300 |
| 1D 1600-90 | 3255 | 2655 | 250 | 700 | 1400 | 2100 | 1420 | 1005 | 920 | 1835 | 810 | 8 | DAZO4-450H-4M | 630 | 6000 | 2900 | 4830 |
| | 3180 | 2810 | | 720 | 1440 | 2160 | 1540 | | | 1795 | | | A4-85/43-4 | | 10000 | 2800 | 4350 |
| | 3526 | 2930 | | 800 | 1600 | 2400 | 1540 | | | 1835 | | | DAZO4-85/49-4 | | 10000 | 3325 | 4985 |
| | 2470 | 2100 | 370 | - | 700 | 1400 | 1200 | 715 | 630 | 1305 | 805 | 6 | 5AN315-B6 | 160 | 380/660 | 980 | 2470 |
| 1D 1600-90a | 2980 | 2615 | 250 | 700 | 1400 | 2100 | 1320 | 985 | 900 | 1700 | 800 | 8 | A4-400H-4M | 500 | 6000 | 2070 | 3665 |
| | 3305 | 2715 | | | | | | | | 1670 | | | DAZO4-400U-4M | 500 | | 2630 | 4225 |
| | 2980 | 2615 | | | | | | | | 1700 | | | A4-400HK-4M | 400 | | 1930 | 3525 |
| | 2605 | 2240 | 370 | - | 700 | 1500 | 1200 | 715 | 630 | 1345 | | 6 | 5AN355-B4 | 400 | 380/660 | 1400 | 2950 |
| | 2470 | 2100 | 370 | - | 700 | 1400 | 1200 | 715 | 630 | 1305 | 805 | 6 | 5AN315-A6 | 132 | 380/660 | 900 | 2395 |
| 1D 1600-90b | 2605 | 2240 | 370 | - | 700 | 1500 | 1200 | 715 | 630 | 1345 | 800 | 6 | 5AN355-A4 | 315 | 380/660 | 1290 | 2790 |
| | 3205 | 2615 | 250 | 700 | 1400 | 2100 | 1320 | 985 | 900 | 1670 | 800 | 8 | DAZO4-400HK-4M | 315 | 6000 | 2190 | 3785 |
| | 2620 | 2100 | 370 | - | 700 | 1400 | 1200 | 715 | 630 | 1305 | 805 | 6 | 5AM315-S6 | 110 | 380/660 | 960 | 2495 |
| | 2436 | 2065 | 370 | - | 700 | 1400 | 1200 | 690 | 630 | 1260 | 760 | 6 | 5AN280-B6 | 110 | 380/660 | 732 | 2185 |
| 2D 2000-21 | 2790 | 2345 | 485 | - | 800 | 1450 | 1200 | 765 | 670 | 1435 | 980 | 6 | 5AMN315-M6 | 160 | 380/660 | 1005 | 2975 |
| | 2640 | 2345 | | | | | | | | 1485 | | | 5AN315-B6 | 160 | | 980 | 2945 |
| | 2710 | 2300 | | | | | | | | 1405 | | | 5AM280-M8 | 75 | | 790 | 2710 |
| | 2710 | | | | | | | | | 1405 | | | 5AMN280-S8 | | | 705 | 2625 |
| | 2605 | | | | | | | | | 1450 | | | 5AN280-A8 | | | 743 | 2655 |
| 2D 2000-21a | 2790 | 2345 | 485 | - | 800 | 1450 | 1200 | 765 | 670 | 1435 | 980 | 6 | 5AM315-S6 | 110 | 380/660 | 960 | 2930 |
| | 2605 | 2300 | | | | | | | | 1450 | | | 5AN280-B6 | 110 | | 732 | 2645 |
| | 2605 | 2300 | | | | | | | | 1450 | | | 5AM280-S8 | 55 | | 725 | 2640 |

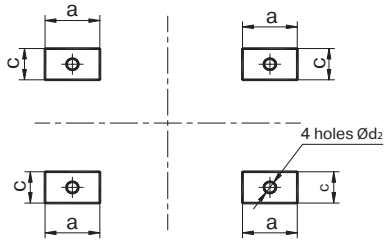
## OVERALL DIMENSIONS




| Pump | Dimensions, mm | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | B | $B_1$ | H | $H_1$ | $H_2$ | $H_3$ | d | $d_1$ | $d_2$ |
| D 630-90-2 | 1190 | 645 | 500 | 500 | 865 | 440 | 330 | 270 | 19 | 24 | 28 |
| D 630-90a-2 | | | | | | | | | | | |
| D 630-90b-2 | | | | | | | | | | | |
| D 2000-21-2 | 1440 | 795 | 500 | 850 | 1285 | 760 | 440 | 460 | 20 | 26 | 35 |
| D 2000-21a-2 | | | | | | | | | | | |
| D 2000-21b-2 | | | | | | | | | | | |
| D 2000-100-2 | 1800 | 1010 | 800 | 750 | 1405 | 800 | 565 | 415 | 33 | 26 | 42 |
| D 2000-100a-2 | | | | | | | | | | | |
| D 2000-100b-2 | | | | | | | | | | | |
| D 2500-62-2 | 1850 | 1025 | 770 | 900 | 1420 | 850 | 620 | 475 | 33 | 30 | 42 |
| D 2500-62a-2 | | | | | | | | | | | |
| D 3200-33-2 | 1890 | 1025 | 740 | 1020 | 1520 | 940 | 525 | 550 | 26 | 30 | 35 |
| D 3200-33a-2 | | | | | | | | | | | |
| D 3200-33b-2 | | | | | | | | | | | |
| D 3200-75-2 | 2000 | 1100 | 740 | 1000 | 1590 | 950 | 642 | 532 | 35 | 30 | 42 |
| D 3200-75a-2 | | | | | | | | | | | |
| D 4000-95-2 | 2260 | 1260 | 1100 | 1100 | 1756 | 1050 | 758 | 595 | 33 | 33 | 45 |
| D 4000-95a-2 | | | | | | | | | | | |

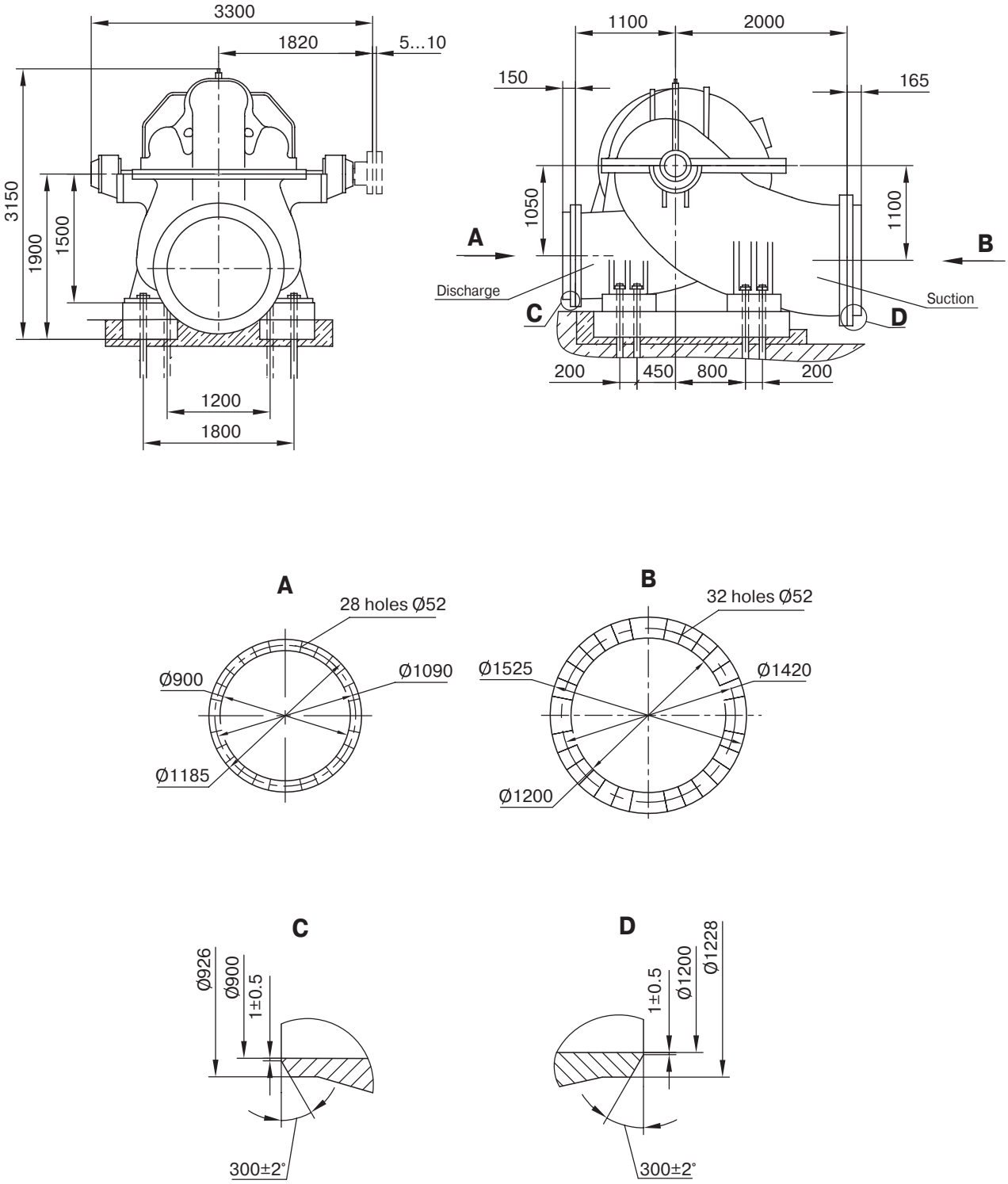
## OVERALL DIMENSIONS

| Pump | Dimensions, mm | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | B | $B_1$ | H | $H_1$ | $H_2$ | $H_3$ | d | $d_1$ | $d_2$ |
| D 6300-27-3 | 2000 | 1085 | 750 | 1200 | 1950 | 1210 | 660 | 690 | 35 | 30 | 42 |
| D 6300-27-3-1 | | | | | | | | | | | |
| D 6300-27a-3 | | | | | | | | | | | |
| D 6300-27b-3 | | | | | | | | | | | |
| D 6300-80-2 | 2880 | 1490 | 1100 | 1285 | 2195 | 1330 | 880 | 700 | 35 | 35 | 52 |
| D 6300-80a-2 | | | | | | | | | | | |
| D 6300-80b-2 | | | | | | | | | | | |

| Pump | Dimensions, mm | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | $n_1$ | D | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ | T | $T_1$ | $T_2$ | N | $N_1$ | $N_2$ | a | c |
| D 630-90-2 | 12 | 12 | 370 | 335 | 312 | 250 | 335 | 295 | 268 | 200 | 590 | 275 | 275 | 590 | 275 | 275 | 120 | 120 |
| D 630-90a-2 | | | | | | | | | | | | | | | | | | |
| D 630-90b-2 | | | | | | | | | | | | | | | | | | |
| D 2000-21-2 | 20 | 16 | 670 | 620 | 585 | 500 | 565 | 515 | 482 | 400 | 800 | 300 | 300 | 800 | 330 | 330 | 200 | 160 |
| D 2000-21a-2 | | | | | | | | | | | | | | | | | | |
| D 2000-21b-2 | | | | | | | | | | | | | | | | | | |
| D 2000-100-2 | 20 | 12 | 710 | 650 | 585 | 500 | 480 | 410 | 370 | 300 | 1200 | 515 | 465 | 800 | 340 | 340 | 220 | 150 |
| D 2000-100a-2 | | | | | | | | | | | | | | | | | | |
| D 2000-100b-2 | | | | | | | | | | | | | | | | | | |
| D 2500-62-2 | 20 | 16 | 710 | 650 | 585 | 500 | 580 | 525 | 482 | 400 | 1100 | 425 | 425 | 110 | 450 | 450 | 250 | 250 |
| D 2500-62a-2 | | | | | | | | | | | | | | | | | | |
| D 3200-33-2 | 20 | 20 | 780 | 725 | 685 | 600 | 670 | 620 | 585 | 500 | 1760 | 360 | 360 | 940 | 390 | 390 | 240 | 200 |
| D 3200-33a-2 | | | | | | | | | | | | | | | | | | |
| D 3200-33b-2 | | | | | | | | | | | | | | | | | | |
| D 3200-75-2 | 20 | 16 | 840 | 770 | 685 | 600 | 580 | 525 | 482 | 400 | 1250 | 500 | 500 | 1100 | 450 | 450 | 250 | 250 |
| D 3200-75a-2 | | | | | | | | | | | | | | | | | | |
| D 4000-95-2 | 20 | 20 | 840 | 770 | 685 | 600 | 710 | 650 | 585 | 500 | 1500 | 600 | 600 | 1200 | 500 | 500 | 300 | 250 |
| D 4000-95a-2 | | | | | | | | | | | | | | | | | | |
| D 6300-27-3 | 24 | 20 | 1020 | 950 | 905 | 800 | 780 | 725 | 685 | 600 | 1200 | 450 | 450 | 1200 | 500 | 500 | 250 | 300 |
| D 6300-27-3-1 | | | | | | | | | | | | | | | | | | |
| D 6300-27a-3 | | | | | | | | | | | | | | | | | | |
| D 6300-27b-3 | | | | | | | | | | | | | | | | | | |
| D 6300-80-2 | 24 | 20 | 1020 | 950 | 905 | 800 | 840 | 770 | 685 | 600 | 1700 | 675 | 675 | 1300 | 500 | 500 | 350 | 300 |
| D 6300-80a-2 | | | | | | | | | | | | | | | | | | |
| D 6300-80b-2 | | | | | | | | | | | | | | | | | | |

## OVERALL DIMENSIONS

**D 12500–24M, D 12500–10M**



# DNA SERIES
## DIESEL-DRIVEN PUMPING UNITS

### APPLICATION

The diesel-driven pumping units of the DNA series are intended for pumping of water and similar liquids by viscosity and chemical activity.

- Max temperature: +85 °C
- Max solids content: 0.05% by weight
- Max solids size: 0.2 mm

The DNA units are generally used for a rapid arrangement of water supply from the surface sources (lakes, rivers, ponds) for irrigation purposes in agriculture, in emergency situations at absence of electricity, in firefighting, and also for drainage of tanks, vessels, pits, and sumps, and in various industrial applications.

In the DNA units the standard double suction pumps are applied of 42 models with capacity and head range within 150-2000 $m^3/h$ and and 35-130 meters, respectively.

The pumping units are manufactured and retrofitted for specific operating conditions and the pumped medium, in any climatic version depending on the customer requirements.

The units are not intended for operation in explosion and fire hazardous premises, being, nevertheless appropriately certified in Russia for firefighting application.

DNA. Stationary version

DNA-P. Unit on the skids

DNA-sh. Unit on the trailer

### PUMP SERIES DESIGNATION

**DNA–P–1D250/125a–GLKV**

DNA - X - XXXXX/XXXX - XXXX

Unit series

No mark – stationary version
**P** – unit on skids
**SH** – unit on trailer

Pump

**G** – version with exhaust gas vacuum unit
**K** – version with cowling
**L** – version with suction line lifting device and winch
**V** – version with suction pipe

## VERSIONS AND MAIN COMPONENTS

### I. DNA Unit versions

— Stationary (DNA)

— On skids (DNA-P)

— On trailer (DNA-SH)

### II. DNA unit configurations

Stationary DNA:

— driving unit of own design, with manual control, based on the diesel engine

— centrifugal pump.

DNA-P on skids:

— driving unit of own design, with manual control, based on the diesel engine

— centrifugal pump

— skid.

DNA-SH on trailer:

— driving unit of own design, with manual control, based on the diesel engine

— centrifugal pump

— trailer.

### III. Additional Components

Stationary DNA unit:

— cowling for protection against atmosphere precipitation

— exhaust gas vacuum unit

— starting preheater (liquid or electric)

— valve on the discharge pipe

— standard suction pipe

— expansion bellows of exhaust system with counter flanges.

DNA-P on skids:

— cowling for protection against atmosphere precipitation

— exhaust gas vacuum unit

— starting preheater (liquid)

— valve on the discharge pipe

— standard suction pipe

— suction pipe lifting device with winch.

DNA-SH on trailer:

— cowling for protection against atmosphere precipitation

— exhaust gas vacuum unit

— starting preheater (liquid)

— valve on the discharge pipe

— standard suction pipe.

## DESIGN AND PRINCIPLE OF OPERATION

DNA in a stationary version (Fig. 1) is equipped with a driving part consisting of a diesel engine (4) with a gear box (8) – for pumps with rotation speed of 2900 rpm. The pumps with rotation speed of 1500 rpm are equipped with a diesel engine with engine power takeoff (PTO) system. The driving part is mounted on the base frame (15).

Besides the engine the driving part includes an air intake system with filter (5), exhaust system with muffler (6), cooling system with water (3) and oil radiators (2), fuel supply system with tank (14) and filter (20), electric system with control panel (10), clutch lever (7).

The coolant is filled through the radiator neck. The coolant drain tap is provided (18). To turn off the oil cooling another tap (1) is provided limiting the oil circulation through the radiator. The engine fuel system is equipped with pipes (hoses). For supercharged engines an intercooler can be installed if it is required by the engine type.

To change the engine's crankshaft speed there is a lever (9) with ratchet provided on a bracket of the control panel.

When the lever is pulled upon an operator, the fuel lever, in its turn, pulls the shaft of the high pressure fuel pump via a flexible transmission that increases the fuel supply to the engine and its rotation speed thereby. After reaching the required operation mode of the engine the lever is fixed in its position by the ratchet.

To reduce the fuel supply it is necessary to press the button on the lever (9) and move the lever in opposite direction.

A clutch lever is mounted on the driving part (7). To turn off the clutch the lever shall be moved into a vertical position. A clutch mechanism can be adjusted by the thrust (16). The free travel of the lever shall be within 50 ± 5 mm.

A pump (12), mounted on the base frame, is connected to a diesel engine by a cardan shaft (11).

The pump rotates clockwise when viewed from the diesel drive side.

To control the pump operation a pressure gauge (17) is installed on the pump discharge pipe, and a pressure vacuum gauge (13) on the pump suction pipe. In its mobile version the DNA unit is mounted on the skids (Fig. 2) or on the trailer. Upon the customer request an additional equipment can be installed in this case:

- suction pipeline (6)
- lifting device to hold the suction line in the working position, consisting of a winch (9) and the beam (4); this device is only installed for version «on the skids»
- exhaust gas vacuum unit – a device for filling the pump and suction line with the pumped liquid (1)
- valve on the discharge pipe (8).

The exhaust gas vacuum unit is mounted on the exhaust manifold of the engine, in front of muffler, and is powered by the engine exhaust. The unit is connected to the pump housing through the sleeve and tap. When the engine is running a movement of the handle into position «II» will close the outlet valve off the pump housing and the exhaust gases would be directed through a nozzle in the diffuser. A vacuum is created in the diffuser chamber and the pump together with the suction pipe are filled with water. After filling the lever is moved into position «I», while damper closes the passage of exhaust gases through the nozzle and diffuser. The exhaust gases leave the exhaust gas vacuum unit and go to the muffler.

**Image. 1.**
DNA unit general view

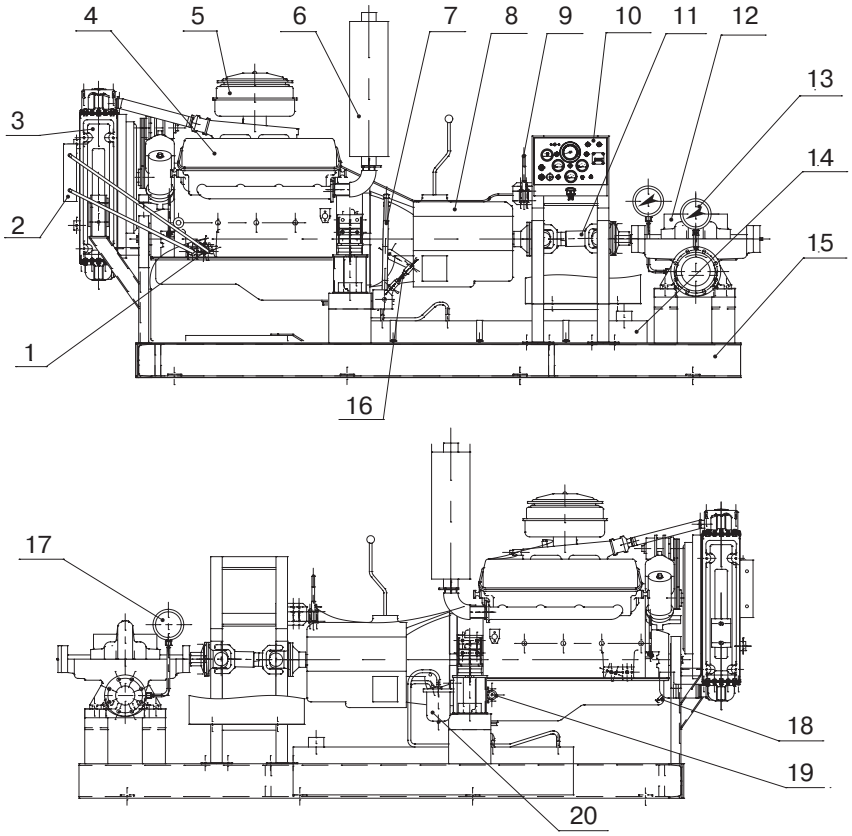
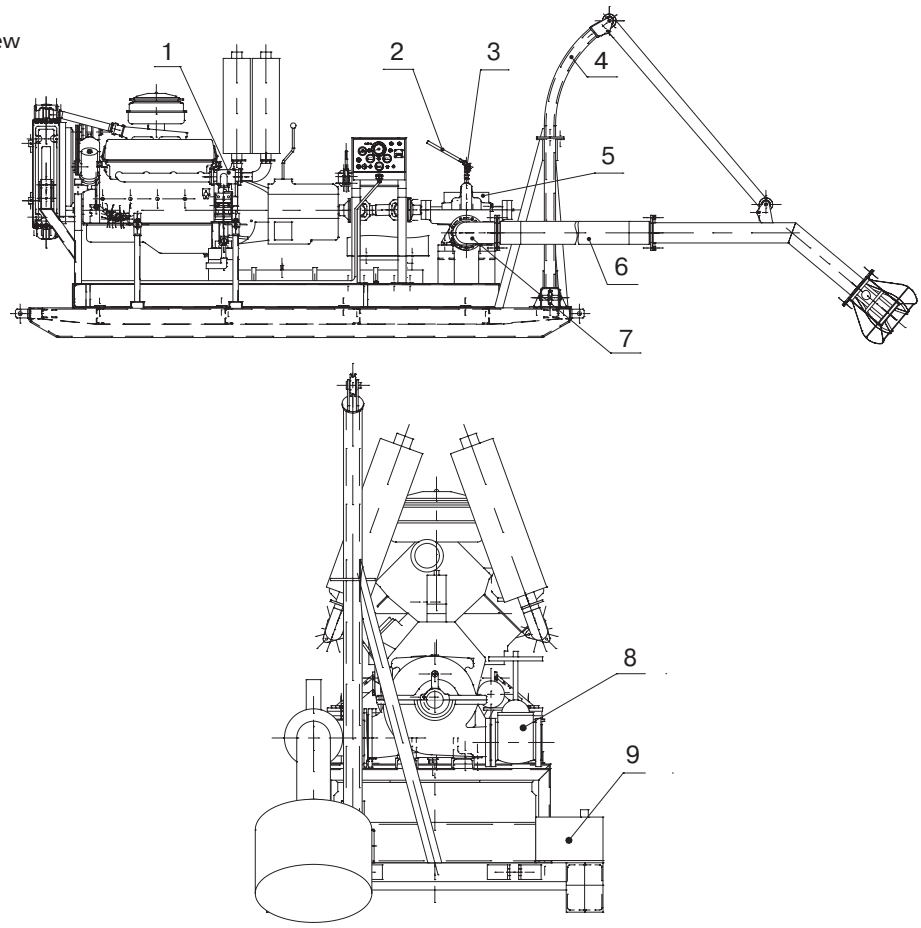



**Image. 2.**
DNA-P unit general view



## TECHNICAL DATA

| | | DNA-1D200/90; DNA-P-1D200/90; DNA-SH-1D200/90 | DNA-1D200/90a; DNA-P-1D200/90a; DNA-SH-1D200/90a | DNA-1D250/125a; DNA-P-1D250/125a; DNA-SH-1D250/125a | DNA-1D315/50; DNA-P-1D315/50; DNA-SH-1D315/50 | DNA-1D315/71; DNA-P-1D315/71; DNA-SH-1D315/71 | DNA-1D315/71a; DNA-P-1D315/71a; DNA-SH-1D315/71a | DNA-1D250/125; DNA-P-1D250/125; DNA-SH-1D250/125 | DNA-1D500/63a; DNA-P-1D500/63a; DNA-SH-1D500/63a | DNA -1D500/63b; DNA-P-1D500/63b; DNA-SH-1D500/63b | DNA-1D800/56a; DNA-P-1D800/56a; DNA-SH-1D800/56a | DNA-1D800/56b; DNA-P-1D800/56b; DNA-SH-1D800/56b | DNA-1D500/63; DNA-P-1D500/63; DNA-SH-1D500/63 | DNA-1D630/90b; DNA-P-1D630/90b; DNA-SH-1D630/90b |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Diesel engine model** | | YAMZ-236M2-4 | | | | | | YAMZ-238M2-6 | YAMZ-238M2-10 | | YAMZ-238M2-10 | | YAMZ-238B-14 | |
| **Engine power, kW/ at $s^{-1}$ (rpm)*** | | 120 / 31.7 (1900) | | | | | | 170 / 31.7 (1900) | 135 / 24.5 (1500) | | 135 / 24.5 (1500) | | 179 / 24.5 (1500) | |
| **Pump model** | | 1D200-90 | 1D200-90a | 1D250-125a | 1D315-50 | 1D315-71 | 1D315-71a | 1D250-125 | 1D500-63a | 1D500-63b | 1D800-56a | 1D800-56b | 1D500-63 | 1D630-90b |
| **Capacity, $m^3/h$ ($m^3/sec$)*** | | 200 (0.055) | 180 (0.049) | 240 (0.066) | 315 (0.087) | 315 (0.087) | 300 (0.083) | 250 (0.069) | 450 (0.125) | 400 (0.111) | 740 (0.205) | 700 (0.195) | 500 (0.140) | 500 (0.140) |
| **Head, m*** | | 90 | 74 | 101 | 50 | 71 | 62 | 125 | 53 | 44 | 48 | 40 | 63 | 60 |
| **Pump rotation speed, $s^{-1}$ (rpm)** | | 48.3 (2900) | | | | | | | 24.5 (1500) | | | | | |
| **Maximum suction pressure, MPa (bar)** | | 0.3 (3) | | | | | | | | | | | | |
| **Power, kW** | **rated** | 65 | 53 | 87 | 62 | 85 | 65 | 125 | 87 | 70 | 120 | 100 | 120 | 110 |
| | **maximum** | 82 | 72 | 110 | 68 | 93 | 80 | 152 | 97 | 78 | 130 | 106 | 142 | 144 |
| **Specific ground pressure for a skid version, MPa ($kgf/cm^2$)** | | 0.1 (1.0) | | | | | | | | | | | | |
| **Maximum sound level at 1 m distance, dBA** | | 104 | | | | | | | | | | | | |
| **Maximum NPSH, m** | | 5.5 | 5.8 | 6.4 | 6.5 | 6.5 | 7.0 | 6.0 | 4.8 | 5.0 | 5.1 | 5.2 | 4.5 | 5.9 |
| **Minimum static suction head, m** | | 4.0 | 3.7 | 3.1 | 3.0 | 3.0 | 2.5 | 3.5 | 4.7 | 4.5 | 4.4 | 4.3 | 5.0 | 3.6 |
| **Filling of pump by water using the exhaust gas unit, seconds** | | 200 | | | | | | | | | | | | |
| **Fuel tank capacity, liters** | | 200 | | | | | | 300 | | | 300 | | 400 | |
| **Hourly fuel consumption at maximum pump power, kg/h** | | 17 | | | | | | 25 | | | 25 | | 38 | |

## TECHNICAL DATA

| | | DNA-1Д800/56; DNA-P-1Д800/56; DNA-SH-1Д800/56 | DNA-1Д1250/63b; DNA-P-1Д1250/63b; DNA-SH-1Д1250/63b | DNA-1Д630/90; DNA-P-1Д630/90; DNA-SH-1Д630/90 | DNA-1Д630/90a; DNA-P-1Д630/90a; DNA-SH-1Д630/90a | DNA-1Д1250/63a; DNA-P-1Д1250/63a; DNA-SH-1Д1250/63a | DNA-1Д1250/63; DNA-P-1Д1250/63; DNA-SH-1Д1250/63 | DNA-1Д630/125a; DNA-P-1Д630/125a; DNA-SH-1Д630/125a | DNA-1Д630/125a; DNA-P-1Д630/125a; DNA-SH-1Д630/125a | DNA-1Д630/125; DNA-P-1Д630/125; DNA-SH-1Д630/125 | DNA-1Д1250/125b; DNA-P-1Д1250/125b; DNA-SH-1Д1250/125b | DNA-1Д1600/90b; DNA-P-1Д1600/90b; DNA-SH-1Д1600/90b | DNA-1Д320/50/1; DNA-P-1Д320/50/1; DNA-SH-1Д320/50/1 | DNA-1Д320/50/2; DNA-P-1Д320/50/2; DNA-SH-1Д320/50/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Diesel engine model** | | YAMZ-238B-14 | | YAMZ-7511.10-10 | | | TMZ-84352.1000010 | | TMZ-8525.1000020 | | | MMZ D-260.1 | | |
| **Engine power, kW/ at $s^{-1}$ (rpm)*** | | 179/24.5 (1500) | | 256/24.5 (1500) | | | 294 / 24.5 (1500) | | 375 / 24.5 (1500) | | | 100 / 28.3 (1700) | 110 / 31.6 (1900) | 88 / 24.2 (1450) |
| **Pump model** | | 1D800-56 | D1250-63b | 1D630-90 | 1D630-90a | 1D1250-63a | 1D1250-63 | 1D630-125a | 1D630-125 | 1D1250-125b | 1D1600-90b | 1D320-50-1 | 1D320-50-1 | 1D320-50-2 |
| **Capacity, $m^3/h$ ($m^3/sec$)*** | | 800 (0.220) | 1050 (0.292) | 630 (0.175) | 550 (0.153) | 1100 (0.306) | 1250 (0.350) | 550 (0.153) | 630 (0.175) | 1030 (0.286) | 1300 (0.361) | 180 | 200 | 320 |
| **Head, m*** | | 56 | 44 | 90 | 74 | 52.5 | 63 | 101 | 125 | 87 | 63 | 74 | 90 | 50 |
| **Pump rotation speed, $s^{-1}$ (rpm)** | | 24.5 (1500) | | | | | | | | | | 28.3 (1700) | 31.6 (1900) | 24.2 (1450) |
| **Maximum suction pressure, MPa (bar)** | | 0.3 (3) | | | | | | | | | | | | |
| **Power, kW** | **rated** | 150 | 150 | 205 | 155 | 195 | 260 | 245 | 310 | 350 | 275 | 53 | 72 | 60 |
| | **maximum** | 166 | 175 | 230 | 185 | 220 | 290 | 282 | 365 | 360 | 315 | 75 | 100 | 70 |
| **Specific ground pressure for a skid version, MPa ($kgf/cm^2$)** | | 0.1 (1.0) | | | | | | | | | | | | |
| **Maximum sound level at 1 m distance, dBA** | | 104 | | | | | | | | | | | | |
| **Maximum NPSH, m** | | 5.0 | 6.2 | 5.5 | 5.8 | 6.1 | 6.0 | 5.6 | 5.5 | 6.2 | 7.2 | 2.5 | 3.0 | 3.5 |
| **Minimum static suction head, m** | | 4.5 | 3.3 | 4.0 | 3.7 | 3.4 | 3.5 | 3.9 | 4.0 | 3.3 | 2.3 | 7.0 | 6.5 | 6.0 |
| **Filling of pump by water using the exhaust gas unit, seconds** | | 200 | | | | | | | | | | | | |
| **Fuel tank capacity, liters** | | 400 | | 600 | | | | | | | | 300 | | 200 |
| **Hourly fuel consumption at maximum pump power, kg/h** | | 38 | | 46?8 | | | 63 | | 75 | | | 17 | 22 | 16 |

## TECHNICAL DATA

| | | DNA-1D320/50/2; DNA-P-1D320/50/2; DNA-SH-1D320/50/2 | DNA-1D320/50/2; DNA-P-1D320/50/2; DNA-SH-1D320/50/2 | DNA-1D320/50/2; DNA-P-1D320/50/2; DNA-SH-1D320/50/2 | DNA –1D500/63b; DNA-P-1D500/63b; DNA-SH-1D500/63b | DNA-1D320/50/1; DNA-P-1D320/50/1; DNA-SH-1D320/50/1 | DNA-1D320/50/2; DNA-P-1D320/50/2; DNA-SH-1D320/50/2 | DNA-1D500/63a; DNA-P-1D500/63a; DNA-SH-1D500/63a | DNA-1D800/56b; DNA-P-1D800/56b; DNA-SH-1D800/56b | DNA-1D320/50/2; DNA-P-1D320/50/2; DNA-SH-1D320/50/2 | DNA-1D500/63; DNA-P-1D500/63; DNA-SH-1D500/63 | DNA-1D800/56a; DNA-P-1D800/56a; DNA-SH-1D800/56a | DNA-1D250/125; DNA-P-1D250/125; DNA-SH-1D250/125 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Diesel engine model** | | MMZ D-260.1 | | | MMZ D-260.9 | MMZ D-260.4 | | MMZ D-260.4 | | MMZ D-260.7S | | | MMZ D-245-35 |
| **Engine power, kW/ at $s^{-1}$ (rpm)*** | | 88 / 24.2 (1450) | 90 / 25.5 (1550) | 100 / 27.5 (1650) | 93 / 24.2 (1450) | 141 / 35 (2100) | 139 / 32.5 (1950) | 110 / 24.2 (1450) | | 180 / 33.3 (2000) | 134 / 24.2 (1450) | | 77 / 35 (2100) |
| **Pump model** | | 1D320-50-2 | 1D320-50-2 | 1D320-50-2 | 1D500-63b | 1D320-50-1 | 1D320-50-2 | 1D500-63a | 1D800-56b | 1D320-50-2 | 1D500-63 | 1D800-56a | 1D250-125 |
| **Capacity, $m^3/h$** | | 315 | 300 | 315 | 400 | 240 | 315 | 450 | 700 | 400 | 500 | 740 | 200 |
| **Head, m*** | | 50 | 62 | 71 | 44 | 115 | | 53 | 40 | 100 | 63 | 48 | 60 |
| **Pump rotation speed, $s^{-1}$ (rpm)** | | 24.2 (1450) | 25.5 (1550) | 27.5 (1650) | 24.2 (1450) | 35 (2100) | 32.5 (1950) | 24.2 (1450) | | 33.3 (2000) | 24.2 (1450) | | 35 (2100) |
| **Maximum suction pressure, MPa (bar)** | | 0.3 (3) | | | | | | | | | | | |
| **Power, kW** | **nominal** | 60 | 65 | 88 | 70 | 115 | 120 | 87 | 100 | 145 | 113 | 120 | 49 |
| | **maximal** | 70 | 80 | 100 | 80 | 140 | 135 | 100 | 110 | 180 | 142 | 140 | 58 |
| **Specific ground pressure for a skid version, MPa ($kgf/cm^2$)** | | 0.1 (1.0) | | | | | | | | | | | |
| **Maximum sound level at 1 m distance, dBA** | | 104 | | | | | | | | | | | |
| **Maximum NPSH, m** | | 3.5 | 3.5 | 4.0 | 5.0 | 3.5 | 5.0 | 4.8 | 5.2 | 6.5 | 4.5 | 5.1 | 4.5 |
| **Minimum static suction head, m** | | 6.0 | 6.0 | 6.0 | 4.5 | 6.0 | 4.5 | 4.7 | 4.3 | 3.0 | 5.0 | 4.4 | 5.0 |
| **Filling of pump by water using the exhaust gas unit, seconds** | | 200 | | | | | | | | | | | |
| **Fuel tank capacity, liters** | | 300 | | | 400 | | | 400 | | 500 | | | 180 |
| **Hourly fuel consumption at maximum pump power, kg/h** | | 16 | 18 | 22 | 18 | 31 | 30 | 22 | 25 | 40 | 32 | 31 | 13 |

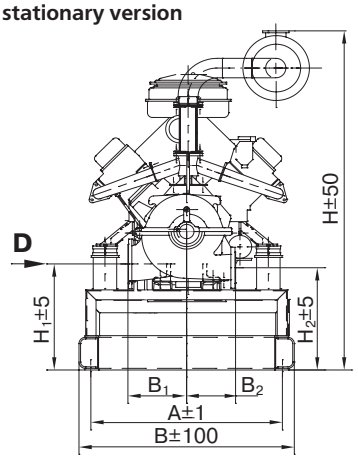
* Performance is given at rated conditions.

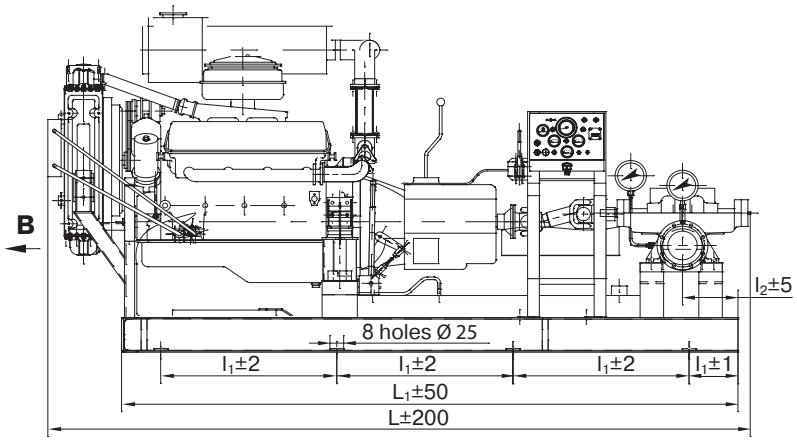
Notes:

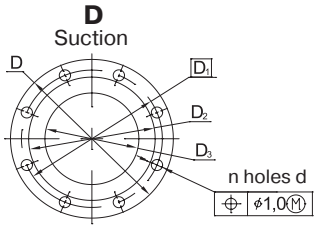
1. The basic parameters are given for the unit operation with water at a temp. of 293K (20 °C) and density of 1000 $kg/m^3$ at atmospheric pressure of 1 bar (750 mmHg). The static suction head value is given for a standard suction pipe
2. The discharge pressure (head) deviation within entire range is ± 10% off the rated value given in Table 1.3
3. Other brands of the diesel engines are available upon the customer request
4. Other pump models are available upon the customer request
5. The fuel tank capacity and its location may vary depending on the customer requirements
6. Hourly fuel consumption is approximate and given for reference only

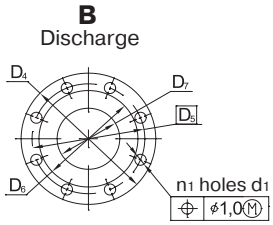
## OVERALL DIMENSIONS

**DNA,
stationary version**

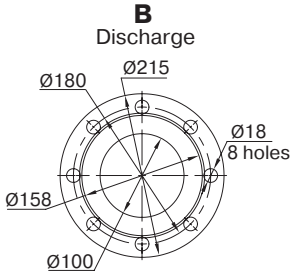


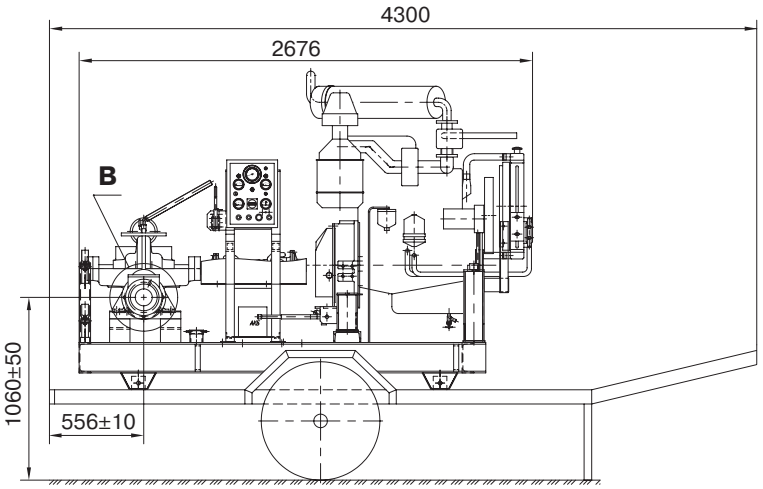



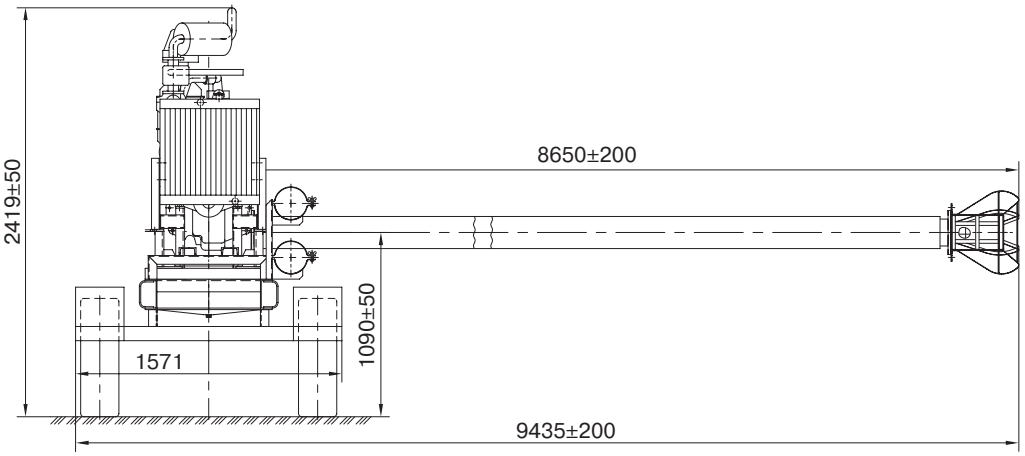




**DNA–SH–200/60,
version on trailer**



## OVERALL DIMENSIONS

| DNA unit type | Motor type | Dimensions, mm | | | | | | | | | | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | B1 | B2 | L | L1 | l | l1 | l2 | H | H1 | H2 | D | D1 | D2 | D3 | D4 | D5 | D6 | D7 | d | d1 | n | n1 | |
| DNA-1D200/90 | YAMZ-236M2-4 | 1080 | 1310 | 280 | 250 | 3250 | 3150 | 225 | 900 | 250 | 1880 | 545 | 545 | 260 | 225 | 202 | 150 | 215 | 180 | 158 | 100 | 18 | 18 | 8 | 8 | 1750 |
| DNA-1D200/90a | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D250/125 | YAMZ-238M2-6 | | | 300 | | 3470 | | | | | | | 525 | | | | | | | | | | | | | 1770 |
| DNA-1D250/125a | YAMZ-236M2-4 | | | | | 3250 | | | | | | | | | | | | | | | | | | | | |
| DNA-1D315/50 | | | | | 300 | | | | | | | 580 | 580 | 315 | 280 | 258 | 200 | 280 | 240 | 212 | 150 | | | | | 1793 |
| DNA-1D315/71 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D315/71a | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D500/63 | YAMZ-238Б-14 | | | 420 | 350 | 3430 | | | | 370 | 2050 | 645 | 585 | 370 | 335 | 312 | 250 | 280 | 240 | 212 | | 18 | 22 | 12 | 12 | 2472 |
| DNA-1D500/63a | YAMZ-238M2-10 | | | | | 3390 | | | | | 2030 | | | | | | | | | | | | | | | 2430 |
| DNA-1D500/63b | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D630/90 | YAMZ-7511.10 | | | 500 | 500 | 3620 | | | | | 2120 | 650 | 590 | | | | | 335 | 295 | 268 | 200 | | | | | 3121 |
| DNA-1D630/90a | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D630/90b | YAMZ-238Б-14 | | | | | 3440 | | | | | 2050 | 625 | 565 | | | | | | | | | | | | | 2542 |
| DNA-1D630/125 | TMZ-8525.10 | | 1400 | | 400 | 3750 | 3560 | 205 | 1050 | 355 | 2270 | 645 | 575 | | | | | 280 | 240 | 212 | 150 | | 22 | | 8 | 3426 |
| DNA-1D630/125a | TMZ-84352.10 | | 1380 | | | 3790 | | | | 370 | 2130 | 625 | 555 | | | | | | | | | | | | | 3160 |
| DNA-1D800/56 | YAMZ-238Б-14 | | 1310 | 480 | | 3440 | 3150 | 225 | 900 | | 2050 | 655 | 595 | 435 | 395 | 365 | 300 | 335 | 295 | 268 | 200 | | | | | 2578 |
| DNA-1D800/56a | YAMZ-238M2-10 | | | | | 3400 | | | | | 2030 | | | | | | | | | | | | | | | 2530 |
| DNA-1D800/56b | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D1250/63 | TMZ-84352.10 | | 1380 | 500 | 450 | 3810 | 3560 | 205 | 1050 | | 2130 | | 615 | 485 | 445 | 415 | 350 | 390 | 350 | 320 | 250 | 22 | | 12 | 12 | 3162 |
| DNA-1D1250/63a | YAMZ-7511.10 | | 1310 | | | 3640 | 3150 | 225 | 900 | 350 | 2120 | | | | | | | | | | | | | | | 3386 |
| DNA-1D1250/63b | YAMZ-238Б-14 | | | | | 3460 | | | | 370 | 2100 | | | | | | | | | | | | | | | 2835 |
| DNA-1D1250/125b | TMZ-8525.10 | | 1400 | 600 | | 4020 | 3750 | | 1100 | 405 | 2340 | 685 | 585 | | | | | 335 | 295 | 268 | 200 | | | | | 3936 |
| DNA-1D1600/90b | | | | | 600 | | | | | | | | 605 | | | | | 460 | 410 | 370 | 300 | | 26 | | | 3586 |
| DNA-2D2000/21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D320/50/1 | MMZ D-260.1 | 1080 | 1250 | 492 | 474 | 3090 | 3000 | 150 | 900 | 250 | 2440 | 668 | 335 | 295 | 268 | 200 | 200 | 280 | 240 | 212 | 150 | 22 | 22 | 12 | 8 | 1650 |
| DNA-1D320/50/2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D500/63b | MMZ D-260.9 | | | 420 | 350 | 3490 | 3230 | 265 | | 345 | 2480 | 630 | 370 | 335 | 312 | 250 | 250 | | | | | 18 | | | | 1930 |
| DNA-1D320/50/1 | MMZ D-260.4 | | | 492 | 474 | 3250 | 3000 | 150 | | 250 | 2440 | 668 | 335 | 295 | 268 | 200 | 200 | | | | | 22 | | | | 1770 |
| DNA-1D320/50/2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNA-1D500/63a | | | | 420 | 350 | 3490 | 3230 | 265 | | 345 | 2480 | 630 | 370 | 335 | 312 | 250 | 250 | | | | | 18 | | | | 1930 |
| DNA-1D800/56b | | | | 480 | 400 | | | | | | | 656 | 596 | 395 | 365 | 300 | 300 | 335 | 295 | 268 | 200 | 22 | | | | |
| DNA-1D320/50/2 | MMZ D-260.7C | | | 492 | 474 | 3250 | 3000 | 150 | | 250 | 2440 | 668 | | 295 | 268 | 200 | 200 | 280 | 240 | 212 | 150 | | | | | 1770 |
| DNA-1D500/63 | | | | 420 | 350 | 3490 | 3230 | 265 | | 345 | 2480 | 630 | 570 | 335 | 312 | 250 | 250 | | | | | 18 | | | | 1980 |
| DNA-1D800/56a | | | | 480 | 400 | | | | | | | 656 | 596 | 435 | 395 | 365 | 300 | 335 | 295 | 268 | 200 | 22 | | | | 2070 |
| DNA-1D250/125 | MMZ D-245-35 | - | 818 | 300 | 250 | 2592 | 2400 | - | - | 380 | 1885 | 556 | 536 | 260 | 225 | 202 | 150 | 215 | 180 | 158 | 100 | 18 | 18 | 8 | | 1300 |

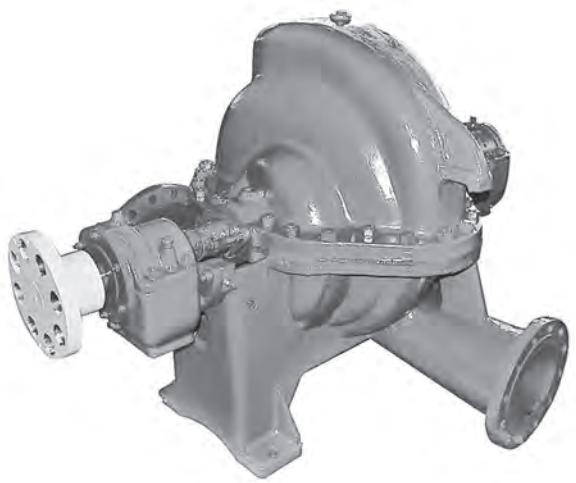
Overall dimensions and installation clearance may vary depending on the customer requirements and components of the unit requested by the customer.

# CN SERIES
## CENTRIFUGAL MULTISTAGE PUMPS

### APPLICATION

The centrifugal multistage pumps of the CN series are intended for pumping of water and similar liquids by chemical properties and viscosity:

- max temperature: +100 °C
- max solids content: 0.05 % by weight
- max solids size: 0.2 mm.



### DESIGN

Centrifugal, horizontal pump with volute casing. Available in two- and four-stage versions (CN 400-210); single-entry impeller, gland sealing, ball bearings. The pump may be driven by electric motor or diesel engine (CN 400-101 model).

### PUMP SERIES DESIGNATION

**CN 1000–180a–3**

CN XXXX - XXX x - X

Pump series

Capacity, $m^3/h$

Head, m

Type of impeller trimming (not specified for standard versions)

Model version

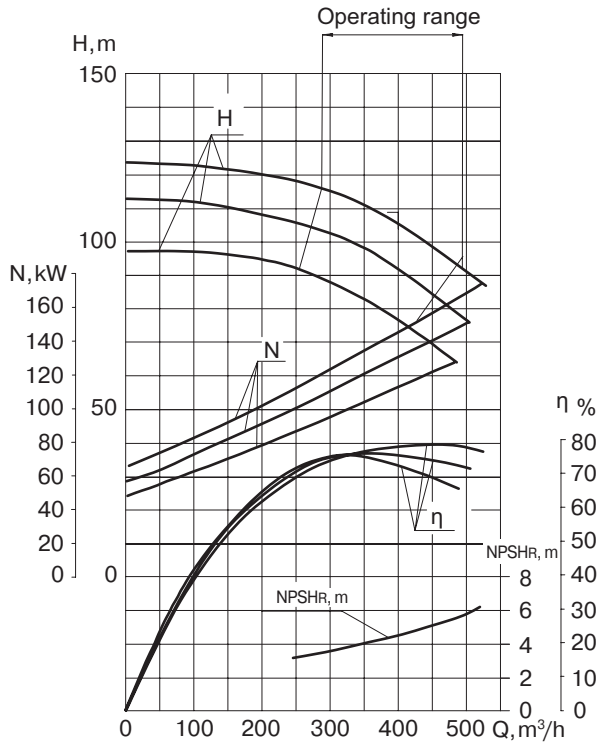
For a complete pumping units that includes motor and supplementary equipment the «A» index is added in designation before the pump series mark "CN". For example: ACN 1000-180a-3.

**TECHNICAL DATA**

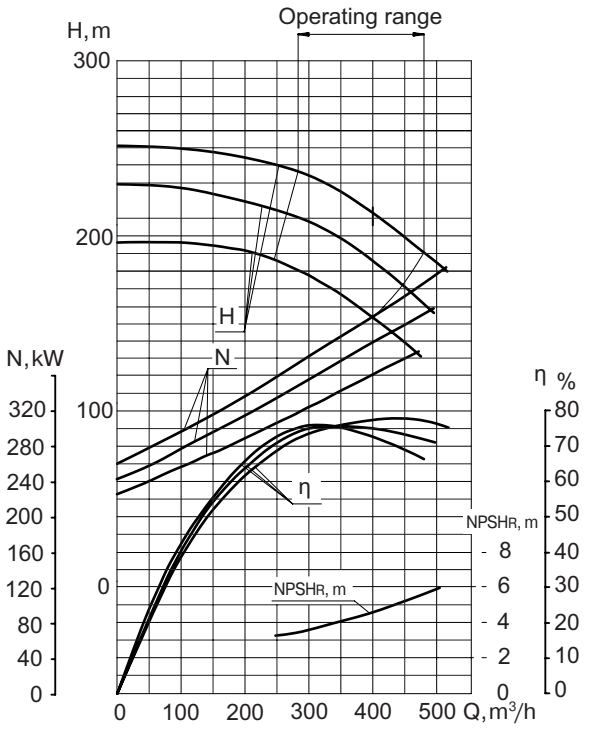
| Pump | Capacity, $m^3/h$ | Head, m | Rotation speed, rpm | Power, kW |
|---|---|---|---|---|
| CN 400-105 | 400 | 105 | 1500 | 200 |
| CN 400-105a | 380 | 96 | 1500 | 160 (200) |
| CN 400-105b | 360 | 83 | 1500 | 132 (200) |
| CN 400-210 | 400 | 210 | 1500 | 400 |
| CN 400-210a | 380 | 192 | 1500 | 315 |
| CN 400-210b | 360 | 166 | 1500 | 250 |
| CN 1000-180-3 | 1000 | 180 | 1500 | 630 |
| CN 1000-180a-3 | 900 | 157 | 1500 | 500 |

## PERFORMANCE CURVE

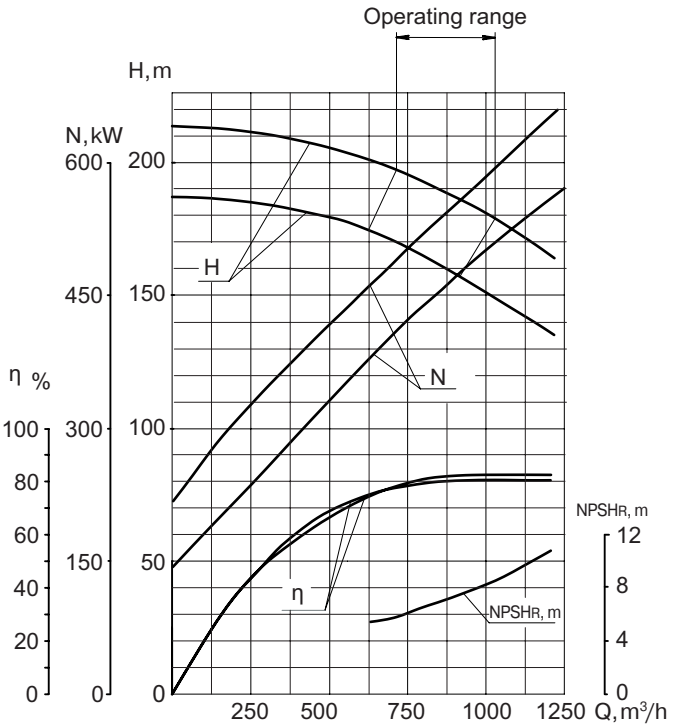
**CN 400–105**




**CN 400–210**

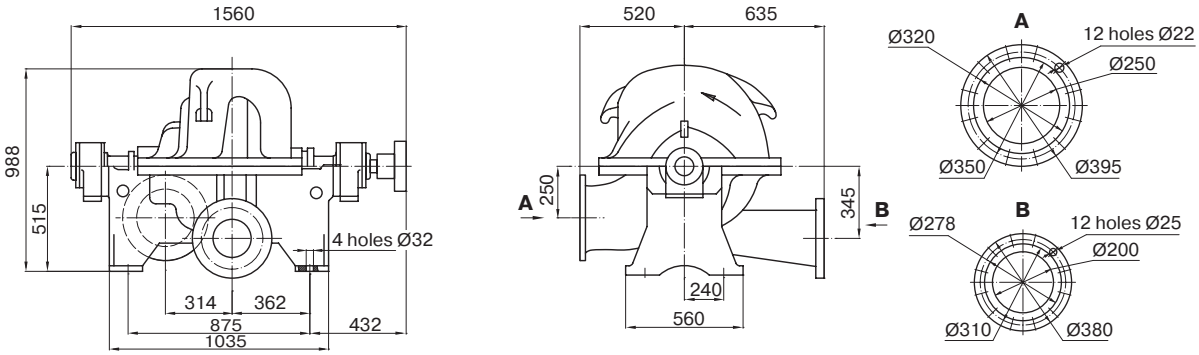



**CN 1000–180–3**

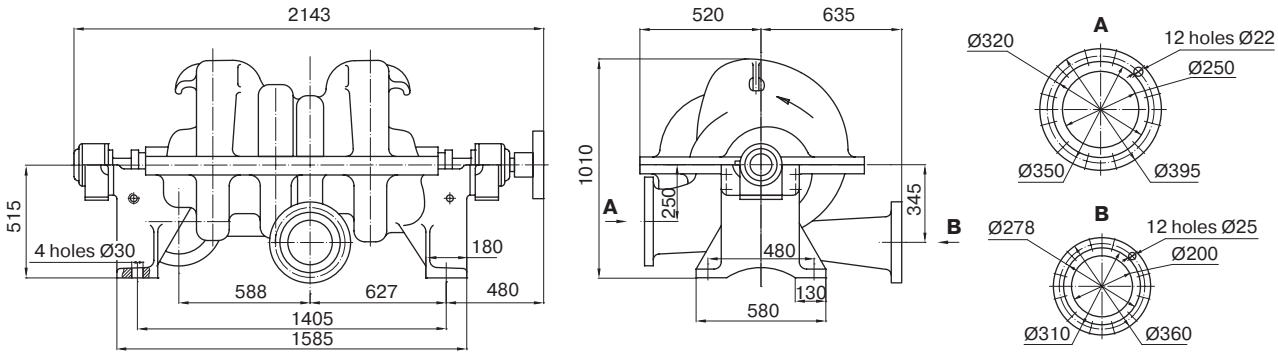


## OVERALL DIMENSIONS

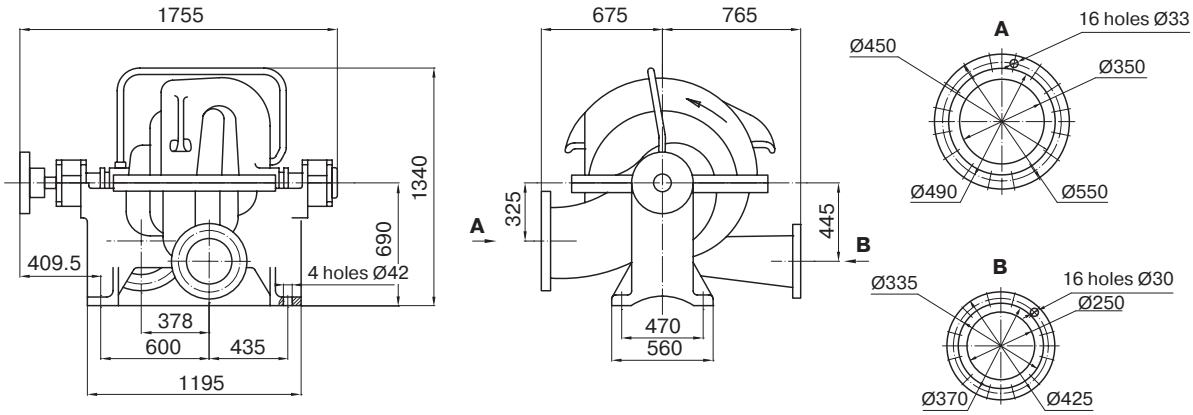
### CN 400–105




### CN 400–210




### CN 1000–180–3



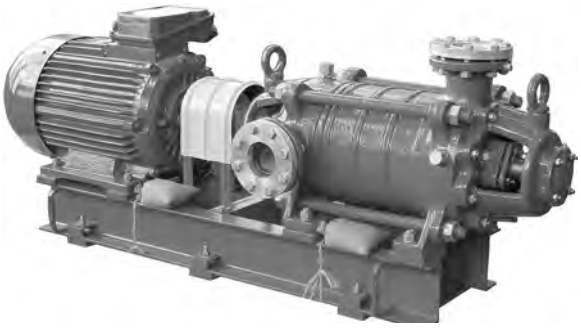
# CNS/CNSg SERIES
## CENTRIFUGAL MULTISTAGE PUMPS

### APPLICATION

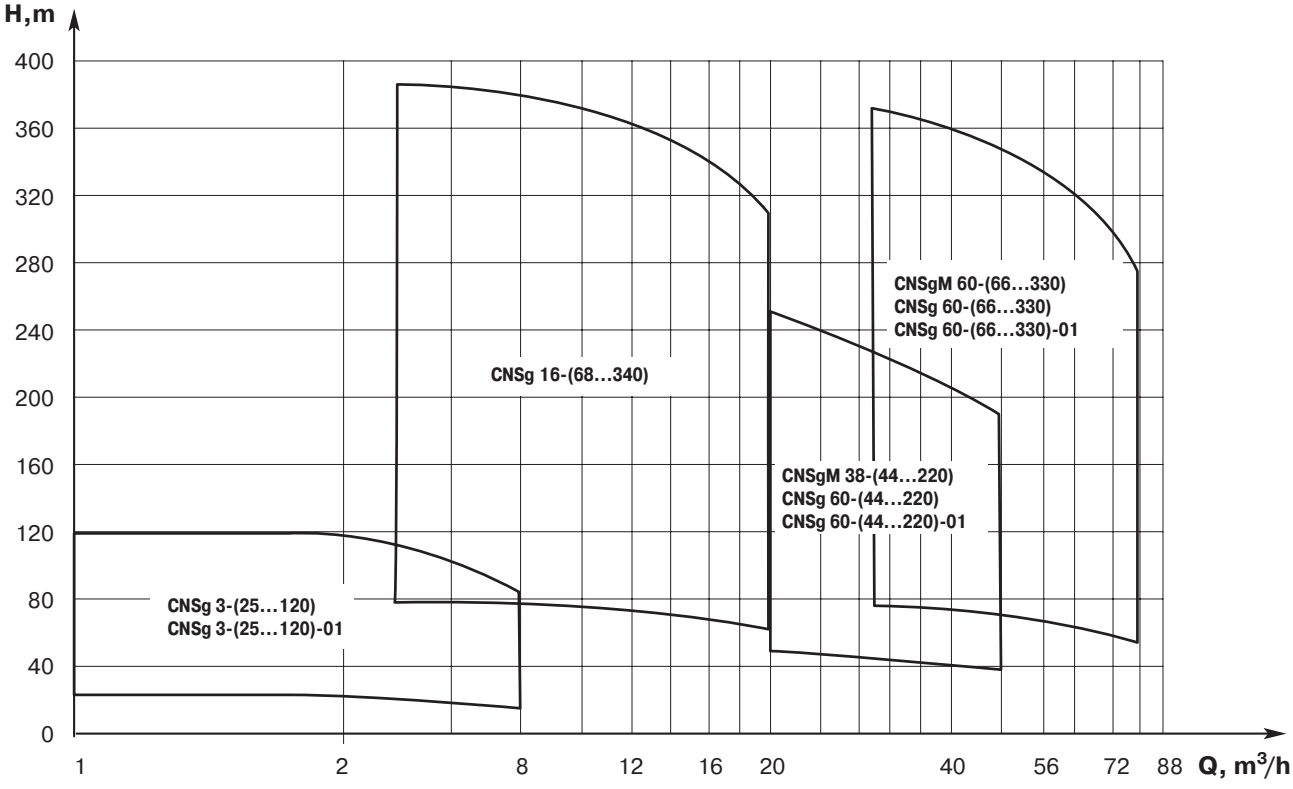
The centrifugal multistage pumps of the CNSg series are intended for feed water supply to the steam boilers at low power combined heating and power plants (CHPP) and in the municipal heating and hot water supply systems.

- Hydrogen index (pH): 7.0 - 8.5
- Max temperature: + 105 °C
- Max solids content: 0,1 %
- Max solids size: 0.1 mm
- Max microhardness: 1,47 GPa (14700 kgf/cm$^2$)

The explosion-proof versions of CNSg pumps are available by request.



### PERFORMANCE RANGE



## PUMP SERIES DESIGNATION

**1CNSg 40–44–1**

1 CNSg XX - XX - X

- Model version
- Pump series
- Capacity, $m^3/h$
- Head, m
- Version with an inducer for improved NPSH

**CNSg 38–132–01**

CNSg XX - XXX - XX

- Pump series
- Capacity, $m^3/h$
- Head, m
- Explosion-proof version

## TECHNICAL DATA

| Pump | Capacity, $m^3/h$, ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power, kW | NPSH, m | Minimal efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| CNS 3-25 | 3.0 (0.00083) | 24 | 47.3 (2840) | 0.52 | 4.0 | 38 | 24 |
| CNS 3-25-1 | | | | | | 38 | 25.8 |
| CNS 3-36 | | 36 | | 0.77 | | 38 | 26 |
| CNS 3-36-1 | | | | | | 38 | 28.4 |
| CNS 3-45 | | 48 | | 0.87 | | 41 | 28 |
| CNS 3-45-1 | | | | | | 41 | 31 |
| CNS 3-60 | | 60 | | 1.09 | | 41 | 31 |
| CNS 3-60-1 | | | | | | 41 | 33.5 |
| CNS 3-75 | | 72 | | 1.31 | | 41 | 33.3 |
| CNS 3-75-1 | | | | | | 41 | 37.2 |
| CNS 3-85 | | 84 | | 1.53 | | 45 | 35.3 |
| CNS 3-85-1 | | | | | | 45 | 39.8 |
| CNS 3-100 | | 96 | | 1.74 | | 45 | 36.5 |
| CNS 3-100-1 | | | | | | 45 | 42.4 |
| CNS 3-108 | | 108 | | 1.96 | | 45 | 38.2 |
| CNS 3-108-1 | | | | | | 45 | 45 |
| CNS 3-120 | | 120 | | 2.18 | | 45 | 40 |
| CNS 3-120-1 | | | | | | 45 | 47.5 |

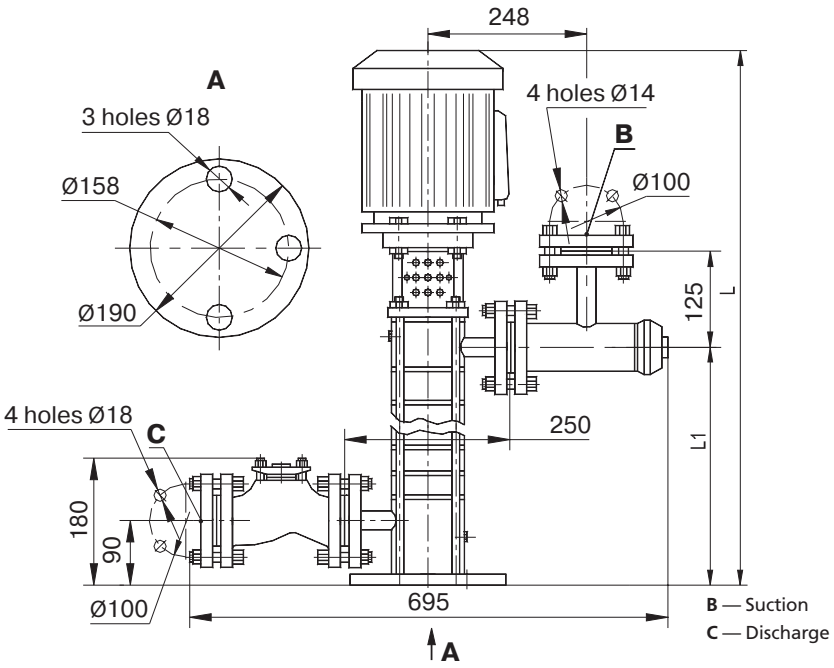
## TECHNICAL DATA

| Pump | Capacity, $m^3/h$ ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power, kW | NPSH, m | Minimal efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| CNSg 16-68 | 16 (0.0044) | 68.0 | 49 (2940) | 7.7 | 3 | 42 | 240 (395) |
| CNSg 16-102 | | 102.0 | | 11.6 | | 42 | 265 (475) |
| CNSg 16-136 | | 136.0 | | 15.4 | | 42 | 290 (510) |
| CNSg 16-170 | | 170.0 | | 18.9 | | 42 | 315 (550) |
| CNSg 16-204 | | 204.0 | | 22.6 | | 43 | 340 (595) |
| CNSg 16-238 | | 238.0 | | 26.4 | | 43 | 365 (640) |
| CNSg 16-272 | | 272.0 | | 28.9 | | 44 | 390 (670) |
| CNSg 16-306 | | 306.0 | | 32.6 | | 45 | 415 (690) |
| CNSg 16-340 | | 340.0 | | 36.2 | | 45 | 440 (720) |
| CNSg 38-44 | 38 (0.0106) | 44.0 | 49 (2940) | 8.2 | 3.6 | 67 | 251 |
| CNSg 38-44-01 | | | | | | | |
| CNSg 38-66 | | 66.0 | | 12.4 | | 67 | 281 |
| CNSg 38-66-01 | | | | | | | |
| CNSg 38-88 | | 88.0 | | 16.2 | | 68 | 311 |
| CNSg 38-88-01 | | | | | | | |
| CNSg 38-110 | | 110.0 | | 20.0 | | 69 | 341 |
| CNSg 38-110-01 | | | | | | | |
| CNSg 38-132 | | 132.0 | | 23.9 | | 69 | 371 |
| CNSg 38-132-01 | | | | | | | |
| CNSg 38-154 | | 154.0 | | 27.9 | | 69 | 401 |
| CNSg 38-154-01 | | | | | | | |
| CNSg 38-176 | | 176.0 | | 30.0 | | 69 | 431 |
| CNSg 38-176-01 | | | | | | | |
| CNSg 38-198 | | 198.0 | | 35.9 | | 69 | 461 |
| CNSg 38-198-01 | | | | | | | |
| CNSg 38-220 | | 220.0 | | 39.9 | | 69 | 491 |
| CNSg 38-220-01 | | | | | | | |
| CNSg 38-44 | | 44.0 | | 8.2 | | 67 | 220 |
| CNSg 38-66 | | 66.0 | | 12.4 | | 67 | 240 |
| CNSg 38-88 | | 88.0 | | 16.2 | | 68 | 260 |
| CNSg 38-110 | | 110.0 | | 20.0 | | 69 | 280 |
| CNSg 38-132 | | 132.0 | | 23.9 | | 69 | 300 |
| CNSg 38-154 | | 154.0 | | 27.9 | | 69 | 320 |
| CNSg 38-176 | | 176.0 | | 30.0 | | 69 | 340 |
| CNSg 38-198 | | 198.0 | | 35.9 | | 69 | 360 |
| CNSg 38-220 | | 220.0 | | 39.9 | | 69 | 380 |

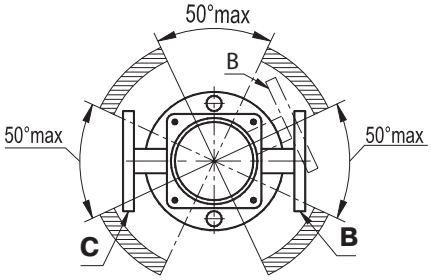
## TECHNICAL DATA

| Pump | Capacity, $m^3/h$ ($m^3/sec$) | Head, m | Rotation speed, $s^{-1}$ (rpm) | Power, kW | NPSH, m | Minimal efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|
| CNSg 60-66 | 60 (0.0167) | 66.0 | 49 (2940) | 18.8 | 4.5 | 70 | 280 |
| CNSg 60-66-01 | | | | | | 70 | |
| CNSg 60-99 | | 99.0 | | 28.9 | | 70 | 330 |
| CNSg 60-99-01 | | | | | | 70 | |
| CNSg 60-132 | | 132.0 | | 37.7 | | 70 | 380 |
| CNSg 60-132-01 | | | | | | 70 | |
| CNSg 60-165 | 60 (0.0167) | 165.0 | 49 (2940) | 44.4 | 4.5 | 71 | 430 |
| CNSg 60-165-01 | | | | | | | |
| CNSg 60-198 | | 198.0 | | 53.7 | | 71 | 480 |
| CNSg 60-198-01 | | | | | | | |
| CNSg 60-231 | | 231.0 | | 64.4 | | 71 | 530 |
| CNSg 60-231-01 | | | | | | | |
| CNSg 60-264 | | 264.0 | | 72.6 | | 71 | 580 |
| CNSg 60-264-01 | | | | | | | |
| CNSg 60-297 | | 297.0 | | 79.6 | | 71 | 630 |
| CNSg 60-297-01 | | | | | | | |
| CNSg 60-330 | | 330.0 | | 90.9 | | 71 | 680 |
| CNSg 60-330-01 | | | | | | | |
| CNSg 60-66 | | 66 | | 18.8 | | 70 | 280 |
| CNSg 60-99 | | 99 | | 28.9 | | 70 | 330 |
| CNSg 60-132 | | 132 | | 37.7 | | 70 | 380 |
| CNSg 60-165 | | 165 | | 44.4 | | 71 | 430 |
| CNSg 60-198 | | 198 | | 53.7 | | 71 | 480 |
| CNSg 60-231 | | 231 | | 64.4 | | 71 | 530 |
| CNSg 60-264 | | 264 | | 72.6 | | 71 | 580 |
| CNSg 60-297 | | 297 | | 79.6 | | 71 | 630 |
| CNSg 60-330 | | 330 | | 90.9 | | 71 | 680 |

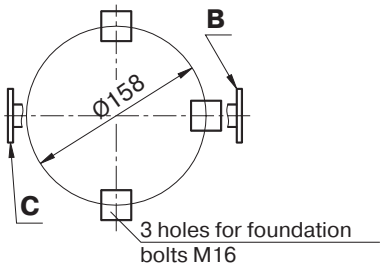
## UNIT OVERALL DIMENSIONS & TECHNICAL DATA




Admissible suction/discharge flanges location

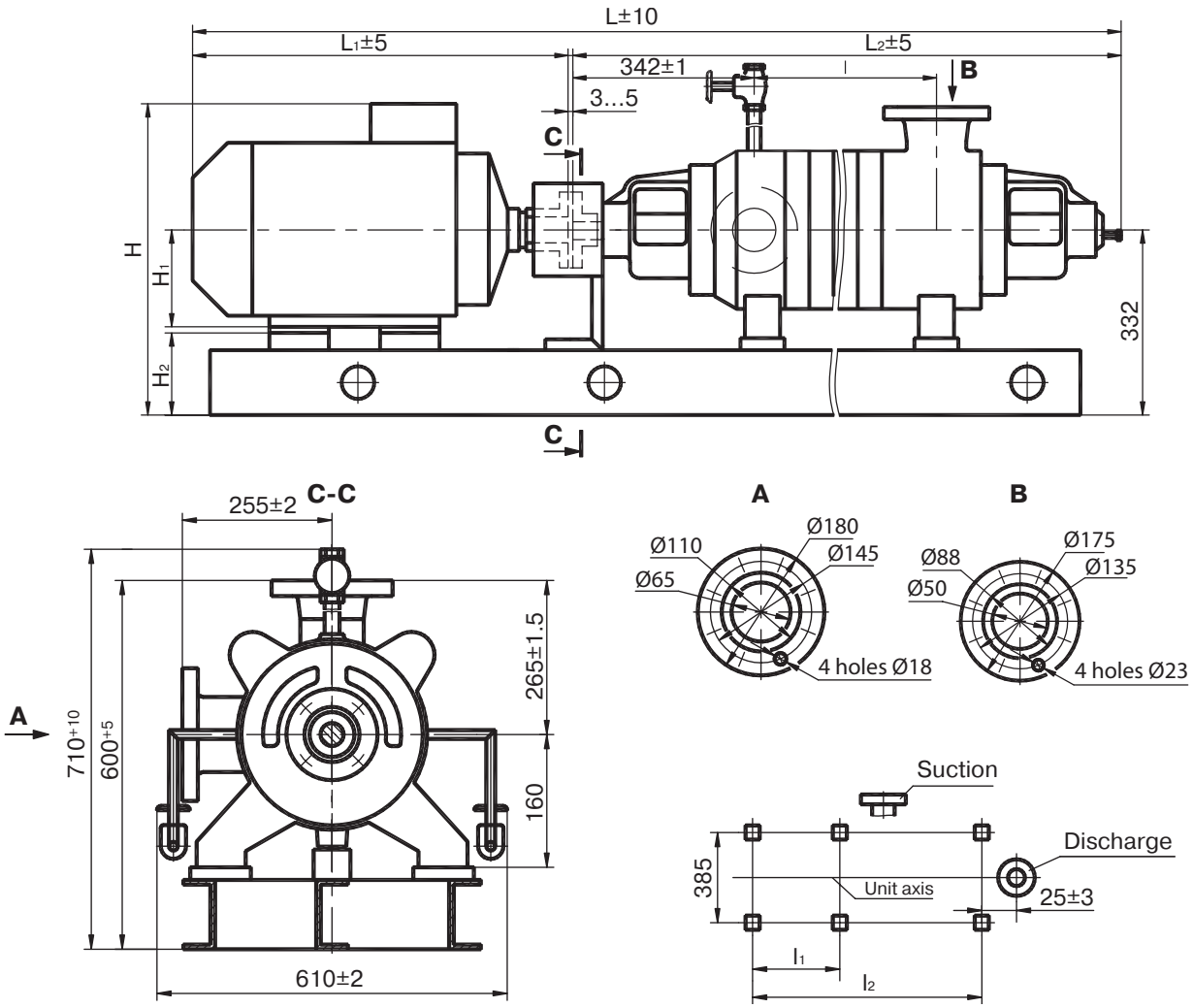



Layout of holes for foundation bolts




| Unit | Capacity, m³/h | Head, m | Rotation speed, rpm | NPSH, m | Operat. temp. °C | Max inlet pressure, kgf/cm² | Inlet internal diameter, mm | Outlet internal diameter, mm | Overall dimensions, mm | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | L | L1 |
| ACNS 3-25 | 3 | 24 | 3000 | 4 | 105 | 0.25 | 32 | 32 | 669 | 228 |
| ACNS 3-36 | | 36 | | | | | | | 714 | 273 |
| ACNS 3-45 | | 48 | | | | | | | 759 | 318 |
| ACNS 3-60 | | 60 | | | | | | | 804 | 363 |
| ACNS 3-75 | | 72 | | | | | | | 849 | 409 |
| ACNS 3-85 | | 84 | | | | | | | 894 | 453 |
| ACNS 3-100 | | 96 | | | | | | | 939 | 498 |
| ACNS 3-108 | | 108 | | | | | | | 984 | 543 |
| ACNS 3-120 | | 120 | | | | | | | 1029 | 588 |

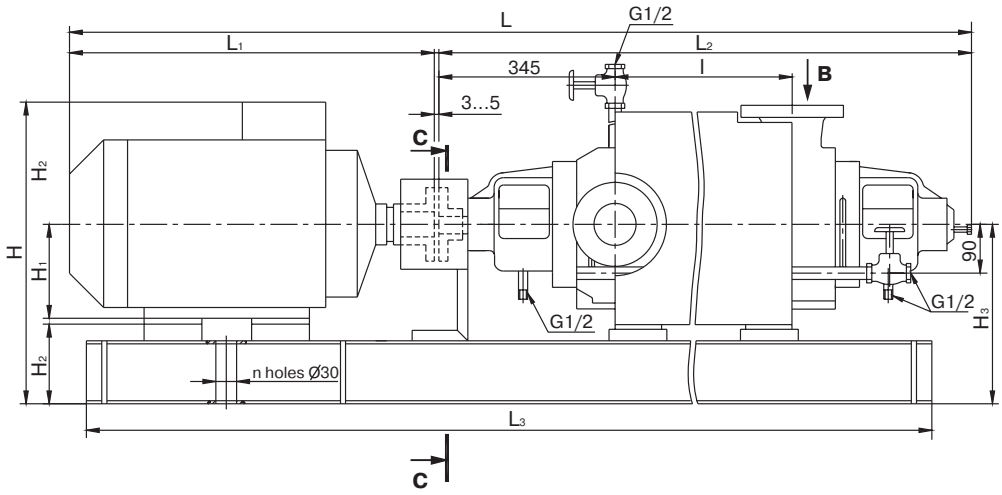
## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

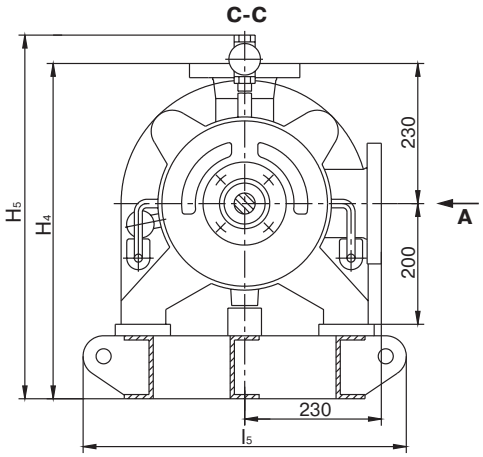


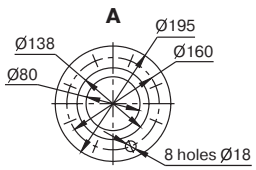

| Unit | Dimensions, mm | | | | | | | | | Electric motor | Power, kW | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | l | $l_1$ | $l_2$ | H | $H_1$ | $H_2$ | | | pump | unit |
| ACNSg 16-68 | 1520 | 505 | 1011 | 194 | 500 | 960 | 498 | 132 | 198 | RA132SB2 | 7.5 | 240 | 390 |
| | 1620 | 605 | | | 615 | 1080 | 560 | 160 | 170 | RA160MA2 | 11 | | 450 |
| ACNSg 16-102 | 1675 | | 1064 | 247 | | 1135 | | | | | | 265 | 475 |
| ACNSg 16-136 | 1730 | | 1117 | 300 | | 1185 | 575 | | | AIR160S2 | 15 | 290 | 510 |
| ACNSg 16-170 | 1820 | 645 | 1170 | 353 | 660 | 1285 | | | | RA160L2 | 18.5 | 315 | 550 |
| ACNSg 16-204 | 1860 | 630 | 1223 | 406 | | 1330 | 590 | 180 | 150 | AIR180S2 | 22 | 340 | 595 |
| ACNSg 16-238 | 1960 | 680 | 1276 | 459 | 710 | 1420 | | | | AIR180M2 | 30 | 365 | 640 |
| ACNSg 16-272 | 2015 | | 1329 | 512 | 735 | 1470 | | | | | | 390 | 670 |
| ACNSg 16-306 | 1970 | 580 | 1382 | 565 | 810 | 1460 | 620 | | | 4AMH180S2 | 37 | 415 | 690 |
| ACNSg 16-340 | 2020 | | 1435 | 618 | | 1520 | | | | | | 440 | 720 |
| ACNSg 16-68 | 1486 | 440 | 1011 | 194 | 500 | 930 | 508 | 132 | 198 | AMU132SV2 | 7.5 | 240 | 395 |
| | 1636 | 620 | | | 615 | 1050 | 530 | 160 | 170 | AMU160MA2 | 11 | | 450 |
| ACNSg 16-102 | 1689 | | 1064 | 247 | | 1105 | | | | | | 265 | 475 |
| ACNSg 16-136 | 1742 | 693 | 1117 | 300 | | 1155 | | | | AMU160MV2 | 15 | 290 | 515 |

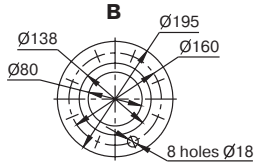
## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

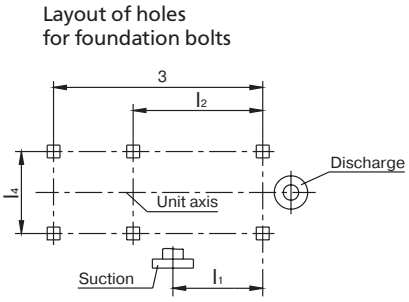
| Unit | Dimensions, mm | | | | | | | | | Electric motor | Power, kW | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | l | $l_1$ | $l_2$ | H | $H_1$ | $H_2$ | | | pump | unit |
| ACNSg 16-170 | 1806 | 730 | 1170 | 353 | 660 | 1255 | 530 | 160 | 170 | AMU160L2 | 18,5 | 315 | 550 |
| ACNSg 16-204 | 1921 | | 1223 | 406 | | 1300 | 570 | 180 | 150 | AMU180M2 | 22 | 340 | 565 |
| ACNSg 16-238 | 2011 | | 1276 | 459 | 810 | 1460 | 660 | 200 | | AMU200LA2 | 30 | 365 | 690 |
| ACNSg 16-272 | 2064 | | 1329 | 512 | | 1520 | | | | | | 390 | 720 |
| ACNSg 16-306 | 2117 | | 1382 | 565 | | 1530 | | | | AMU200LV2 | 37 | 415 | 745 |
| ACNSg 16-340 | 2170 | | 1435 | 618 | | 1590 | | | | | | 440 | 775 |



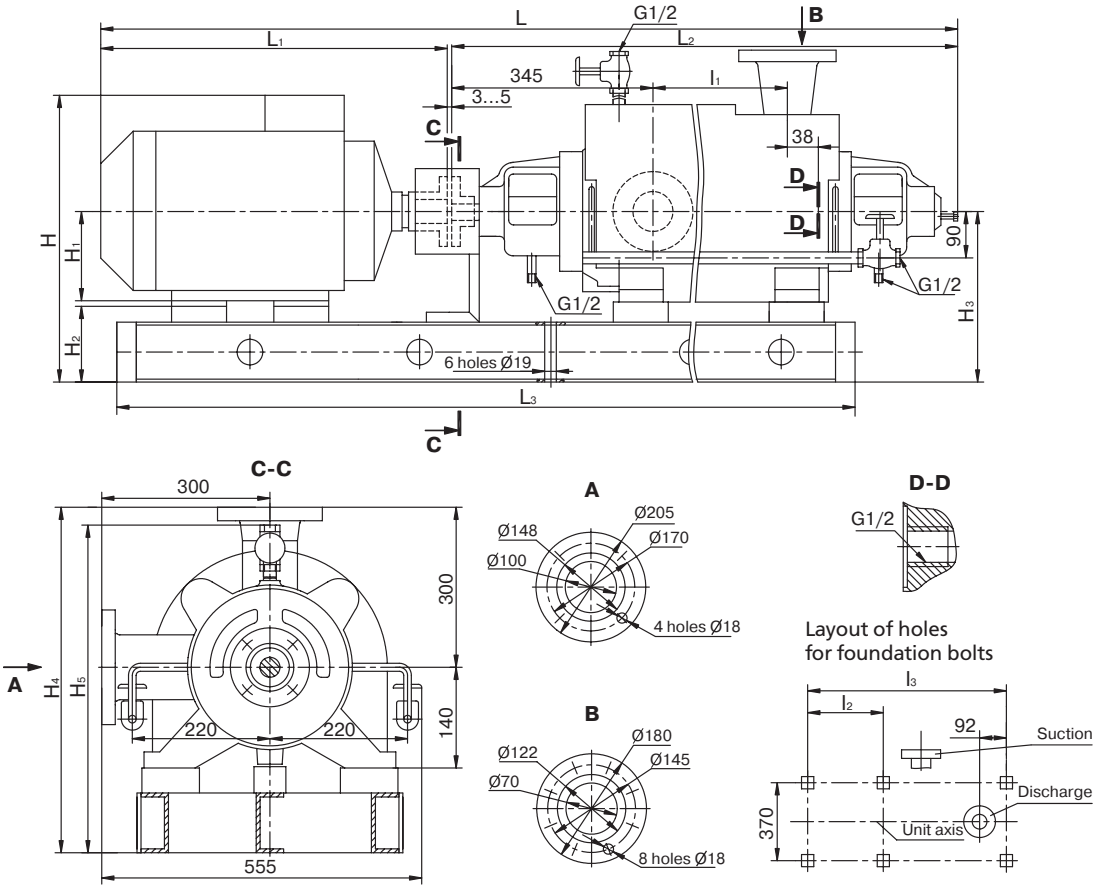




| Unit | Dimensions, mm | | | | | | | | | | | | | | | | number of stages |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | $L_3$ | l | $l_1$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ | H | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ | |
| ACNSg 38-44 | 1380 | 498 | 876 | 1230 | 195 | 38 | - | 570 | 350 | 626 | 561 | 132 | 234 | 366 | 596 | 656 | 4 |
| ACNSg 38-66 | 1615 | 660 | 947 | 1350 | 266 | 109 | | 720 | | | 567 | 160 | 206 | | | | |
| ACNSg 38-88 | 1715 | 690 | 1018 | 1450 | 337 | 180 | | 840 | | | | | | | | | |
| ACNSg 38-110 | 1725 | 630 | 1089 | 1530 | 408 | 248 | 450 | 927 | 280 | 510 | 612 | 180 | 170 | 350 | 580 | 640 | 6 |
| ACNSg 38-132 | 1845 | 680 | 1160 | 1640 | 479 | 319 | 500 | 1009 | | | | | | | | | |
| ACNSg 38-154 | 1920 | | 1231 | 1710 | 550 | 390 | 540 | 1008 | | | | | | | | | |
| ACNSg 38-176 | 1990 | | 1302 | 1780 | 621 | 461 | 570 | 1151 | | | | | | | | | |
| ACNSg 38-198 | 2115 | 735 | 1373 | 1890 | 692 | 532 | 630 | 1262 | | | 637 | 200 | 150 | | | | |
| ACNSg 38-220 | 2230 | 781 | 1444 | 2000 | 763 | 603 | 680 | 1371 | | | | | | | | | |

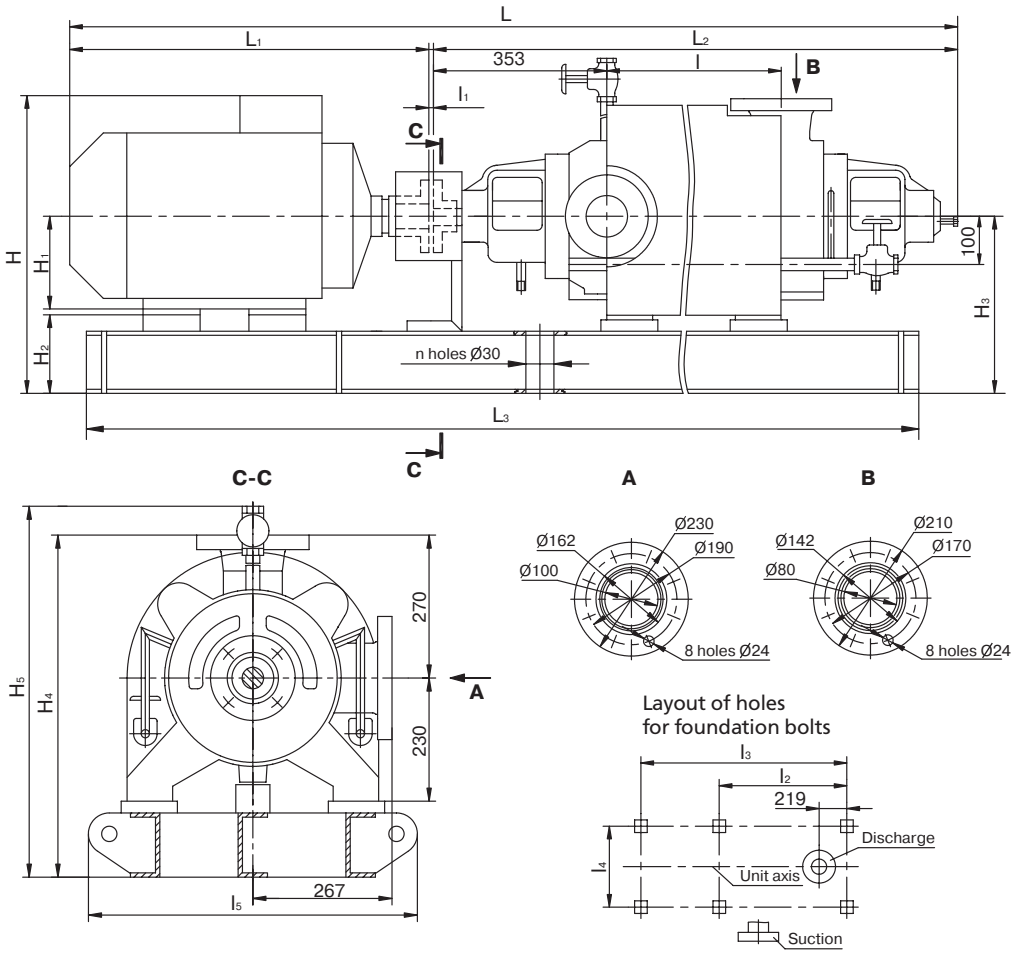
## UNIT OVERALL DIMENSIONS

| Unit | Dimensions, mm | | | | | | | | | | | | | | | | number of stages |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | $L_3$ | l | $l_1$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ | H | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ | |
| ACNSg 38-44-01 | 1710 | 862 | 876 | 1310 | 195 | 38 | - | 570 | 350 | 626 | 705 | 160 | 206 | 366 | 596 | 656 | 3 |
| ACNSg 38-66-01 | 1780 | | 947 | 1380 | 266 | 109 | | 720 | | | | | | | | | |
| ACNSg 38-88-01 | | 756 | 1018 | 1495 | 337 | 180 | | 840 | | | | | | | | | |
| ACNSg 38-88-01 | 1945 | 852 | 1089 | 1570 | 408 | 248 | 450 | 927 | 280 | 510 | 719 | 180 | 170 | 350 | 580 | 640 | 7 |
| ACNSg 38-110-01 | 2075 | 908 | 1160 | 1715 | 479 | 319 | 500 | 1009 | | | 739 | 200 | 150 | | | | |
| ACNSg 38-132-01 | 2145 | | 1231 | 1785 | 550 | 390 | 540 | 1080 | | | | | | | | | |
| ACNSg 38-176-01 | 2215 | | 1302 | 1855 | 621 | 461 | 570 | 1151 | | | | | | | | | |
| ACNSg 38-198-01 | 2330 | 948 | 1373 | 1930 | 692 | 532 | 630 | 1262 | | | | | | | | | |
| ACNSg 38-220-01 | 2430 | 978 | 1444 | 2020 | 763 | 603 | 680 | 1371 | | | 769 | 225 | | 375 | 605 | 665 | |



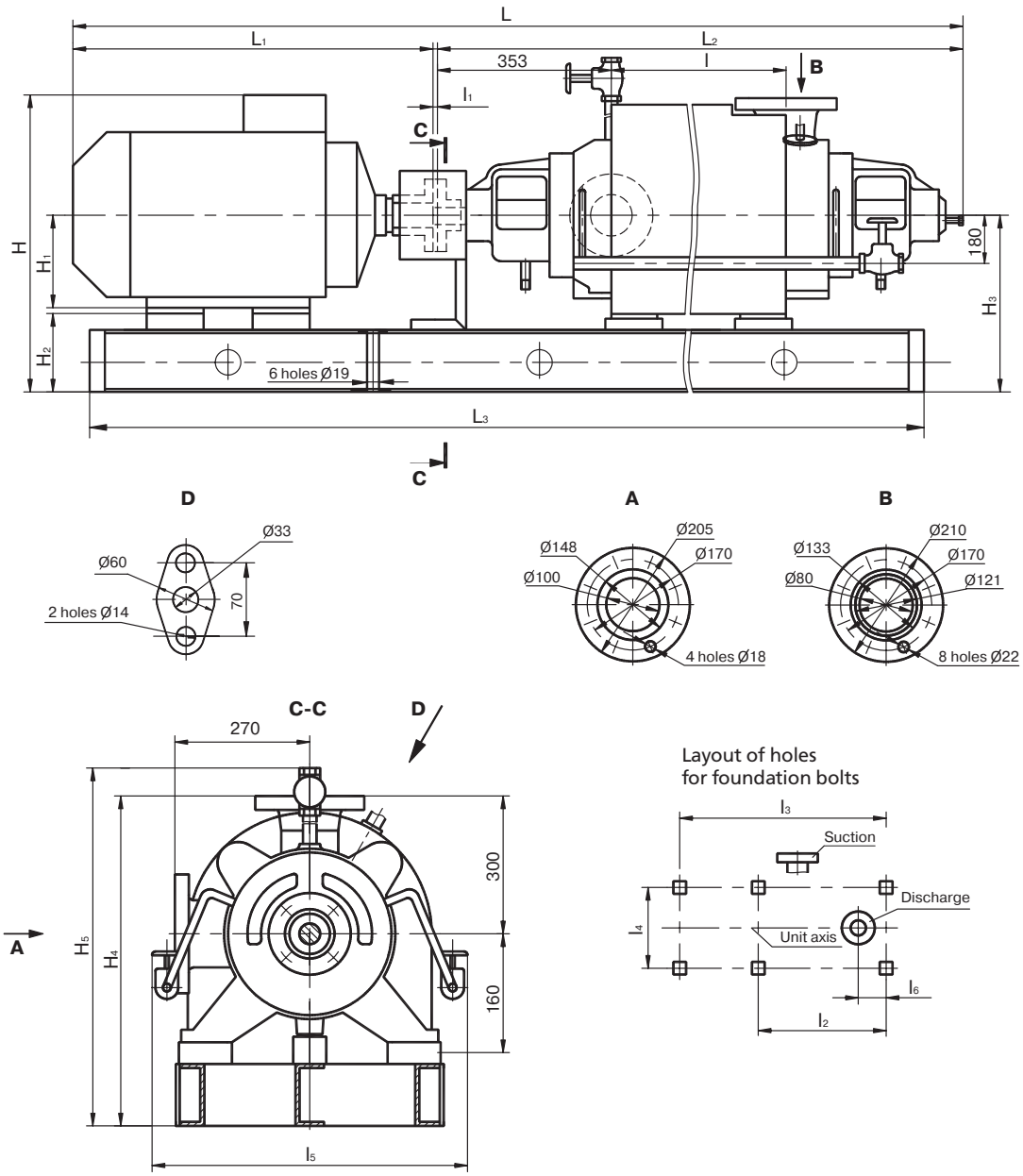

| Unit | Dimensions, mm | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | $L_3$ | $l_1$ | $l_2$ | $l_3$ | H | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ |
| ACNSg 38-44 | 1485 | 605 | 880 | 1205 | 216 | 690 | 1155 | 555 | 160 | 145 | 307 | 610 | 307 |
| ACNSg 38-66 | 1555 | | 945 | 1235 | 281 | 655 | 1185 | | | | | | |
| ACNSg 38-88 | 1645 | 630 | 1010 | 1335 | 346 | 690 | 1285 | 570 | 180 | 125 | - | - | - |
| ACNSg 38-110 | 1710 | | 1075 | 1400 | 411 | | 1350 | | | | 307 | 307 | 307 |
| ACNSg 38-132 | 1890 | | 1140 | 1400 | 476 | | 1415 | 567 | | 166 | | | |
| ACNSg 38-154 | 1955 | 680 | 1205 | 1505 | 541 | | 1480 | | | | | | |
| ACNSg 38-176 | 2150 | | 1270 | 1570 | 606 | | 1545 | | | | | | |
| ACNSg 38-198 | 2150 | 810 | 1335 | 1795 | 671 | 820 | 1745 | 702 | 225 | 115 | 352 | 652 | 942 |
| ACNSg 38-220 | 2215 | | 1400 | 1860 | 736 | | 1810 | | | | | | |

## UNIT OVERALL DIMENSIONS




| Unit | Dimensions, mm | | | | | | | | | | | | | | | | number of stages |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | $L_3$ | l | $l_1$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ | H | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ | |
| ACNSg 60-66 | 1580 | 630 | 945 | 1295 | 220 | 3...5 | - | 600 | 406 | 635 | 648 | 180 | 206 | 386 | 655 | 760 | 4 |
| ACNSg 60-99 | 1710 | 680 | 1025 | 1410 | 300 | | | 710 | | | | | | | | | |
| ACNSg 60-132 | 1895 | 781 | 1105 | 1570 | 380 | 7...9 | 350 | 920 | 430 | 660 | 667 | 200 | 180 | 380 | 650 | 755 | 6 |
| ACNSg 60-165 | 2030 | 835 | 1185 | 1670 | 460 | | 450 | 970 | | | 692 | 225 | 155 | | | | |
| ACNSg 60-198 | 2110 | | 1265 | 1750 | 540 | | 500 | 1050 | | | | | | | | | |
| ACNSg 60-231 | 2290 | 935 | 1345 | 1930 | 620 | 7...9 | 590 | 1190 | 406 | 635 | 782 | 250 | 150 | 400 | 670 | 775 | 6 |
| ACNSg 60-264 | 2370 | | 1425 | 2010 | 700 | | 670 | 1265 | | | | | | | | | |
| ACNSg 60-297 | 2450 | | 1505 | 2130 | 780 | | 700 | 1350 | | | | | | | | | |
| ACNSg 60-330 | 2675 | 1080 | 1585 | 2250 | 860 | | 800 | 1465 | 457 | 685 | 822 | 280 | 160 | 440 | 710 | 815 | |
| ACNSg 60-66-01 | 1690 | 738 | 945 | 1335 | 220 | 3...5 | - | 600 | 403 | 635 | 753 | 180 | 206 | 386 | 655 | 760 | 4 |
| ACNSg 60-99-01 | 1820 | 792 | 1025 | 1490 | 300 | | 270 | 840 | 430 | 660 | 765 | 200 | 180 | 380 | 650 | 755 | 8 |
| ACNSg 60-132-01 | 1975 | 862 | 1105 | 1590 | 380 | 7...9 | 350 | 890 | | | 700 | 225 | 155 | | | | |
| ACNSg 60-165-01 | 2235 | 1050 | 1185 | 1850 | 460 | | 450 | 1115 | 457 | 685 | 820 | 280 | 160 | 440 | 710 | 815 | |
| ACNSg 60-198-01 | 2315 | | 1265 | 1930 | 540 | | 500 | 1165 | | | | | | | | | |
| ACNSg 60-231-01 | 2390 | 1040 | 1345 | 1930 | 620 | 7...9 | 590 | 1190 | 406 | 635 | 782 | 250 | 150 | 400 | 670 | 775 | |
| ACNSg 60-264-01 | 2470 | | 1425 | 2010 | 700 | | 670 | 1265 | | | | | | | | | |
| ACNSg 60-297-01 | 2600 | 1090 | 1505 | 2130 | 780 | | 700 | 1350 | | | | | | | | | |
| ACNSg 60-330-01 | 2700 | 1110 | 1585 | 2250 | 860 | | 800 | 1465 | 457 | 685 | 837 | 280 | 160 | 440 | 710 | 815 | |

## UNIT OVERALL DIMENSIONS




| Unit | Dimensions, mm | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | $L_2$ | $L_3$ | l | $l_1$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ | $l_6$ | H | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ |
| ACNSg 60-66 | 1605 | 630 | 971 | 1340 | 242 | 3..5 | 590 | 1290 | 450 | 660 | 135 | 590 | 180 | 150 | 330 | 630 | 706 |
| ACNSg 60-99 | 1735 | 680 | 1051 | 1460 | 322 | | 710 | 1410 | | | | | | | | | |
| ACNSg 60-132 | 1945 | 810 | 1131 | 1640 | 402 | 6..9 | 740 | 1590 | | | | 707 | 225 | 132 | 360 | 660 | 736 |
| ACNSg 60-165 | 2025 | 810 | 1211 | 1720 | 482 | | 820 | 1670 | | | | | | | | | |
| ACNSg 60-198 | 2105 | | 1291 | 1800 | 562 | | 900 | 1750 | | | | | | | | | |
| ACNSg 60-231 | 2290 | 915 | 1371 | 1930 | 642 | | 980 | 1880 | 490 | | | 805 | 250 | 165 | 418 | 718 | 798 |
| ACNSg 60-264 | 2370 | | 1451 | 2010 | 722 | | 1060 | 1960 | | | | | | | | | |
| ACNSg 60-297 | 2340 | 805 | 1531 | 2170 | 802 | | 1140 | 2040 | | | | | | | | | |
| ACNSg 60-330 | 2420 | 805 | 1611 | | 882 | | 1220 | 2120 | | | | | | | | | |

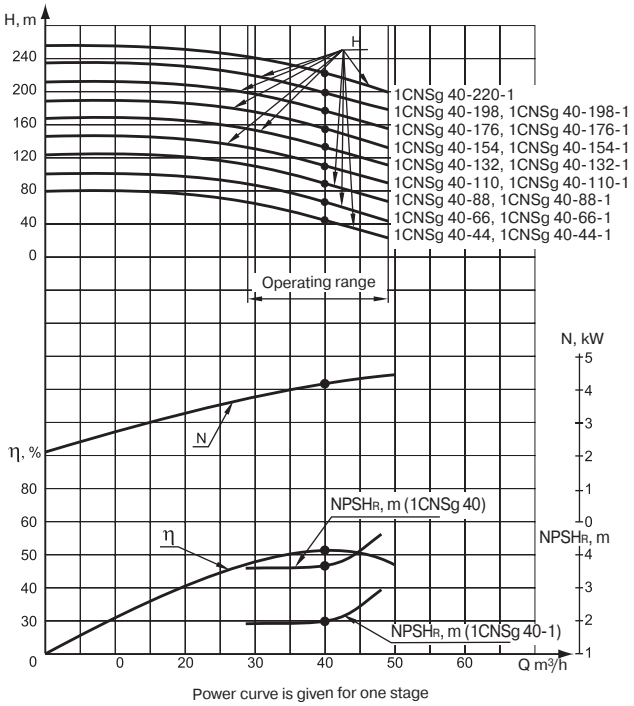
## TECHNICAL DATA

| Pump | Capacity, $m^3/h$ ($m^3/sec$) | Head, m | Inlet pressure MPa, ($kgf/cm^2$) | Rotation speed, $s^1$(rpm) | Eff., % | Number of stages | Weight, kg | Power supply | | | NPSH, m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Current, A | Volltage, V | Frequency, Hz | |
| 1CNSg 40-44 | 40 (0.0111) | 44 | 0.3 (3) | 49.2 (2950) | 62 | 2 | 180 | alternating | 380 | 50 | 3.6 |
| 1CNSg 40-44-1 | 40 (0.0111) | 44 | 0.3 (3) | 49.2 (2950) | 62 | 2 | 180 | | | | 2.0 |
| 1CNSg 40-66 | 40 (0.0111) | 66 | 0.3 (3) | 49.2 (2950) | 62 | 3 | 205 | | | | 3.6 |
| 1CNSg 40-66-1 | 40 (0.0111) | 66 | 0.3 (3) | 49.2 (2950) | 62 | 3 | 205 | | | | 2,0 |
| 1CNSg 40-88 | 40 (0.0111) | 88 | 0.3 (3) | 49.2 (2950) | 62 | 4 | 230 | | | | 3.6 |
| 1CNSg 40-88-1 | 40 (0.0111) | 88 | 0.3 (3) | 49.2 (2950) | 62 | 4 | 230 | | | | 2.0 |
| 1CNSg 40-110 | 40 (0.0111) | 110 | 0.3 (3) | 49.2 (2950) | 62 | 5 | 255 | | | | 3.6 |
| 1CNSg 40-110-1 | 40 (0.0111) | 110 | 0.3 (3) | 49.2 (2950) | 62 | 5 | 255 | | | | 2.0 |
| 1CNSg 40-132 | 40 (0.0111) | 132 | 0.3 (3) | 49.2 (2950) | 62 | 6 | 280 | | | | 3.6 |
| 1CNSg 40-132-1 | 40 (0.0111) | 132 | 0.3 (3) | 49.2 (2950) | 62 | 6 | 280 | | | | 2.0 |
| 1CNSg 40-154 | 40 (0.0111) | 154 | 0.3 (3) | 49.2 (2950) | 62 | 7 | 310 | | | | 3.6 |
| 1CNSg 40-154-1 | 40 (0.0111) | 154 | 0.3 (3) | 49.2 (2950) | 62 | 7 | 310 | | | | 2.0 |
| 1CNSg 40-176 | 40 (0.0111) | 176 | 0.3 (3) | 49.2 (2950) | 62 | 8 | 335 | | | | 3.6 |
| 1CNSg 40-176-1 | 40 (0.0111) | 176 | 0.3 (3) | 49.2 (2950) | 62 | 8 | 335 | | | | 2.0 |
| 1CNSg 40-198 | 40 (0.0111) | 198 | 0.3 (3) | 49.2 (2950) | 62 | 9 | 360 | alternating | 380 | 50 | 3.6 |
| 1CNSg 40-198-1 | 40 (0.0111) | 198 | 0.3 (3) | 49.2 (2950) | 62 | 9 | 360 | | | | 2.0 |
| 1CNSg 60-66 | 60 (0.0167) | 66 | 0.3 (3) | 49.2 (2950) | 64 | 2 | 200 | | | | 4.5 |
| 1CNSg 60-66-1 | 60 (0.0167) | 66 | 0.3 (3) | 49.2 (2950) | 64 | 2 | 200 | | | | 3.0 |
| 1CNSg 60-99 | 60 (0.0167) | 99 | 0.3 (3) | 49.2 (2950) | 64 | 3 | 237 | | | | 4.5 |
| 1CNSg 60-99-1 | 60 (0.0167) | 99 | 0.3 (3) | 49.2 (2950) | 64 | 3 | 237 | | | | 3.0 |
| 1CNSg 60-132 | 60 (0.0167) | 132 | 0.3 (3) | 49.2 (2950) | 64 | 4 | 245 | | | | 4.5 |
| 1CNSg 60-132-1 | 60 (0.0167) | 132 | 0.3 (3) | 49.2 (2950) | 64 | 4 | 245 | | | | 3.0 |
| 1CNSg 60-165 | 60 (0.0167) | 165 | 0.3 (3) | 49.2 (2950) | 64 | 5 | 315 | | | | 4.5 |
| 1CNSg 60-165-1 | 60 (0.0167) | 165 | 0.3 (3) | 49.2 (2950) | 64 | 5 | 315 | | | | 3.0 |
| 1CNSg 60-198 | 60 (0.0167) | 198 | 0.3 (3) | 49.2 (2950) | 64 | 6 | 350 | | | | 4.5 |
| 1CNSg 60-198-1 | 60 (0.0167) | 198 | 0.3 (3) | 49.2 (2950) | 64 | 6 | 350 | | | | 3.0 |

## PERFORMANCE CURVE

### 1CNSg 40

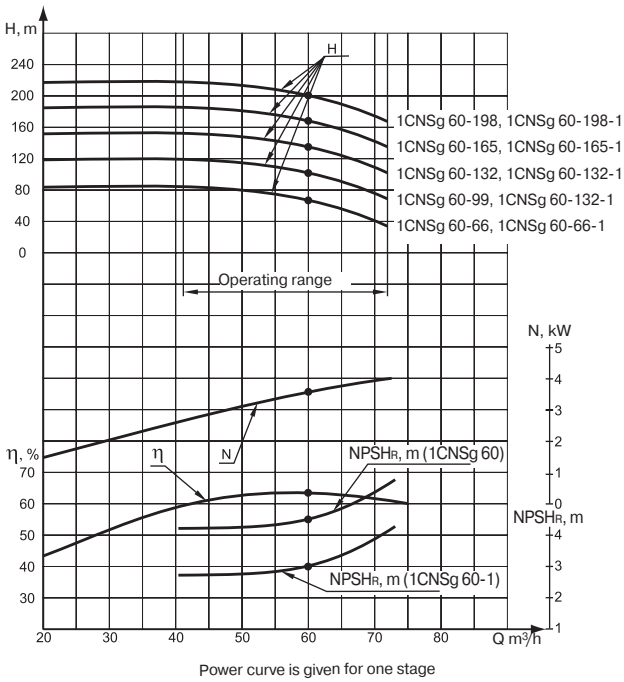
rotation speed 49.2 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




Power curve is given for one stage

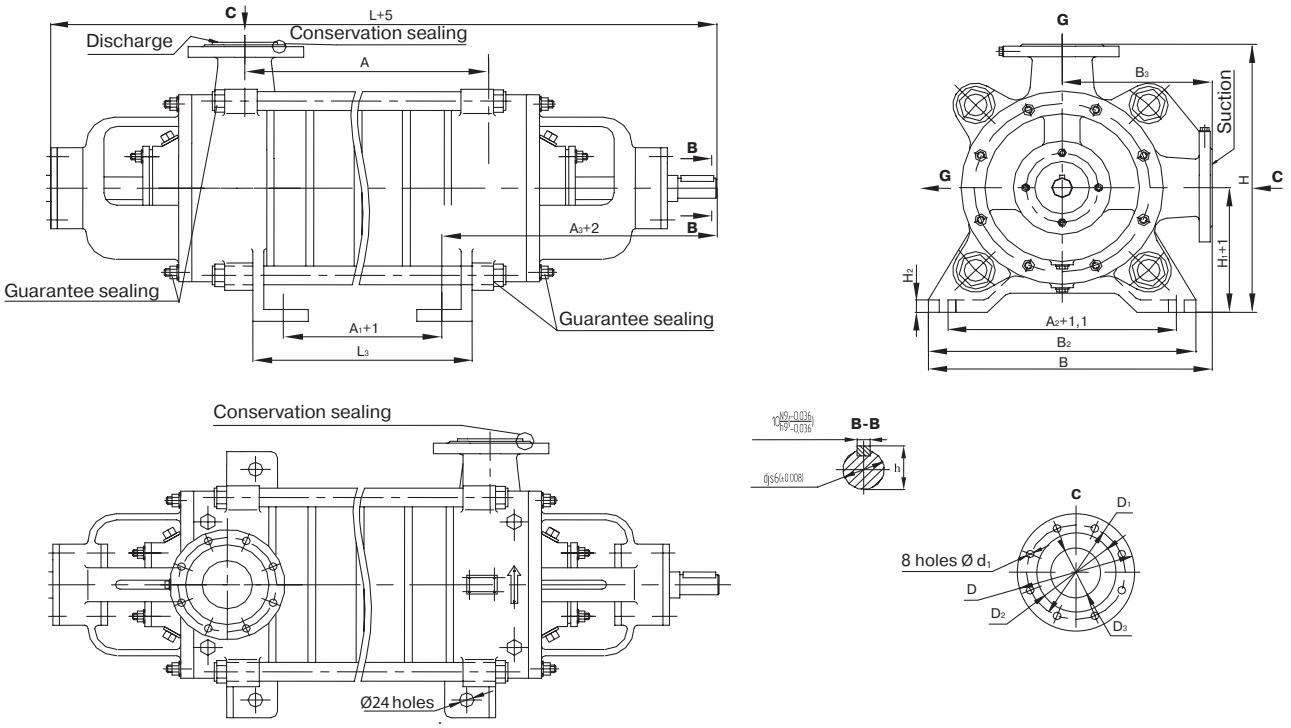
### 1CNSg 60

rotation speed 49.2 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



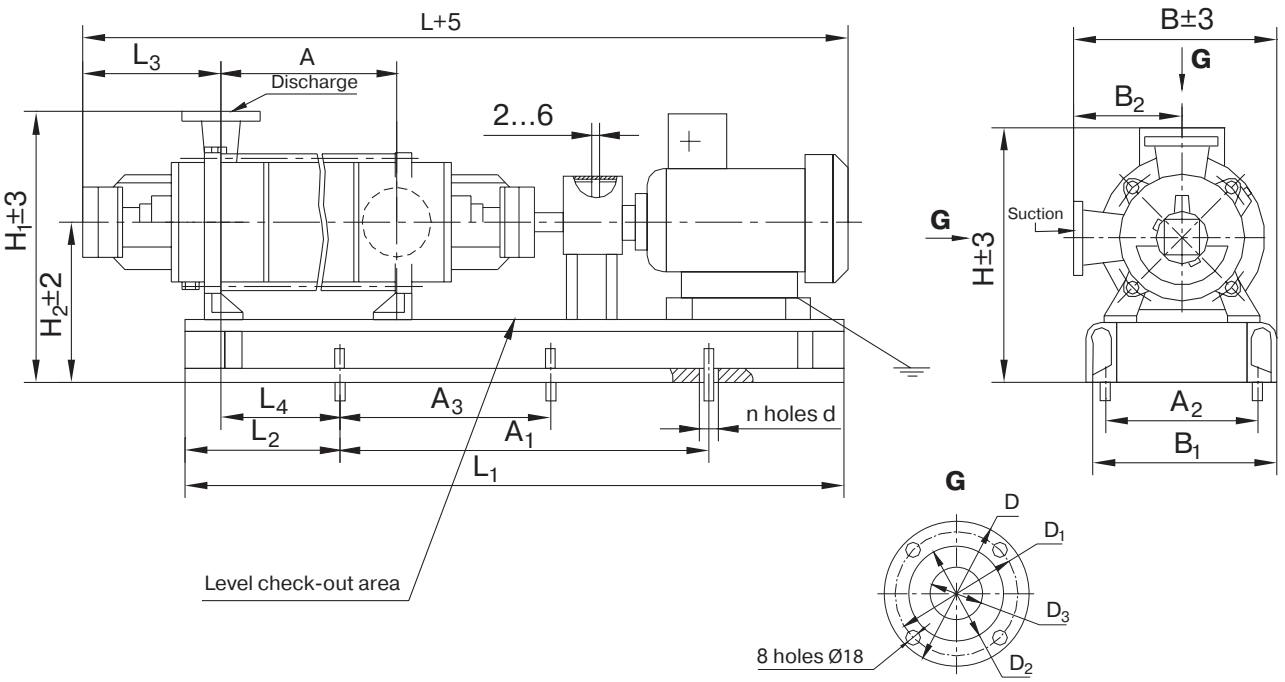

Power curve is given for one stage

## PUMP OVERALL DIMENSIONS




| Pump | Dimensions, mm | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | L3 | A | $A_1$ | $A_2$ | $A_3$ | B | $B_2$ | $B_3$ | H | $H_1$ | $H_2$ | Д | $Д_1$ | $Д_2$ | $Д_3$ | d | $d_1$ | h |
| 1CNSg 40-44<br>1CNSg 40-44-1 | 830 | 225 | 225 | 115 | 350 | 405 | 435 | 410 | 230 | 430 | 200 | 20 | 180 | 145 | 122 | 65 | 32 | 18 | $35_{-0.21}$ |
| 1CNSg 40-66<br>1CNSg 40-66-1 | 913 | 308 | 308 | 198 | | | | | | | | | | | | | | | |
| 1CNSg 40-88<br>1CNSg 40-88-1 | 996 | 391 | 391 | 281 | | | | | | | | | | | | | | | |
| 1CNSg 40-110<br>1CNSg 40-110-1 | 1080 | 474 | 474 | 364 | | | | | | | | | | | | | | | |
| 1CNSg 40-132<br>1CNSg 40-132-1 | 1162 | 557 | 557 | 447 | | | | | | | | | | | | | | | |
| 1CNSg 40-154<br>1CNSg 40-154-1 | 1245 | 640 | 640 | 530 | | | | | | | | | | | | | | | |
| 1CNSg 40-176<br>1CNSg 40-176-1 | 1328 | 723 | 723 | 613 | | | | | | | | | | | | | | | |
| 1CNSg 40-198<br>1CNSg 40-198-1 | 1410 | 806 | 806 | 696 | | | | | | | | | | | | | | | |
| 1CNSg 60-66<br>1CNSg 60-66-1 | 862 | 241 | 241 | 111 | 340 | 415 | 462 | 400 | 260 | 462 | 200 | 25 | 195 | 160 | 133 | 80 | 36 | 18 | $39_{-0.29}$ |
| 1CNSg 60-99<br>1CNSg 60-99-1 | 950 | 329 | 329 | 199 | | | | | | | | | | | | | | | |
| 1CNSg 60-132<br>1CNSg 60-132-1 | 1028 | 417 | 417 | 287 | | | | | | | | | | | | | | | |
| 1CNSg 60-165<br>1CNSg 60-165-1 | 1126 | 505 | 505 | 375 | | | | | | | | | | | | | | | |
| 1CNSg 60-198<br>1CNSg 60-198-1 | 1214 | 593 | 593 | 463 | | | | | | | | | | | | | | | |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA



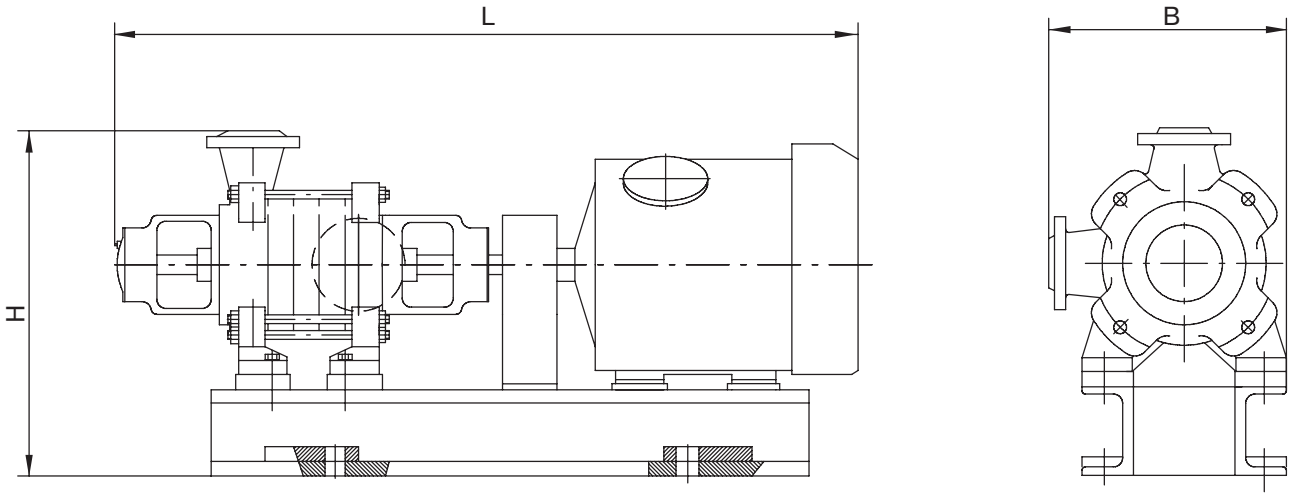

| Unit | Electric motor | Power, kW | Dimensions, mm | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | A | $A_1$ | $A_2$ | $A_3$ |
| 1CNSg 40-44 | AIRM132M2 | 11 | 1335 | 990 | 150 | 254 | 135 | 225 | 690 | 350 | - |
| 1CNSg 40-44-1 | AIR160S2 | 15 | 1465 | 1050 | 150 | | | | 800 | | 400 |
| 1CNSg 40-66 | 5A160S2 | | 1590 | 1135 | 180 | | 165 | 308 | | | |
| 1CNSg 40-66-1 | | | | | | | | | | | |
| 1CNSg 40-88 | 5A160M2 | 18,5 | 1670 | 1250 | 210 | | 195 | 391 | 870 | | 435 |
| 1CNSg 40-88-1 | | | | | | | | | | | |
| 1CNSg 40-110 | AIR180S2 | 22 | 1715 | 1320 | 250 | | 235 | 474 | 920 | | 460 |
| 1CNSg 40-110-1 | | | | | | | | | | | |
| 1CNSg 40-132 | AIR180M2 | 30 | 1850 | 1440 | 300 | | 285 | 557 | 100 | | 500 |
| 1CNSg 40-132-1 | | | | | | | | | | | |
| 1CNSg 40-154 | | | 1930 | 1523 | 340 | | 325 | 640 | 1040 | | 520 |
| 1CNSg 40-154-1 | | | | | | | | | | | |
| 1CNSg 40-176 | A200M2 | 37 | 2140 | 1660 | 370 | | 355 | 723 | 1080 | | 540 |
| 1CNSg 40-176-1 | 5A200L2 | 45 | 2115 | 1700 | | | | | | | |
| 1CNSg 40-198 | | | 2197 | 1785 | 400 | | 385 | 805 | 1180 | | 590 |
| 1CNSg 40-198-1 | 5A225M2 | 55 | 2270 | 1794 | | | | | | | |
| 1CNSg 60-66 | AIR180S2 | 22 | 1500 | 1080 | 140 | 267 | 130 | 241 | 820 | 345 | - |
| 1CNSg 60-66-1 | AIR180M2 | 30 | 1550 | 1125 | | | | | | | - |
| 1CNSg 60-99 | | | 1640 | 1210 | 180 | | 170 | 329 | 880 | | - |
| 1CNSg 60-99-1 | | | | | | | | | | | |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

| Unit | Electric motor | Power, kW | Dimensions, mm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | A | $A_1$ | $A_2$ | $A_3$ |
| 1CNSg 60-132 | 5A200L2 | 45 | 1820 | 1380 | 220 | 267 | 210 | 417 | 1000 | 340 | 500 |
| 1CNSg 60-132-1 | | | | | | | | | | | |
| 1CNSg 60-165 | 5A225M2 | 55 | 1970 | 1495 | 295 | | 285 | 505 | | | |
| 1CNSg 60-165-1 | | | | | | | | | | | |
| 1CNSg 60-198 | | | 2060 | 1585 | 415 | | 405 | 593 | | | |
| 1CNSg 60-198-1 | | | | | | | | | | | |

| Unit | Electric motor | Power, kW | Dimensions, mm | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | D | $D_1$ | $D_2$ | $D_3$ | d | n | |
| 1CNSg 40-44<br>1CNSg 40-44-1 | AIRM132M2 | 11 | 440 | 384 | 230 | 553 | 590 | 360 | 180 | 145 | 122 | 65 | 19 | 4 | 330 |
| | AIR160S2 | 15 | | | | 585 | | | | | | | | 6 | 380 |
| 1CNSg 40-66<br>1CNSg 40-66-1 | 5A160S2 | | | | | 622 | | | | | | | | | 410 |
| 1CNSg 40-88<br>1CNSg 40-88-1 | 5A160M2 | 18,5 | | | | | | | | | | | | | 455 |
| 1CNSg 40-110<br>1CNSg 40-110-1 | AIR180S2 | 22 | 460 | 420 | | 680 | 650 | 420 | | | | | 33 | 6 | 520 |
| 1CNSg 40-132<br>1CNSg 40-132-1 | AIR180M2 | 30 | | | | | | | | | | | | | 560 |
| 1CNSg 40-154<br>1CNSg 40-154-1 | | | | | | | | | | | | | | | 595 |
| 1CNSg 40-176<br>1CNSg 40-176-1 | A200M2 | 37 | | | | 695 | | | | | | | | | 705 |
| | 5A200L2 | 45 | | | | 705 | | | | | | | | | 725 |
| 1CNSg 40-198<br>1CNSg 40-198-1 | | | | | | | | | | | | | | | 780 |
| | 5A225M2 | 55 | | | | 720 | | | | | | | | | 830 |
| 1CNSg 60-66<br>1CNSg 60-66-1 | AIR180S2 | 22 | 470 | 395 | 260 | 620 | 620 | 360 | 195 | 160 | 133 | 80 | 19 | 4 | 445 |
| | AIR180M2 | 30 | | | | | | | | | | | | | 463 |
| 1CNSg 60-99<br>1CNSg 60-99-1 | | | | | | | | | | | | | 33 | 6 | 500 |
| 1CNSg 60-132<br>1CNSg 60-132-1 | 5A200L2 | 45 | 478 | | | 645 | | | | | | | | | 638 |
| 1CNSg 60-165<br>1CNSg 60-165-1 | 5A225M2 | 55 | 475 | 390 | | 755 | 705 | 445 | | | | | | | 790 |
| 1CNSg 60-198<br>1CNSg 60-198-1 | | | | | | | | | | | | | | | 832 |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA




| Unit | Capacity $m^3/h$ | Head, m | Rotation speed, rpm | Electric motor power, kW | NPSH, m | Overall dimensions L x B x H, mm | Weight, кg |
|---|---|---|---|---|---|---|---|
| CNSA (CNSGA) 13-70 | 13 | 70 | 3000 | 11 | 3 (for CNS pumps) | 1350x440x580 | 340 |
| CNSA (CNSGA) 13-105 | | 105 | | 11 | | 1420x440x580 | 370 |
| CNSA (CNSGA) 13-140 | | 140 | | 15 | | 1660x440x620 | 460 |
| CNSA (CNSGA) 13-175 | | 175 | | 18.5 | | 1760x440x620 | 500 |
| CNSA (CNSGA) 13-210 | | 210 | | 18.5 | | 1830x440x620 | 540 |
| CNSA (CNSGA) 13-245 | | 245 | | 22 | | 1830x440x610 | 580 |
| CNSA (CNSGA) 13-280 | | 280 | | 30 | | 1960x440x610 | 630 |
| CNSA (CNSGA) 13-315 | | 315 | | 30 | | 2030x440x610 | 660 |
| CNSA (CNSGA) 13-350 | | 350 | | 30 | | 2100x440x610 | 690 |
| CNSA (CNSGA) 38-44 | 38 | 44 | 3000 | 11 | 3.6 (for CNS pumps) | 1350x440x580 | 345 |
| CNSA (CNSGA) 38-66 | | 66 | | 15 | | 1610x440x690 | 420 |
| CNSA (CNSGA) 38-88 | | 88 | | 18.5 | | 1720x440x690 | 485 |
| CNSA (CNSGA) 38-110 | | 110 | | 22 | | 1760x440x710 | 580 |
| CNSA (CNSGA) 38-132 | | 132 | | 30 | | 1890x440x710 | 620 |
| CNSA (CNSGA) 38-154 | | 154 | | 30 | | 1960x440x710 | 645 |
| CNSA (CNSGA) 38-176 | | 176 | | 30 | | 2030x440x710 | 685 |
| CNSA (CNSGA) 38-198 | | 198 | | 37 | | 2140x440x710 | 750 |
| CNSA (CNSGA) 38-220 | | 220 | | 45 | | 2220x440x710 | 800 |
| CNSA (CNSGA) 60-66 | 60 | 66 | 3000 | 22 | 4.5 (for CNS pumps) | 1570x520x730 | 490 |
| CNSA (CNSGA) 60-99 | | 99 | | 30 | | 1690x520x730 | 530 |
| CNSA (CNSGA) 60-132 | | 132 | | 45 | | 1850x520x730 | 640 |
| CNSA (CNSGA) 60-165 | | 165 | | 55 | | 1990x660x790 | 780 |

## UNIT OVERALL DIMENSIONS & TECHNICAL DATA

| Unit | Capacity, $m^3/h$ | Head, m | Rotation speed, rpm | Electric motor power, kW | NPSH, m | Overall dimensions L x B x H, mm | Weight, кg |
|---|---|---|---|---|---|---|---|
| CNSA (CNSGA) 60-198 | 60 | 198 | 3000 | 55 | 4,5 (for CNS pumps) | 2070x520x730 | 805 |
| CNSA (CNSGA) 60-231 | | 231 | | 75 | | 2320x800x800 | 1080 |
| CNSA (CNSGA) 60-264 | | 264 | | 75 | | 2400x800x800 | 1100 |
| CNSA (CNSGA) 60-297 | | 297 | | 75 | | 2480x800x800 | 1130 |
| CNSA (CNSGA) 60-330 | | 330 | | 110 | | 2630x880x930 | 1440 |
| CNSA (CNSGA) 105-98 | 105 | 98 | 3000 | 55 | 5.5 (for CNS pumps) | 2000x640x960 | 1080 |
| CNSA (CNSGA) 105-147 | | 147 | | 75 | | 2220x840x920 | 1310 |
| CNSA (CNSGA) 105-196 | | 196 | | 110 | | 2385x885x950 | 1610 |
| CNSA (CNSGA) 105-245 | | 245 | | 132 | | 2600x950x910 | 1830 |
| CNSA (CNSGA) 105-294 | | 294 | | 160 | | 2700x950x910 | 1970 |
| CNSA (CNSGA) 105-343 | | 343 | | 160 | | 2790x950x910 | 2030 |
| CNSA (CNSGA) 105-392 | | 392 | | 200 | | 2960x950x910 | 2160 |
| CNSA (CNSGA) 105-441 | | 441 | | 250 | | 3030x1020x970 | 2510 |
| CNSA (CNSGA) 105-490 | | 490 | | 250 | | 3120x1020x970 | 2580 |
| CNSA (CNSGA) 180-85 | 180 | 85 | 1500 | 75 | 4,0 (for CNS pumps) | 2200x880x990 | 1470 |
| CNSA (CNSGA) 180-128 | | 128 | | 110 | | 2400x930x1000 | 1830 |
| CNSA (CNSGA) 180-170 | | 170 | | 132 | | 2600x980x990 | 2070 |
| CNSA (CNSGA) 180-212 | | 212 | | 160 | | 2700x950x970 | 2250 |
| CNSA (CNSGA) 180-255 | | 255 | | 200 | | 2870x980x970 | 2510 |
| CNSA (CNSGA) 180-297 | | 297 | | 250 | | 3270x1200x1280 | 3670 |
| CNSA (CNSGA) 180-340 | | 340 | | 250 | | 3370x1200x1280 | 3750 |
| CNSA (CNSGA) 180-383 | | 383 | | 315 | | 3600x1200x1280 | 4220 |
| CNSA (CNSGA) 180-425 | | 425 | | 315 | | 3710x1200x1280 | 4340 |
| CNSA (CNSGA) 300-120 | 300 | 120 | 1500 | 160 | 4,5 (for CNS pumps) | 2670x870x1090 | 2470 |
| CNSA (CNSGA) 300-180 | | 180 | | 250 | | 3000x870x1110 | 2790 |
| CNSA (CNSGA) 300-240 | | 240 | | 315 | | 3150x870x1100 | 3150 |
| CNSA (CNSGA) 300-300 | | 300 | | 400 | | 3290x1320x1560 | 3920 |
| CNSA (CNSGA) 300-360 | | 360 | | 500 | | 3410x1320x1560 | 4220 |
| CNSA (CNSGA) 300-420 | | 420 | | 500 | | 3530x1320x1560 | 4380 |
| CNSA (CNSGA) 300-480 | | 480 | | 630 | | 3750x1320x1560 | 4810 |
| CNSA (CNSGA) 300-540 | | 540 | | 800 | | 3820x1420x1680 | 5260 |
| CNSA (CNSGA) 300-600 | | 600 | | 800 | | 3940x1420x1680 | 5430 |

# CNSv SERIES
## CENTRIFUGAL MULTISTAGE VERTICAL PUMPS

### APPLICATION

The centrifugal multistage vertical pumps of the CNSv series are intended for feed water supply to the steam boilers at low power combined heating and power plants (CHPP) and in the municipal heating and hot water supply systems.

- Hydrogen index (pH): 7.0 - 9.2
- Max temperature: 120 °C
- Max solids content: 0.1 %
- Max solids size: 0.1 mm

The CNSv pumps are also applied in the pressure boosting systems, water circulation units, and in various industrial applications.

The CNSv pumps are not intended for operation in explosion and fire hazardous premises.

### PUMP SERIES DESIGNATION

**CNSv 20–120–1**

CNSv XX - XXX - X

Pump series
Capacity, $m^3/h$
Head, m
Location of nozzles

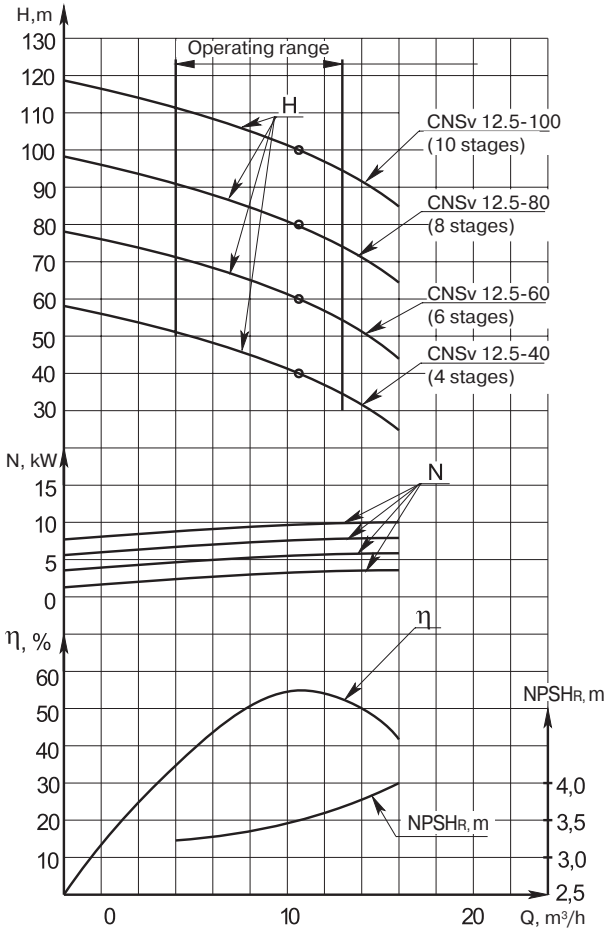
### TECHNICAL DATA

| Pump | Capacity, $m^3/h$ | Head, m | Suction pressure, MPa, ($kgf/cm^2$), max | Rotation speed, $s^{-1}$(rpm) | Power, kW | Eff., % | Number of stages | Weight, kg | Power supply | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Current | Voltage, V | Freq., Hz |
| CNSv 12.5-40 | 12.5 | 40 | 0.4 (4.0) | 49.2 (2950) | 3.8 | 55 | 4 | 62 | alternating | 380 | 50 |
| CNSv 12.5-60 | 12.5 | 60 | | | 5.2 | 55 | 6 | 74 | | | |
| CNSv 12.5-80 | 12.5 | 80 | | | 7.6 | 55 | 8 | 86 | | | |
| CNSv 12.5-100 | 12.5 | 100 | | | 9.5 | 55 | 10 | 98 | | | |
| CNSv 20-45 | 20 | 45 | | | 5.0 | 60 | 4 | 63 | | | |
| CNSv 20-70 | 20 | 70 | | | 7.2 | 60 | 6 | 87 | | | |
| CNSv 20-95 | 20 | 95 | | | 10.2 | 60 | 8 | 111 | | | |
| CNSv 20-120 | 20 | 120 | | | 13.2 | 60 | 10 | 135 | | | |

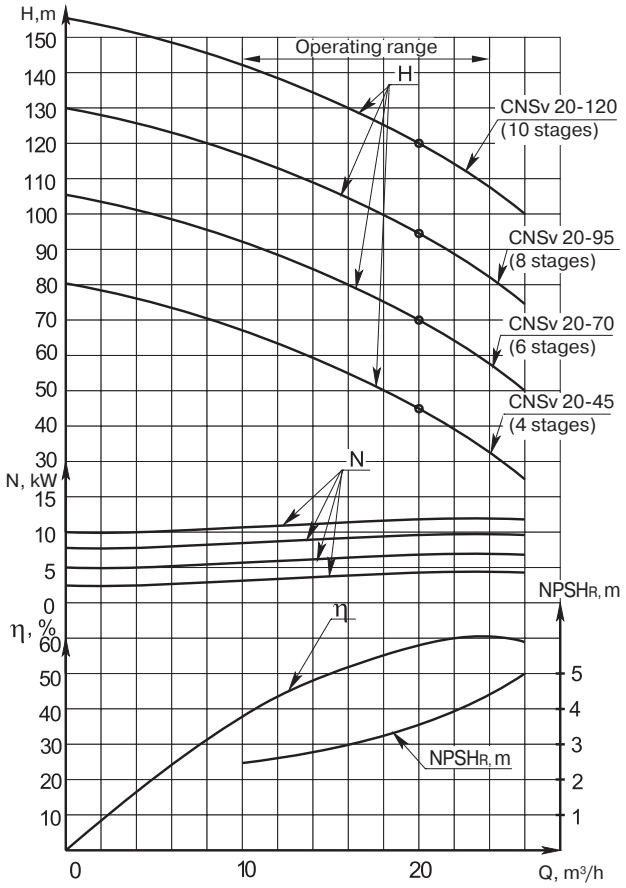
The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 $kg/m^3$

## PERFORMANCE CURVE

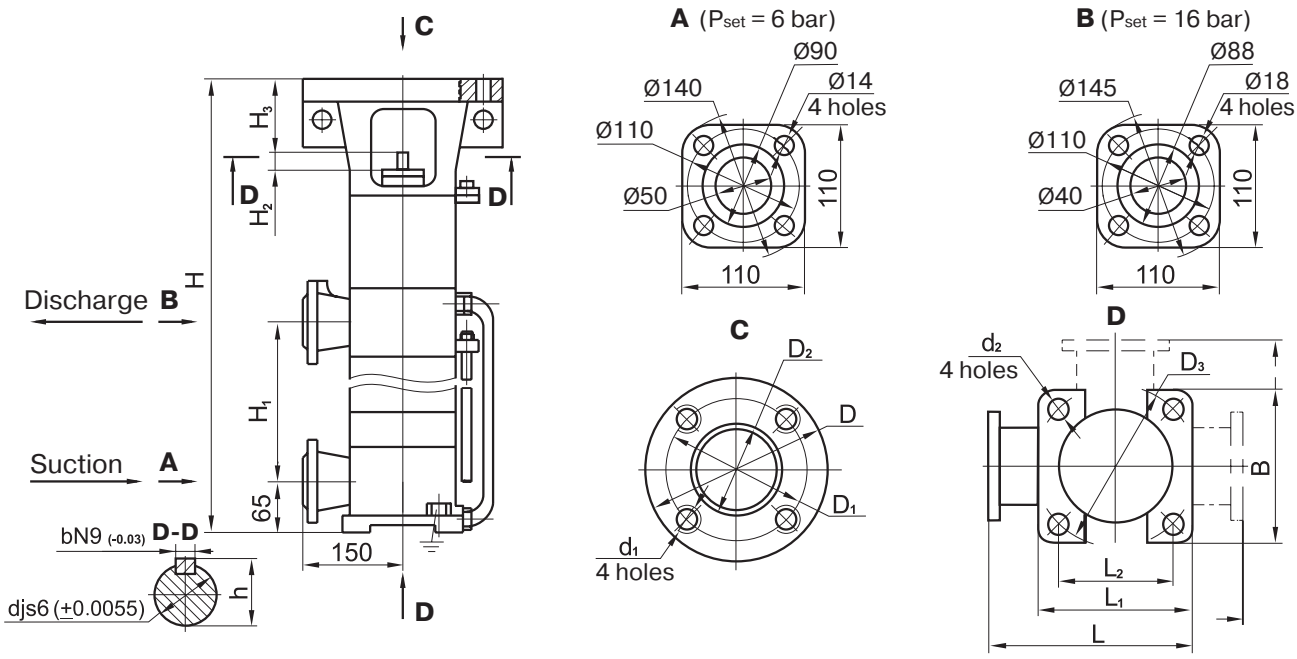
**CNSv 12.5**
rotation speed 49.2 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**CNSv 20**
rotation speed 49.2 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

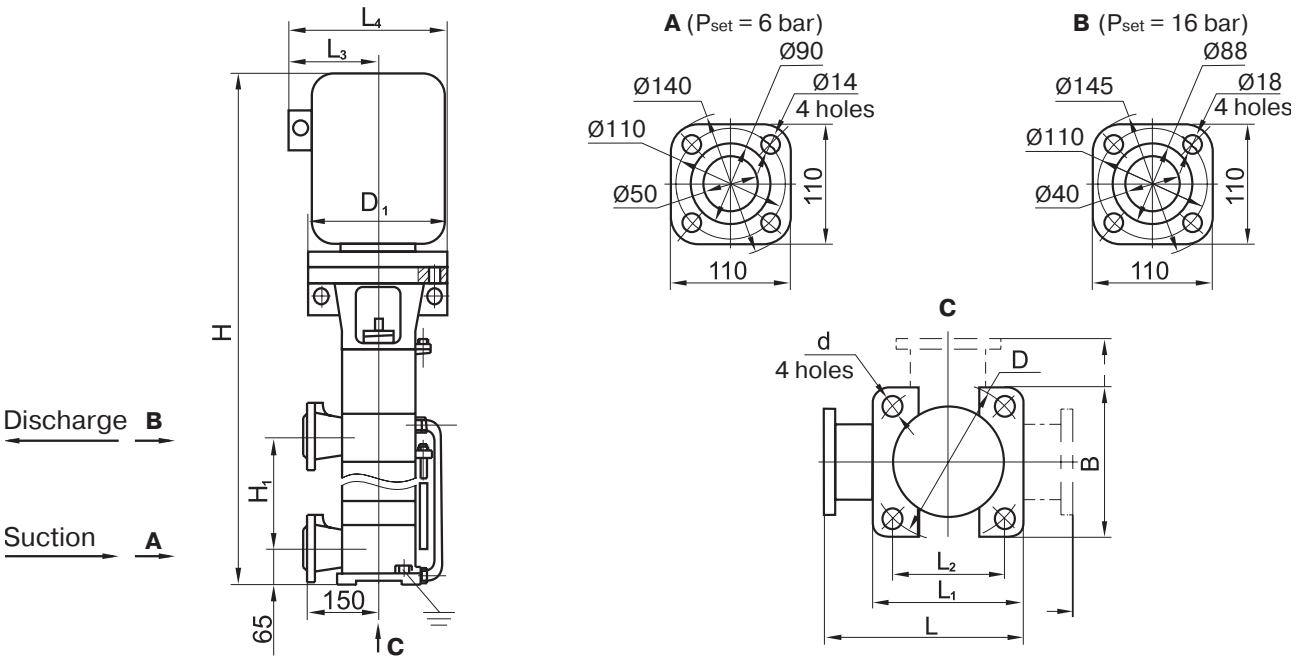


## PUMP OVERALL DIMENSIONS




| Pump | Number of stages | Nozzles location | Dimensions, mm | | | | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | $L_1$ | $L_2$ | B | H | $H_1$ | $H_2$ | $H_3$ | D | $D_1$ | $D_2$ | $D_3$ | h | d | $d_1$ | $d_2$ | b | |
| CNSv 12.5-40-1 | 4 | 1 | 232 | 164 | 96 | 186 | 715 | 270 | 35 | 92 | 250 | 215 | 180 | 186 | 16.5 | 14 | M12 | 18 | 5 | 62 |
| CNSv 12.5-40-2 | 4 | 2 | 232 | | | 243 | 715 | 270 | | | | | | | | | | | | |
| CNSv 12.5-40-3 | 4 | 3 | 300 | | | 186 | 715 | 270 | | | | | | | | | | | | |
| CNSv 12.5-40-4 | 4 | 4 | 232 | | | 243 | 715 | 270 | | | | | | | | | | | | |
| CNSv 12.5-60-1 | 6 | 1 | 232 | | | 186 | 830 | 385 | | 112 | 300 | 265 | 230 | | | | | | | 74 |
| CNSv 12.5-60-2 | 6 | 2 | 232 | | | 243 | 830 | 385 | | | | | | | | | | | | |
| CNSv 12.5-60-3 | 6 | 3 | 300 | | | 186 | 830 | 385 | | | | | | | | | | | | |
| CNSv 12.5-60-4 | 6 | 4 | 232 | | | 243 | 830 | 385 | | | | | | | | | | | | |
| CNSv 12.5-80-1 | 8 | 1 | 232 | | | 186 | 945 | 500 | | | 350 | 300 | 250 | | | | M16 | | | 86 |
| CNSv 12.5-80-2 | 8 | 2 | 232 | | | 243 | 945 | 500 | | | | | | | | | | | | |
| CNSv 12.5-80-3 | 8 | 3 | 300 | | | 186 | 945 | 500 | | | | | | | | | | | | |
| CNSv 12.5-80-4 | 8 | 4 | 232 | | | 243 | 945 | 500 | | | | | | | | | | | | |
| CNSv 12.5-100-1 | 10 | 1 | 232 | | | 186 | 1060 | 615 | | | | | | | | | | | | 98 |
| CNSv 12.5-100-2 | 10 | 2 | 232 | | | 243 | 1060 | 615 | | | | | | | | | | | | |
| CNSv 12.5-100-3 | 10 | 3 | 300 | | | 186 | 1060 | 615 | | | | | | | | | | | | |
| CNSv 12.5-100-4 | 10 | 4 | 232 | | | 243 | 1060 | 615 | | | | | | | | | | | | |
| CNSv 20-45-1 | 4 | 1 | 245 | 194 | 113 | 218 | 780 | 295 | 47 | 81 | 250 | 215 | 180 | 218 | 20.5 | 18 | M12 | 18 | 6 | 63 |
| CNSv 20-45-2 | 4 | 2 | 245 | | | 259 | 780 | 295 | | | | | | | | | | | | |
| CNSv 20-45-3 | 4 | 3 | 300 | | | 218 | 780 | 295 | | | | | | | | | | | | |
| CNSv 20-45-4 | 4 | 4 | 245 | | | 259 | 780 | 295 | | | | | | | | | | | | |
| CNSv 20-70-1 | 6 | 1 | 245 | | | 218 | 900 | 415 | | 111 | 300 | 265 | 230 | | | | | | | 87 |
| CNSv 20-70-2 | 6 | 2 | 245 | | | 259 | 900 | 415 | | | | | | | | | | | | |
| CNSv 20-70-3 | 6 | 3 | 300 | | | 218 | 900 | 415 | | | | | | | | | | | | |
| CNSv 20-70-4 | 6 | 4 | 245 | | | 259 | 900 | 415 | | | | | | | | | | | | |
| CNSv 20-95-1 | 8 | 1 | 245 | | | 218 | 1020 | 535 | | | 350 | 300 | 250 | | | | M16 | | | 111 |
| CNSv 20-95-2 | 8 | 2 | 245 | | | 259 | 1020 | 535 | | | | | | | | | | | | |
| CNSv 20-95-3 | 8 | 3 | 300 | | | 218 | 1020 | 535 | | | | | | | | | | | | |
| CNSv 20-95-4 | 8 | 4 | 245 | | | 259 | 1020 | 535 | | | | | | | | | | | | |
| CNSv 20-120-1 | 10 | 1 | 245 | | | 218 | 1140 | 655 | | 141 | | | | | | | | | | 135 |
| CNSv 20-120-2 | 10 | 2 | 245 | | | 259 | 1140 | 655 | | | | | | | | | | | | |
| CNSv 20-120-3 | 10 | 3 | 300 | | | 218 | 1140 | 655 | | | | | | | | | | | | |
| CNSv 20-120-4 | 10 | 4 | 245 | | | 259 | 1140 | 655 | | | | | | | | | | | | |

## UNIT OVERALL DIMENSIONS




| Unit | Number of stages | Electric motor | | Dimensions, mm | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Power,kW | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | B | D | $D_1$ | H | $H_1$ | d | |
| CNSv 12.5-40-1 | 4 | AIR 100L2 | 5.5 | 232 | 164 | 96 | 147 | 272 | 186 | 186 | 250 | 1025 | 270 | 18 | 100 |
| CNSv 12.5-40-2 | 4 | AIR 100L2 | 5.5 | 232 | | | 147 | 272 | 243 | | 250 | 1025 | 270 | | 100 |
| CNSv 12.5-40-3 | 4 | AIR 100L2 | 5.5 | 300 | | | 147 | 272 | 186 | | 250 | 1025 | 270 | | 100 |
| CNSv 12.5-40-4 | 4 | AIR 100L2 | 5.5 | 232 | | | 147 | 272 | 243 | | 250 | 1025 | 270 | | 100 |
| CNSv 12.5-60-1 | 6 | AIRM 112M2 | 7.5 | 232 | | | 173 | 323 | 186 | | 300 | 1185 | 385 | | 130 |
| CNSv 12.5-60-2 | 6 | AIRM 112M2 | 7.5 | 232 | | | 173 | 323 | 243 | | 300 | 1185 | 385 | | 130 |
| CNSv 12.5-60-3 | 6 | AIRM 112M2 | 7.5 | 300 | | | 173 | 323 | 186 | | 300 | 1185 | 385 | | 130 |
| CNSv 12.5-60-4 | 6 | AIRM 112M2 | 7.5 | 232 | | | 173 | 323 | 243 | | 300 | 1185 | 385 | | 130 |
| CNSv 12.5-80-1 | 8 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 186 | | 350 | 1365 | 500 | | 175 |
| CNSv 12.5-80-2 | 8 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 243 | | 350 | 1365 | 500 | | 175 |
| CNSv 12.5-80-3 | 8 | AIR 132M2 | 11 | 300 | | | 193 | 368 | 186 | | 350 | 1365 | 500 | | 175 |
| CNSv 12.5-80-4 | 8 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 243 | | 350 | 1365 | 500 | | 175 |
| CNSv 12.5-100-1 | 10 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 186 | | 350 | 1480 | 615 | | 185 |
| CNSv 12.5-100-2 | 10 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 243 | | 350 | 1480 | 615 | | 185 |
| CNSv 12.5-100-3 | 10 | AIR 132M2 | 11 | 300 | | | 193 | 368 | 186 | | 350 | 1480 | 615 | | 185 |
| CNSv 12.5-100-4 | 10 | AIR 132M2 | 11 | 232 | | | 193 | 368 | 243 | | 350 | 1480 | 615 | | 185 |
| CNSv 20-45-1 | 4 | AIR 100L2 | 5.5 | 245 | 194 | 113 | 147 | 272 | 218 | 218 | 250 | 1090 | 295 | 18 | 100 |
| CNSv 20-45-2 | 4 | AIR 100L2 | 5.5 | 245 | | | 147 | 272 | 259 | | 250 | 1090 | 295 | | 100 |
| CNSv 20-45-3 | 4 | AIR 100L2 | 5.5 | 300 | | | 147 | 272 | 218 | | 250 | 1090 | 295 | | 100 |
| CNSv 20-45-4 | 4 | AIR 100L2 | 5.5 | 245 | | | 147 | 272 | 259 | | 250 | 1090 | 295 | | 100 |
| CNSv 20-70-1 | 6 | AIRM 112M2 | 7.5 | 245 | | | 173 | 323 | 218 | | 300 | 1255 | 415 | | 145 |
| CNSv 20-70-2 | 6 | AIRM 112M2 | 7.5 | 245 | | | 173 | 323 | 259 | | 300 | 1255 | 415 | | 145 |
| CNSv 20-70-3 | 6 | AIRM 112M2 | 7.5 | 300 | | | 173 | 323 | 218 | | 300 | 1255 | 415 | | 145 |
| CNSv 20-70-4 | 6 | AIRM 112M2 | 7.5 | 245 | | | 173 | 323 | 259 | | 300 | 1255 | 415 | | 145 |
| CNSv 20-95-1 | 8 | AIR 132M2 | 11 | 245 | | | 193 | 368 | 218 | | 350 | 1440 | 535 | | 200 |
| CNSv 20-95-2 | 8 | AIR 132M2 | 11 | 245 | | | 193 | 368 | 259 | | 350 | 1440 | 535 | | 200 |
| CNSv 20-95-3 | 8 | AIR 132M2 | 11 | 300 | | | 193 | 368 | 218 | | 350 | 1440 | 535 | | 200 |
| CNSv 20-95-4 | 8 | AIR 132M2 | 11 | 245 | | | 193 | 368 | 259 | | 350 | 1440 | 535 | | 200 |
| CNSv 20-120-1 | 10 | AIR 160S2 | 15 | 245 | | | 245 | 420 | 218 | | 350 | 1635 | 655 | | 265 |
| CNSv 20-120-2 | 10 | AIR 160S2 | 15 | 245 | | | 245 | 420 | 259 | | 350 | 1635 | 655 | | 265 |
| CNSv 20-120-3 | 10 | AIR 160S2 | 15 | 300 | | | 245 | 420 | 218 | | 350 | 1635 | 655 | | 265 |
| CNSv 20-120-4 | 10 | AIR 160S2 | 15 | 245 | | | 245 | 420 | 259 | | 350 | 1635 | 655 | | 265 |

# 1K SERIES
## CENTRIFUGAL OVERHUNG END-SUCTION PUMPS

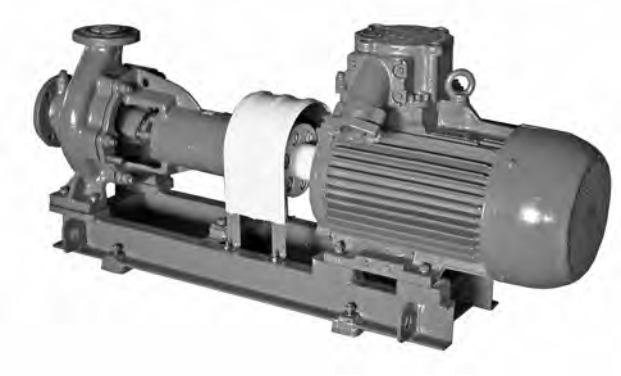
### APPLICATION

The centrifugal overhung end-suction pumps of the 1K series are intended for pumping of service water (except sea water) and similar liquids by viscosity, density, and chemical activity.

- Hydrogen index (pH): 6.0 - 9.0
- Max temperature: +105 °C
- Max solids content: 1 %
- Max solids size: 0.2 mm

The pump models 1K50 and 1K65 are intended for liquids with temperature up to +85 °C only.

The pumps with mechanical sealing are also available in versions with explosion-proof electric motors.



### PUMP SERIES DESIGNATION

**1K 80–50–200–s (т)**

1 K XX - XXX - XX - x

Model version

Pump series

Suction nozzle diameter, mm

Discharge nozzle diameter, mm

Impeller rated diameter, mm
**a**, **b**, **v** – decreased impeller diameterl, **m** – increased impeller diameter

Shaft sealing: **s** – gland sealing, **t** – mechanical sealing

### TECHNICAL DATA

| Pump | Capacity, m³/h | Head, m | Rotation speed, rpm | Power, kW | NPSH, m |
|---|---|---|---|---|---|
| 1K 50-32-125m | 12.5 | 23 | 2900 | 1.8 | 3.5 |
| 1K 50-32-125 | 12.5 | 21 | 2900 | 1.6 | 3.5 |
| 1K 50-32-125a | 12.5 | 19 | 2900 | 1.4 | 3.5 |
| 1K 50-32-125b | 10 | 16 | 2900 | 1.1 | 3.5 |
| 1K 65-50-160 | 25 | 32 | 2900 | 4.2 | 3.8 |
| 1K 65-50-160a | 19 | 31 | 2900 | 3.8 | 3.8 |
| 1K 65-50-160b | 19 | 25 | 2900 | 3 | 3.8 |
| 1K 80-65-160m | 50 | 38 | 2900 | 11.2 | 4 |
| 1K 80-65-160 | 50 | 35 | 2900 | 9 | 4 |
| 1K 80-65-160 | 50 | 32 | 2900 | 7 | 4 |

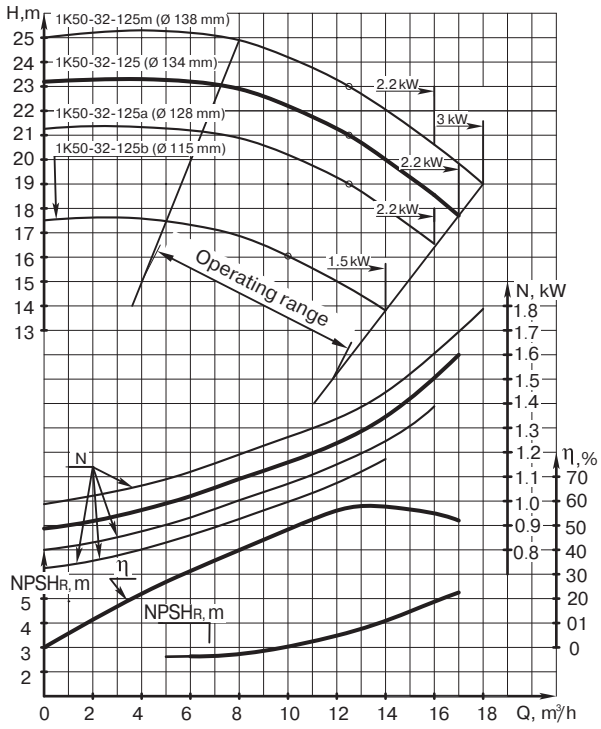
## TECHNICAL DATA

| Pump | Capacity, m³/h | Head, m | Rotation speed, rpm | Power, kW | NPSH, m |
|---|---|---|---|---|---|
| 1K 80-65-160a | 45 | 30 | 2900 | 6 | 4 |
| 1K 80-50-200m | 65 | 55 | 2900 | 18 | 3.5 |
| 1K 80-50-200 | 50 | 50 | 2900 | 13 | 3.5 |
| 1K 80-50-200a | 45 | 45 | 2900 | 12 | 3.5 |
| 1K 80-50-200b | 40 | 35 | 2900 | 8 | 3.5 |
| 1K 100-80-160 | 100 | 32 | 2900 | 12.8 | 4.5 |
| 1K 100-80-160m | 100 | 34 | 2900 | 14 | 4.5 |
| 1K 100-80-160a | 90 | 28 | 2900 | 11 | 4.5 |
| 1K 100-80-160b | 90 | 25 | 2900 | 9 | 4.5 |
| 1K 100-80-160v | 80 | 22 | 2900 | 9 | 4.5 |
| 1K 100-65-200m | 100 | 55 | 2900 | 25 | 4.5 |
| 1K 100-65-200 | 100 | 50 | 2900 | 22.5 | 4.5 |
| 1K 100-65-200a | 90 | 45 | 2900 | 18 | 4.5 |
| 1K 100-65-200b | 90 | 40 | 2900 | 16 | 4.5 |
| 1K 100-65-250m | 100 | 90 | 2900 | 47 | 4.5 |
| 1K 100-65-250 | 100 | 80 | 2900 | 37 | 4.5 |
| 1K 100-65-250a | 80 | 70 | 2900 | 33 | 4.5 |
| 1K 100-65-250b | 80 | 60 | 2900 | 25 | 4.5 |
| 1K 150-125-315m | 200 | 35 | 1450 | 35 | 4 |
| 1K 150-125-315 | 200 | 32 | 1450 | 30 | 4 |
| 1K 150-125-315a | 200 | 26 | 1450 | 22.5 | 4 |
| 1K 150-125-315b | 170 | 22 | 1450 | 18.5 | 4 |

## PERFORMANCE CURVE

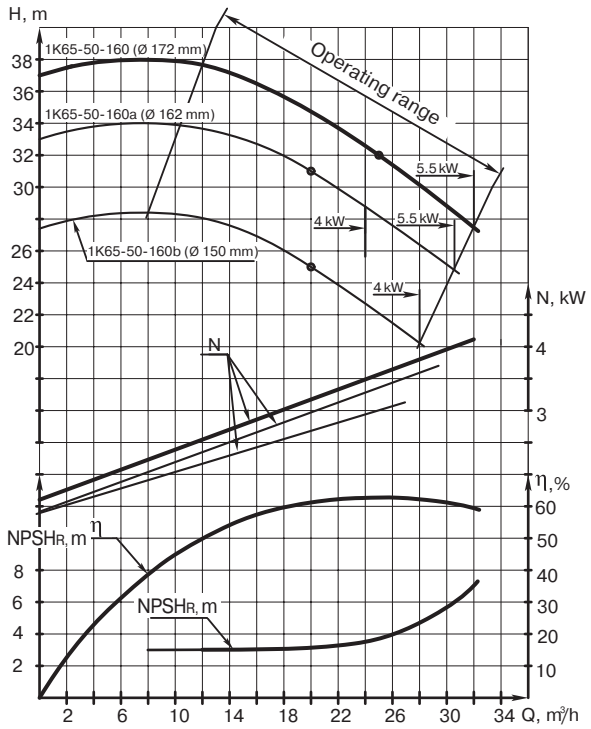
**1K 50–32–125**

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³




**1K 65–50–160**

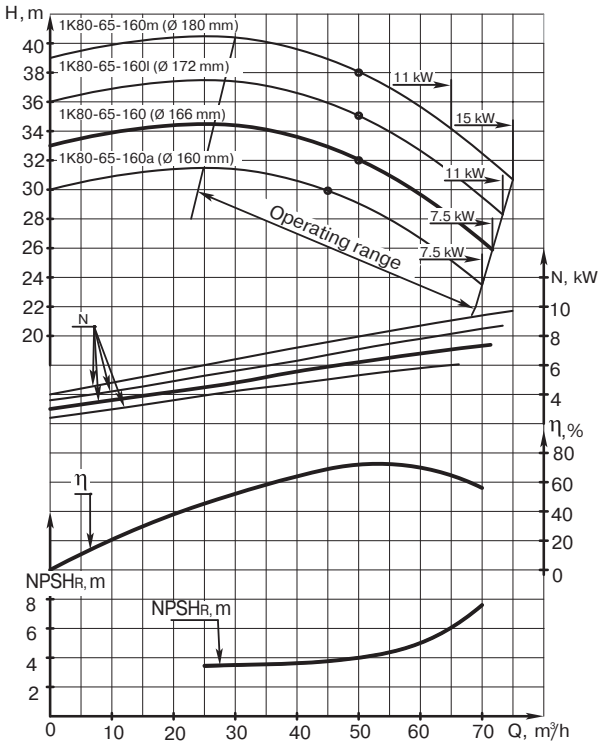
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³



## PERFORMANCE CURVE

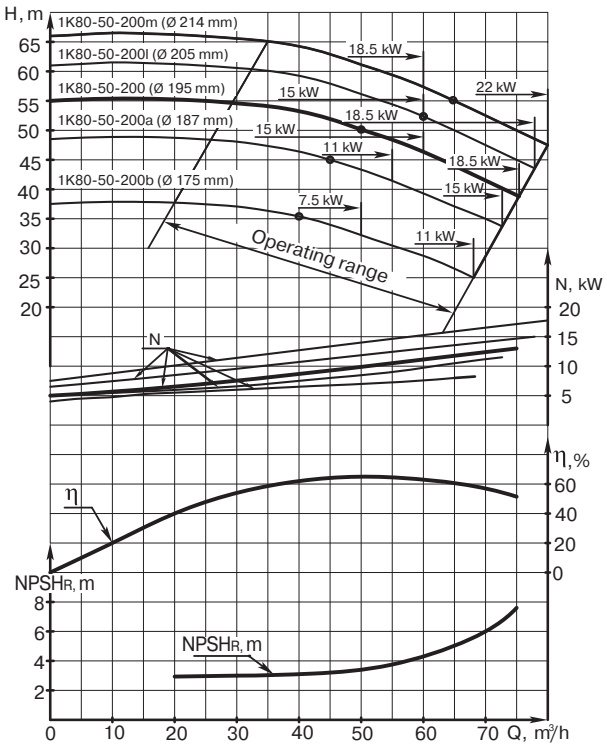
### 1K 80–65–160

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



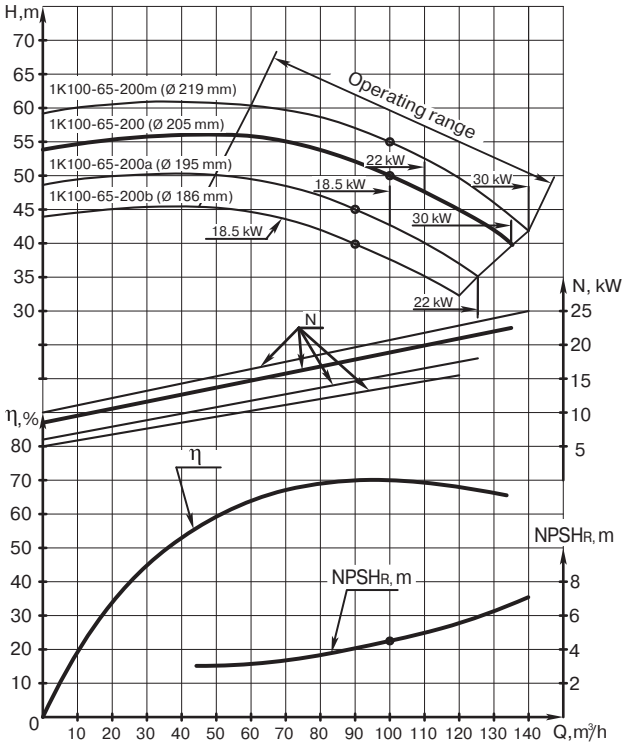

### 1K 80–50–200

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



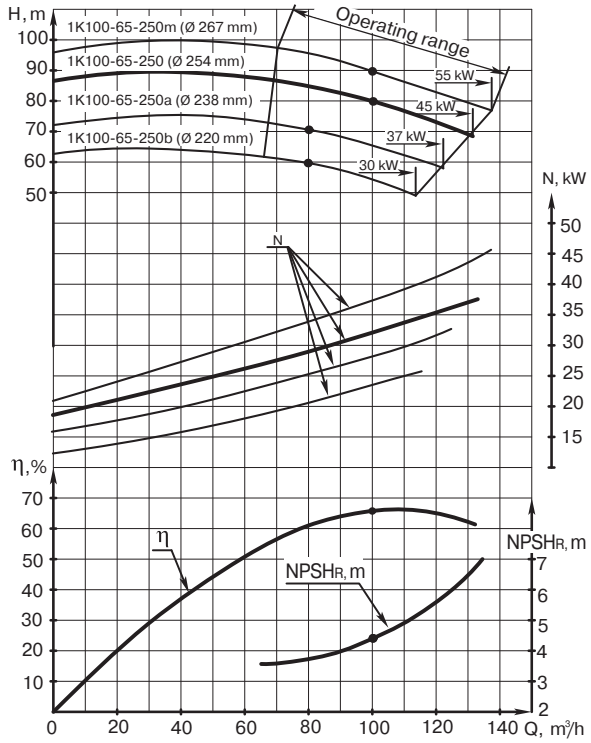

### 1K 100–65–200

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




### 1K 100–65–250

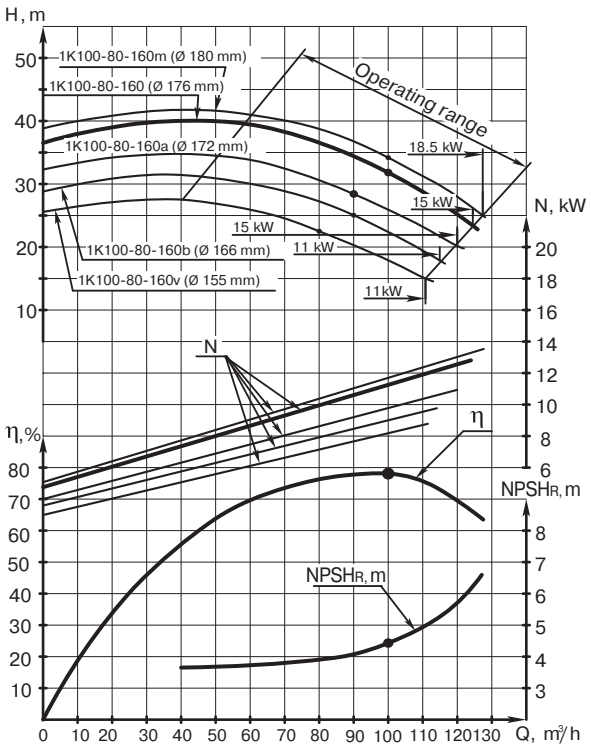
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



## PERFORMANCE CURVE

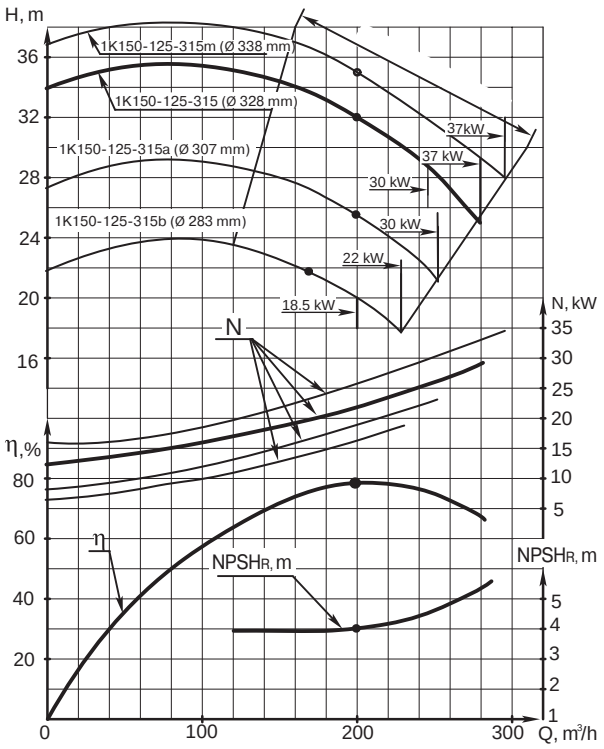
**1K 100–80–160**

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

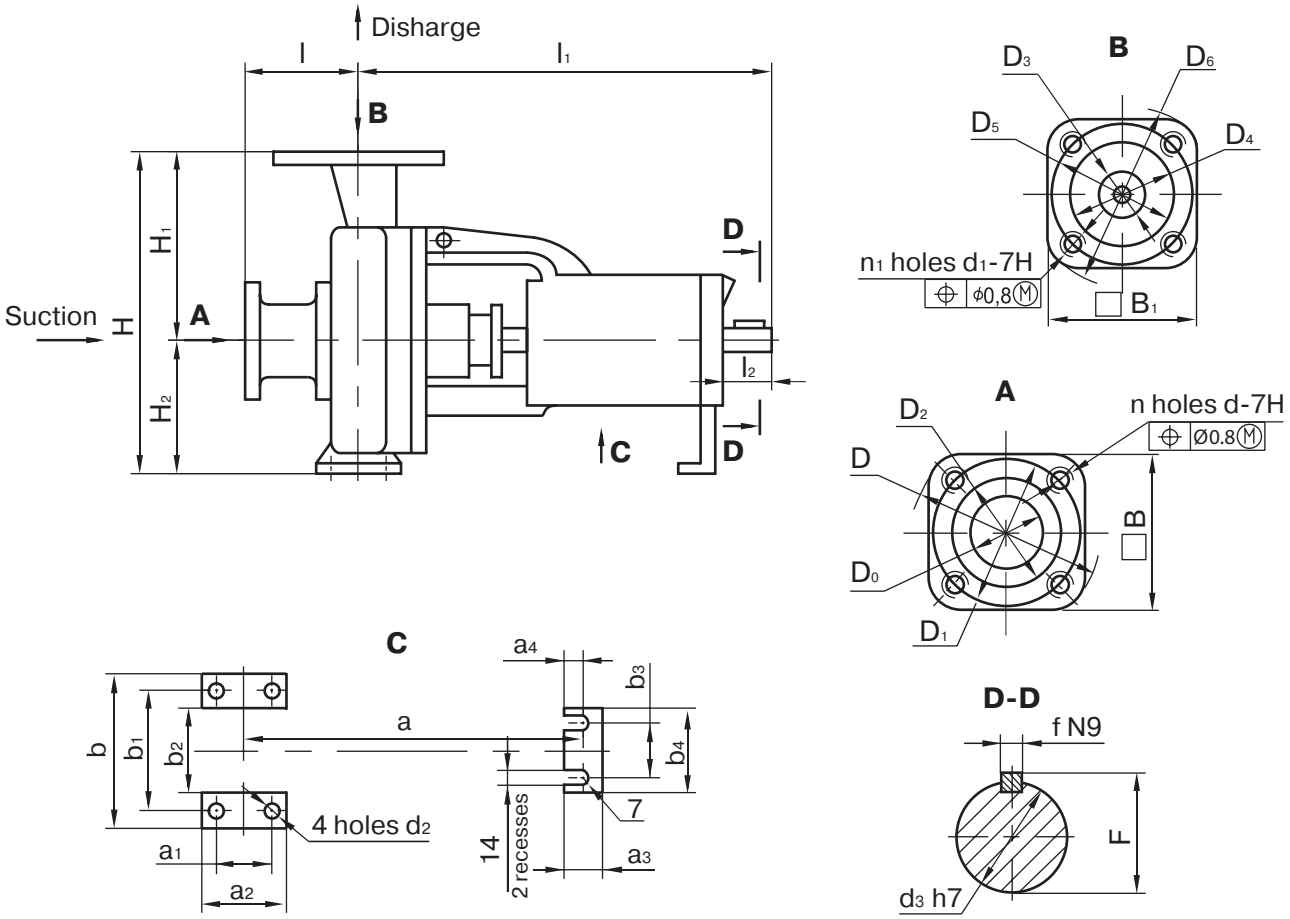



**1K 150–125–315**

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



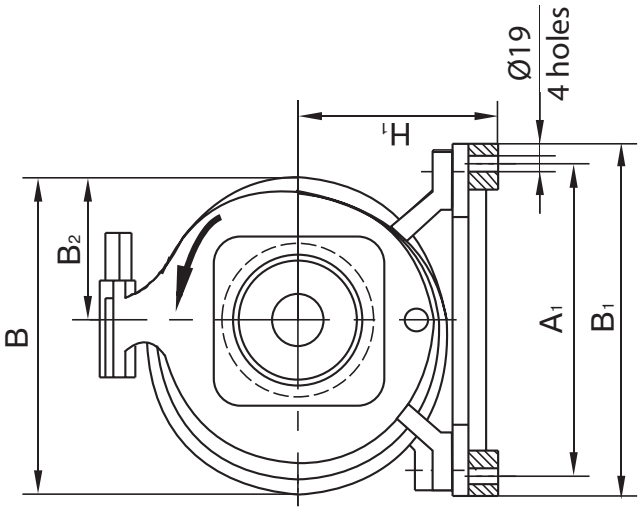
## PUMP OVERALL DIMENSIONS

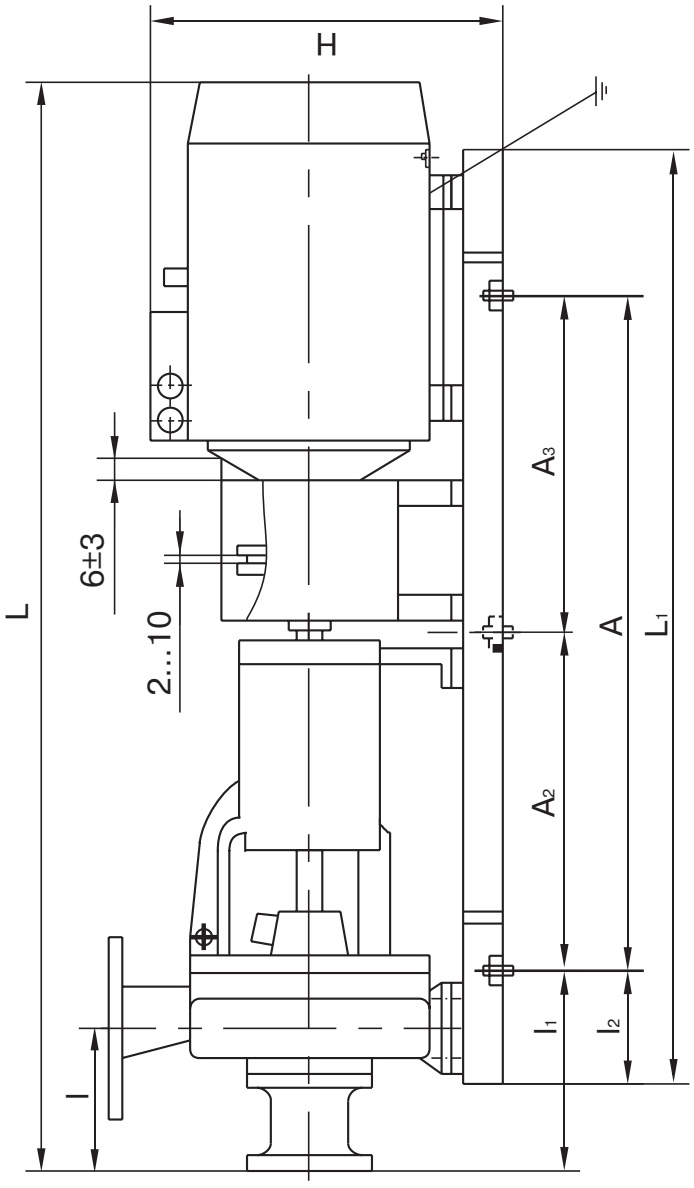



| Pump | Dimensions, mm | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | l | $l_1$ | $l_2$ | a | $a_1$ | $a_2$ | $a_3$ | $a_4$ | b | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $b_5$ | B | $B_1$ |
| 1K 80-50-200 | 100 | 385 | 50 | 285 | 70 | 100 | 45 | 16 | 265 | 212 | 165 | 110 | 145 | 14 | 140 | 125 |
| 1K 80-65-160 | 100 | 415 | 80 | 270 | 95±0.3 | 125 | 45 | 16 | 280 | 212 | 150 | 110 | 145 | | 150 | 140 |
| 1K 100-65-250 | 125 | 500 | 80 | 370 | 120 | 160 | 45 | 16 | 360 | 280 | 200 | 110 | 145 | | 155 | 140 |
| 1K 100-80-160 | 100 | 415 | 80 | 270 | 95±0.3 | 125 | 45 | 16 | 280 | 212 | 150 | 110 | 145 | | 155 | 150 |
| 1K 150-125-315 | 140 | 558 | 80 | 355 | 150 | 200 | 70 | 30 | 500 | 400 | 300 | 110 | 160 | | - | - |
| 1K 50-32-125 | 80 | 385 | 50 | 275 | 70 | 100 | 45 | 16 | 190 | 140 | 90 | 110 | 145 | | - | 105 |
| 1K 65-50-160 | 80 | 385 | 50 | 275 | 70 | 100 | 45 | 16 | 240 | 190 | 140 | 110 | 145 | | - | 125 |
| 1K 100-65-200 | 100 | 500 | 80 | 370 | 95 | 125 | 45 | 16 | 320 | 250 | 190 | 110 | 145 | | - | - |

| Pump | D | $D_0$ | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | d | $d_1$ | $d_2$ | $d_3$ | H | $H_1$ | $H_2$ | n | $n_1$ | f(N9) | F | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1K 80-50-200 | 185 | 80 | 150 | 128 | 50 | 102 | 125 | 160 | M16 | M16 | 14 | 32 | 360 | 200 | 160 | 4 | 4 | 10 (-0.036) | 35 | 58 |
| 1K 80-65-160 | 195 | 80 | 160 | 133 | 65 | 122 | 145 | 180 | | | 14 | | 360 | 200 | 160 | | | | 35 | 60 |
| 1K 100-65-250 | 205 | 100 | 170 | 148 | 65 | 122 | 145 | 180 | | | 18 | | 450 | 250 | 200 | | | | 35 | 90 |
| 1K 100-80-160 | 205 | 100 | 170 | 148 | 80 | 133 | 160 | 195 | | | 14 | | 385 | 225 | 160 | | | | 35 | 61 |
| 1K 150-125-315 | 260 | 150 | 225 | 202 | 125 | 184 | 210 | 245 | | | 24 | 42 | 635 | 355 | 280 | 8 | 8 | 12 (-0.043) | 45 | 180 |
| 1K 50-32-125 | 140 | 50 | 110 | 90 | 32 | 78 | 100 | 135 | M12 | M16 | 14 | 24 | 252 | 140 | 112 | 4 | 4 | 8 (-0.036) | 27 | 35 |
| 1K 65-50-160 | 180 | 65 | 145 | 122 | 50 | 102 | 125 | 160 | M16 | M16 | 14 | 24 | 292 | 160 | 132 | 4 | 4 | 8 (-0.036) | 27 | 50 |
| 1K 100-65-200 | 215 | 100 | 180 | 158 | 65 | 122 | 145 | 180 | 18 | 18 | 14 | 32 | 405 | 225 | 180 | 8 | 4 | 10 (-0.036) | 35 | 78 |

## UNIT OVERALL DIMENSIONS



## UNIT OVERALL DIMENSIONS

| Designation | Unit | Capacity, m³/h | Electric motor | | | | Dimensions, mm | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Power, kW | Rotation speed, rpm | Voltage, V | L | $L_1$ | I | $I_1$ | $I_2$ | A | $A_1$ | $A_2$ | $A_3$ | H | $H_1$ | V | $V_1$ | $V_2$ | |
| H49.899.00.00.000 | 1K 80-50-200m-s<br>1K 80-50-200m-t | 80 | AIR180S2 | 22 | 50 (3000) | 220, 380 | 1120 | 950 | 100 | 173 | 150 | 620±1.1 | 230±1.1 | - | - | 575 | 315 | 375 | 324 | 200 | 272 |
| | | | A180S2 | | | | 1135 | | | | | | | | | 560 | | 350 | | 200 | 259 |
| | | | AIMR180S2 | | | | 1190 | | | | | | | | | 670 | | 400 | | 210 | 322 |
| | | | BA180S2 | | | | 1135 | | | | | | | | | 635 | | 400 | | 230 | 296 |
| | | 65 | AIR160M2 | 18.5 | | | 1135 | | | | | | | | | 540 | | 350 | | 200 | 240 |
| | | | 5A160M2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 200 | 248 |
| | | | AIMR160M2 | | | | 1220 | | | | | | | | | 630 | | 350 | | 210 | 277 |
| | | | VA160M2 | | | | 1135 | | | | | | | | | 653 | | 350 | | 230 | 277 |
| | 1K 80-50-200l-s<br>1K 80-50-200l-t | 78 | AIR160M2 | 18.5 | | | 1135 | | | | | | | | | 540 | | 350 | | 200 | 240 |
| | | | 5A160M2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 200 | 248 |
| | | | AIMR160M2 | | | | 1220 | | | | | | | | | 630 | | 350 | | 210 | 277 |
| | | | VA160M2 | | | | 1135 | | | | | | | | | 653 | | 350 | | 230 | 277 |
| | 1K 80-50-200l-s<br>1K 80-50-500l-t | 60 | AIR160S2 | 15 | | | 1095 | | | | | | | | | 540 | | 350 | | 200 | 226 |
| | | | 5A160S2 | | | | 1160 | | | | | | | | | 537 | | 334 | | 200 | 236 |
| | | | AIMR160S 2 | | | | 1180 | | | | | | | | | 630 | | 350 | | 210 | 262 |
| | | | BA160S2 | | | | 1095 | | | | | | | | | 655 | | 350 | | 230 | 257 |
| | 1K 80-50-200-s<br>1K 80-50-200-t | 75 | AIR160M2 | 18.5 | | | 1135 | | | | | | | | | 540 | | 350 | | 200 | 240 |
| | | | 5A160M2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 200 | 248 |
| | | | AIMR160M2 | | | | 1220 | | | | | | | | | 630 | | 350 | | 210 | 277 |
| | | | VA160M2 | | | | 1135 | | | | | | | | | 653 | | 350 | | 230 | 277 |
| | 1K 80-50-200-s<br>1K 80-50-200-t | 60 | AIR160S2 | 15 | | | 1095 | | | | | | | | | 540 | | 350 | | 200 | 226 |
| | | | 5A160S2 | | | | 1160 | | | | | | | | | 537 | | 334 | | 200 | 236 |
| | | | AIMR160S2 | | | | 1180 | | | | | | | | | 630 | | 350 | | 210 | 262 |
| | | | BA160S2 | | | | 1095 | | | | | | | | | 653 | | 350 | | 230 | 257 |
| | 1K 80-50-200a-s<br>1K 80-50-200a-t | 70 | AIR160S2 | 15 | | | 1095 | | | | | | | | | 540 | | 350 | | 200 | 226 |
| | | | 5A160S2 | | | | 1160 | | | | | | | | | 537 | | 334 | | 200 | 236 |
| | | | AIMR160S2 | | | | 1180 | | | | | | | | | 630 | | 350 | | 210 | 262 |
| | | | BA160S2 | | | | 1095 | | | | | | | | | 653 | | 350 | | 230 | 257 |
| | 1K 80-50-200a-s<br>1K 80-50-200a-t | 56 | AIRM132M2 | 11 | | | 990 | 895 | | | | 600±1.1 | | | | 490 | 290 | 296 | | 200 | 188 |
| | | | A132M2 | | | | 995 | | | | | | | | | | | | | 200 | 185 |
| | | | AIM132M2 | | | | 1052 | | | | | | | | | | | | | 157 | 237 |
| | | | VA132M2 | | | | 990 | | | | | | | | | | | | | 200 | 225 |

## UNIT OVERALL DIMENSIONS

| Designation | Unit | Capacity, $m^3/h$ | Electric motor | | | | Dimensions, mm | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Power, kW | Rotation speed, rpm | Voltage, V | L | $L_1$ | l | $l_1$ | $l_2$ | A | $A_1$ | $A_2$ | $A_3$ | H | $H_1$ | V | $V_1$ | $V_2$ | |
| H49.899.00.00.000 | 1K 80-50-200b-s<br>1K 80-50-200b-t | 64 | AIRM132M2 | 11 | 50 (3000) | 220, 380 | 990 | 895 | 100 | 173 | 150 | 600±1.1 | 230±1.1 | - | - | 490 | 290 | 296 | 324 | 200 | 188 |
| | | | A132M2 | | | | 995 | | | | | | | | | | | | | 200 | 185 |
| | | | AIM132M2 | | | | 1052 | | | | | | | | | | | | | 157 | 237 |
| | | | VA132M2 | | | | 990 | | | | | | | | | | | | | 200 | 225 |
| | 1K 80-50-200b-s<br>1K 80-50-200b-t | 48 | 5AM112M2 | 7.5 | | | 970 | 825 | 100 | 173 | 150 | | | - | - | 460 | 290 | 296 | 324 | 200 | 165 |
| | | | A112M2 | | | | 995 | | | | | | | | | 490 | | | | | 177 |
| | | | AIR112M2 | | | | 925 | | | | | | | | | 450 | | | | | 148 |
| | | | AIM112M2 | | | | 990 | | | | | | | | | 595 | | | | | 188 |
| | | | VA112M2 | | | | 985 | | | | | | | | | 560 | | | | | 187 |
| H49.901.00.00.000 | 1K 100-65-250m-s<br>1K 100-65-250m-t | 140 | 5A225M2 | 55 | | | 1470 | 1200 | 125 | 170 | 140 | 960±1.1 | 300±1.1 | 480±1.1 | | 685 | 375 | 458 | 410 | 210 | 510 |
| | | | A225M2 | | | | 1475 | | | | | | | | | 665 | 375 | 415 | | | 500 |
| | | | VA225M2 | | | | 1475 | | | | | | | | | 760 | 375 | 445 | | | 541 |
| | | | 5AN200M2 | | | | 1355 | | | | | | | | | 645 | 355 | 422 | | | 420 |
| | 1K 100-65-250-s<br>1K 100-65-250-t | 127 | 5A200L2 | 45 | | | 1416 | | | | | | | | | 640 | 355 | 410 | | | 426 |
| | | | A200L2 | | | | 1440 | | | | | | | | | 630 | | 380 | | | 425 |
| | | | BA200L2 | | | | 1440 | | | | | | | | | 715 | | 410 | | | 486 |
| | | | 4AMN180M2 | | | | 1255 | | | | | | | | | 645 | | 380 | | | 351 |
| | 1K 100-65-250a-s<br>1K 100-65-250a-t | 120 | 5A200M2 | 37 | | | 1370 | | | | | | | | | 640 | | 410 | | | 405 |
| | | | A200M2 | | | | 1440 | | | | | | | | | 630 | | 380 | | | 401 |
| | | | VA200M2 | | | | 1440 | | | | | | | | | 715 | | 410 | | | 465 |
| | | | 4AMN180S2 | | | | 1215 | | | | | | | | | 645 | | 380 | | | 336 |
| | 1K 100-65-250b-s<br>1K 100-65-250b-t | 112 | AIR180M2 | 30 | | | 1315 | 1150 | | | | | | | | 615 | | 380 | | | 346 |
| | | | A180M2 | | | | 1340 | | | | | | | | | 600 | | | | | 336 |
| | | | VA180M2 | | | | 1365 | | | | | | | | | 700 | | | | | 387 |
| H49.908.00.00.000 | 1K 150-125-315m-s<br>1K 150-125-315m-t | 296 | 5A200M4 | 37 | 25 (1500) | | 1470 | 1317 | 140 | 175 | 150 | 1000 | 400±1.1 | 500±1.1 | | 720 | 435 | 491 | 496 | 272 | 530 |
| | | | A200M4 | | | | 1455 | 1317 | | | | 1000 | | 500±1.1 | | 710 | | | | 272 | 514 |
| | | | VA200M4 | | | | 1500 | 1317 | | | | 1000 | | 500±1.1 | | 795 | | | | 305 | 580 |
| | | | 4AMN180M4 | | | | 1325 | 1197 | | | | 900 | | 450±1.1 | | 730 | | | | 272 | 490 |
| | 1K 150-125-315-s<br>1K 150-125-315-t | 280 | 5A200M4 | 37 | | | 1470 | 1317 | | | | 1000 | | 500±1.1 | | 720 | | | | 272 | 530 |
| | | | A200M4 | | | | 1455 | 1317 | | | | 1000 | | 500±1.1 | | 710 | | | | 272 | 514 |
| | | | VA200M4 | | | | 1500 | 1317 | | | | 1000 | | 500±1.1 | | 795 | | | | 305 | 580 |
| | | | 4AMN180M4 | | | | 1325 | 1197 | | | | 900 | | 450±1.1 | | 730 | | | | 272 | 490 |

## UNIT OVERALL DIMENSIONS

| Designation | Unit | Capacity, $m^3/h$ | Electric motor | | | | Dimensions. mm | | | | | | | | | | | | | | Weight,kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Power, kW | Rotation speed, rpm | Voltage, V | L | $L_1$ | I | $l_1$ | $l_2$ | A | $A_1$ | $A_2$ | $A_3$ | N | $N_1$ | B | $B_1$ | $B_2$ | |
| H49.908.00.00.000 | 1K 150-125-315-s<br>1K 150-125-315-t | 245 | AIR180M4 | 30 | 25 (1500) | 220, 380 | 1410 | 1197 | 140 | 175 | 150 | 900 | 400±1.1 | 450±1.1 | | 700 | 435 | 491 | 496 | 272 | 490 |
| | | | A180M4 | | | | 1385 | | | | | | | | | 680 | | | | 272 | 490 |
| | | | 4AMN180S4 | | | | 1285 | | | | | | | | | 730 | | | | 272 | 470 |
| | | | VA180M4 | | | | 1460 | | | | | | | | | 780 | | | | 305 | 534 |
| | 1K 150-125-315a-s<br>1K 150-125-315a-t | 250 | AIR180M4 | 30 | | | 1410 | | | | | | | | | 700 | | | | 272 | 490 |
| | | | A180M4 | | | | 1385 | | | | | | | | | 680 | | | | 272 | 490 |
| | | | 4AMN180S4 | | | | 1285 | | | | | | | | | 730 | | | | 272 | 470 |
| | | | VA180M4 | | | | 1460 | | | | | | | | | 780 | | | | 305 | 534 |
| | 1K 150-125-315b-s<br>1K 150-125-315b-t | 230 | AIR180S4 | 22 | | | 1335 | | | | | | | | | 700 | | | | 272 | 470 |
| | | | A180S4 | | | | 1350 | | | | | | | | | 680 | | | | 272 | 457 |
| | | | VA180S4 | | | | 1345 | | | | | | | | | 780 | | | | 305 | 505 |
| | 1K 150-125-315b-s<br>1K 150-125-315b-t | 200 | AIR160M4 | 18.5 | | | 1350 | 1162 | | | | | | 425±1 | | 680 | | | | 272 | 442 |
| | | | 5A160M4 | | | | 1405 | | | | | | | | | 680 | | | | 272 | 440 |
| | | | VA160M4 | | | | 1445 | | | | | | | | | 795 | | | | 272 | 490 |
| H49.949.00.00.000 | 1K 80-65-160m-s<br>1K 80-65-160m-t | 75 | AIR160S2 | 15 | 50 (3000) | 220, 380 | 1125 | 975 | 100 | 178 | 150 | 620±1.1 | 600±1.1 | - | - | 540 | 295 | 350 | 324 | 160 | 222 |
| | | | 5A160S2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 196 | 232 |
| | | | AIMR160S2 | | | | 1210 | | | | | | | | | 630 | | 350 | | 210 | 256 |
| | | | VA160S2 | | | | 1125 | | | | | | | | | 655 | | 350 | | 230 | 252 |
| | 1K 80-65-160m-s<br>1K 80-65-160m-t | 65 | A132M2 | 11 | | | 1025 | 895 | | | | | | | | 490 | | 270 | | 145 | 182 |
| | | | AIRM132M2 | | | | 1018 | | | | | | | | | 485 | | 290 | | 145 | 185 |
| | | | AIM132M2 | | | | 1080 | | | | | | | | | 615 | | 270 | | 157 | 233 |
| | | | VA132M2 | | | | 1020 | | | | | | | | | 560 | | 290 | | 200 | 208 |
| | 1K 80-65-160l-s<br>1K 80-65-160l-t | 70 | A132M2 | 11 | | | 1025 | | | | | | | | | 490 | | 270 | | 145 | 182 |
| | | | AIRM132M2 | | | | 1018 | | | | | | | | | 485 | | 290 | | 145 | 185 |
| | | | AIM132M2 | | | | 1080 | | | | | | | | | 615 | | 270 | | 157 | 233 |
| | | | VA132M2 | | | | 1020 | | | | | | | | | 560 | | 290 | | 200 | 208 |
| | 1K 80-65-160-s<br>1K 80-65-160-t | 65 | A112M2 | 7.5 | | | 1025 | 825 | | | | | | | | 470 | | 270 | | 145 | 173 |
| | | | 5AM112M2 | | | | 1000 | | | | | | | | | 460 | | | | 145 | 161 |
| | | | AIR112M2 | | | | 953 | | | | | | | | | 450 | | | | 145 | 144 |
| | | | AIM112M2 | | | | 1020 | | | | | | | | | 580 | | | | 200 | 184 |
| | | | VA112M2 | | | | 1015 | | | | | | | | | 525 | | | | 200 | 183 |

## UNIT OVERALL DIMENSIONS

| Designation | Unit | Capacity, $m^3/h$ | Electric motor | | | | Dimensions. mm | | | | | | | | | | | | | | Weight,kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Power, kW | Rotation speed, rpm | Voltage, V | L | $L_1$ | I | $l_1$ | $l_2$ | A | $A_1$ | $A_2$ | $A_3$ | H | $H_1$ | V | $V_1$ | $V_2$ | |
| H49.949.00.00.000 | 1K 80-65-160a-s<br>1K 80-65-160a-t | 55 | A112M2 | 7.5 | 50 (3000) | 220, 380 | 1025 | 825 | 100 | 178 | 150 | 600±1.1 | 230±1.1 | - | - | 470 | 290 | 270 | 324 | 145 | 173 |
| | | | 5AM112M2 | | | | 1000 | | | | | | | | | 460 | | | | 145 | 161 |
| | | | AIR112M2 | | | | 953 | | | | | | | | | 450 | | | | 145 | 144 |
| | | | AIM112M2 | | | | 1020 | | | | | | | | | 580 | | | | 200 | 184 |
| | | | VA112M2 | | | | 1015 | | | | | | | | | 525 | | | | 200 | 183 |
| | 1K 100-80-16Om-s<br>1K 100-80-16Om-t | 128 | AIR160M2 | 18.5 | | | 1165 | 975 | | | | 620±1.1 | | - | - | 540 | 295 | 350 | 324 | 160 | 238 |
| | | | 5A160M2 | | | | 1220 | | | | | | | | | 537 | | 334 | | 196 | 245 |
| | | | AIMR160M2 | | | | 1260 | | | | | | | | | 630 | | 350 | | 210 | 273 |
| | | | VA160M2 | | | | 1175 | | | | | | | | | 655 | | 350 | | 230 | 273 |
| | 1K 100-80-160-s<br>1K 100-80-160-t | 125 | AIR160S2 | 15 | | | 1125 | | | | | | | - | - | 540 | | 350 | | 160 | 224 |
| | | | 5A160S2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 196 | 234 |
| | | | AIMR160S2 | | | | 1220 | | | | | | | | | 630 | | 350 | | 210 | 258 |
| | | | BA160S2 | | | | 1135 | | | | | | | | | 655 | | 350 | | 230 | 253 |
| | 1K 100-80-16Oa-s<br>1K 100-80-16Oa-t | 120 | AIR160S2 | 15 | | | 1125 | | | | | | | - | - | 540 | | 350 | | 160 | 224 |
| | | | 5A160S2 | | | | 1190 | | | | | | | | | 537 | | 334 | | 196 | 234 |
| | | | AIMR160S2 | | | | 1220 | | | | | | | | | 630 | | 350 | | 210 | 258 |
| | | | VA160S2 | | | | 1135 | | | | | | | | | 655 | | 350 | | 230 | 253 |
| | 1K 100-80-160b-s<br>1K 100-80-160b-t | 115 | A132M2 | 11 | | | 1025 | | | | | | | - | - | 490 | | 285 | | 155 | 182 |
| | | | AIRM132M2 | | | | 1018 | | | | | | | | | 485 | | 288 | | 155 | 185 |
| | | | AIM132M2 | | | | 1090 | | | | | | | | | 610 | | 290 | | 157 | 230 |
| | | | VA132M2 | | | | 1030 | | | | | | | | | 555 | | 290 | | 200 | 205 |
| | 1K 100-80-16Ov-s<br>1K 100-80-16Ov-t | 110 | A132M2 | 11 | | | 1025 | | | | | | | - | - | 490 | | 285 | | 155 | 182 |
| | | | AIRM132M2 | | | | 1018 | | | | | | | | | 485 | | 288 | | 155 | 185 |
| | | | AIM132M2 | | | | 1090 | | | | | | | | | 610 | | 290 | | 157 | 230 |
| | | | VA132M2 | | | | 1030 | | | | | | | | | 555 | | 290 | | 200 | 205 |
| H49.956.00.00.000 | 1K 100-65-200m-s<br>1K 100-65-200m-t | 140 | AIR180M2 | 30 | | | 1285 | 1095 | 100 | 120 | 100 | 840±1.1 | 240±1.1 | 420±1.1 | | 590 | 330 | 365 | 335 | 195 | 322 |
| | | | A180M2 | | | | 1310 | | | | | | | | | 575 | | 345 | | 175 | 312 |
| | | | VA180M2 | | | | 1335 | | | | | | | | | 670 | | 380 | | 305 | 363 |
| | 1K 100-65-200-s<br>1K 100-65-200-t | 135 | AIR180M2 | 30 | | | 1285 | | | | | | | | | 590 | | 365 | | 195 | 322 |
| | | | A180M2 | | | | 1310 | | | | | | | | | 575 | | 345 | | 175 | 312 |
| | | | VA180M2 | | | | 1335 | | | | | | | | | 670 | | 380 | | 305 | 363 |

## UNIT OVERALL DIMENSIONS

| Designation | Unit | Capacity, $m^3/h$ | Electric motor | | | Dimensions, mm | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Power, kW | Rotation speed, rpm | Voltage, V | L | $L_1$ | l | $l_1$ | $l_2$ | A | $A_1$ | $A_2$ | $A_3$ | H | $H_1$ | V | $V_1$ | $V_2$ | |
| H49.956.00.00.000 | 1K 100-65-200-s<br>1K 100-65-200-t | 110 | AIR180S2 | 22 | 50 (3000) | 220, 380 | 1235 | 1095 | 100 | 120 | 100 | 840±1.1 | 240±1.1 | 420±1.1 | | 590 | 330 | 365 | 335 | 195 | 302 |
| | | | A180S2 | | | | 1250 | | | | | | | | | 575 | | 345 | | 175 | 289 |
| | | | VA180S2 | | | | 1250 | | | | | | | | | 640 | | 400 | | 305 | 342 |
| | 1K 100-65-200a-s<br>1K 100-65-200a-t | 125 | AIR180S2 | 22 | | | 1235 | | | | | | | | | 590 | | 365 | | 195 | 302 |
| | | | A180S2 | | | | 1250 | | | | | | | | | 575 | | 345 | | 175 | 289 |
| | | | VA180S2 | | | | 1250 | | | | | | | | | 640 | | 400 | | 305 | 342 |
| | | 100 | 5A160M2 | 18.5 | | | 1305 | | | | | | | | | 555 | 310 | 365 | | 195 | 280 |
| | | | AIR160M2 | | | | 1210 | | | | | | | | | 555 | | 345 | | 175 | 273 |
| | | | VA160M2 | | | | 1345 | | | | | | | | | 640 | | 345 | | 260 | 322 |
| | 1K 100-65-200b-s<br>1K 100-65-200b-t | 120 | 5A160M2 | 18.5 | | | 1305 | | | | | | | | | 555 | | 365 | | 195 | 280 |
| | | | AIR160M2 | | | | 1210 | | | | | | | | | 555 | | 345 | | 175 | 273 |
| | | | VA160M2 | | | | 1345 | | | | | | | | | 640 | | 345 | | 260 | 322 |
| H49.957.00.00.000 | 1K 65-50-160-s<br>1K 65-50-160-t | 32 | AIR100L2 | 5.5 | | | 892 | 775 | 80 | 140 | 122 | 480±1.1 | 320±1.1 | - | - | 352 | 192 | 226 | 365 | 113 | 95 |
| | | | AIM100L2 | | | | 920 | | | | | | | | | | | | | | 130 |
| | 1K 65-50-160a-s<br>1K 65-50-160a-t | 32 | AIR100L2 | 5.5 | | | 892 | | | | | | | | | | | | | | 95 |
| | | | AIM100L2 | | | | 920 | | | | | | | | | | | | | | 130 |
| | 1K 65-50-160a-s<br>1K 65-50-160a-t | 24 | AIR100S2 | 4.0 | | | 862 | | | | | | | | | | | | | | 89 |
| | | | AIM100S2 | | | | 902 | | | | | | | | | | | | | | 130 |
| | 1K 65-50-160b-s<br>1K 65-50-160b-t | 28 | AIR100S2 | 4.0 | | | 862 | | | | | | | | | | | | | | 89 |
| | | | AIM100S2 | | | | 902 | | | | | | | | | | | | | | 130 |
| H49.958.00.00.000 | 1K 50-32-125m-s<br>1K 50-32-125m-t | 18 | AIR90L2 | 3 | | | 837 | 745 | 80 | 130 | 112 | 450±1.1 | 270±1.1 | - | - | 312 | 172 | 180 | 318 | 90 | 68 |
| | | | AIM90L2 | | | | 860 | | | | | | | | | | | | | | 113 |
| | 1K 50-32-125m-s<br>1K 50-32-125m-t | 16 | AIR80V2 | 2.2 | | | 820 | 710 | | | | | | | | | | | | | 64 |
| | | | AIM80V2 | | | | 830 | | | | | | | | | | | | | | 87 |
| | 1K 50-32-125-s<br>1K 50-32-125-t | 17 | AIR80V2 | 2.2 | | | 820 | | | | | | | | | | | | | | 64 |
| | | | AIM80V2 | | | | 830 | | | | | | | | | | | | | | 87 |
| | 1K 50-32-125a-s<br>1K 50-32-125a-t | 16 | AIR80V2 | 2.2 | | | 820 | | | | | | | | | | | | | | 64 |
| | | | AIM80V2 | | | | 830 | | | | | | | | | | | | | | 87 |
| | 1K 50-32-125b-s<br>1K 50-32-125b-t | 14 | AIR80A2 | 1.5 | | | 816 | | | | | | | | | | | | | | 61 |
| | | | AIM80A2 | | | | 830 | | | | | | | | | | | | | | 87 |

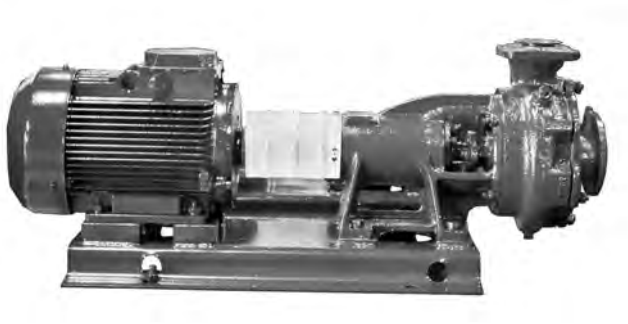
# K45/30 SERIES
## CENTRIFUGAL OVERHUNG END-SUCTION PUMPS

### APPLICATION

The centrifugal overhung end-suction pumps of the 1K series are intended for pumping of water (except sea water) and similar liquids by viscosity, density, and chemical activity.

- Hydrogen index (pH): 6.0 - 9.0
- Max temperature: +85 °C
- Max solids content: 1 %
- Max solids size: 0.2 mm

The pumps are not intended for operation in explosion and fire hazardous premises.



### PUMP SERIES DESIGNATION

**K 45/30**

K XX / XX

Pump series
Capacity, $m^3/h$
Head, m

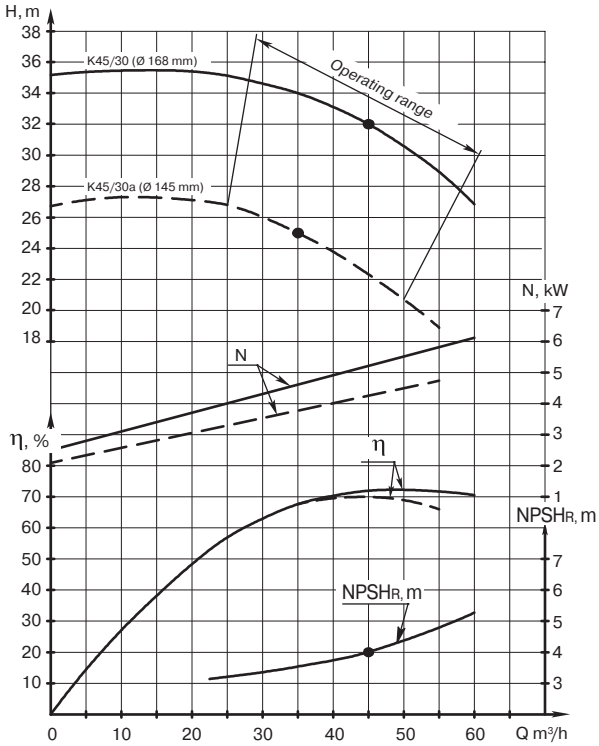
| TECHNICAL DATA | | |
|---|---|---|
| | **K 45/30** | **K 45/30a** |
| Capacity, $m^3/h$ (l/sec) | 45 (12.5) | 35 (9.7) |
| Head, m | 32 | 25 |
| Rotation speed, $s^{-1}$ (rpm) | 48 (2900) | |
| Pump max suction pressure, bar ($kgf/cm^2$) | 2.5 | |
| Max NPSH, m | 4.0 | |
| Leakage through the gland seal, $m^3/h$ (l/sec) | 0.3 -1.5x$10^{-3}$ (0.3 -1.5) | |
| Pump minimal efficiency, % | 72 | 70 |
| Power, kW | 6.5 | 5.0 |
| Weight, kg | 49.5 | |
| Power supply | ~ 220 / 380 V; 50 Hz | |

The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 $kg/m^3$

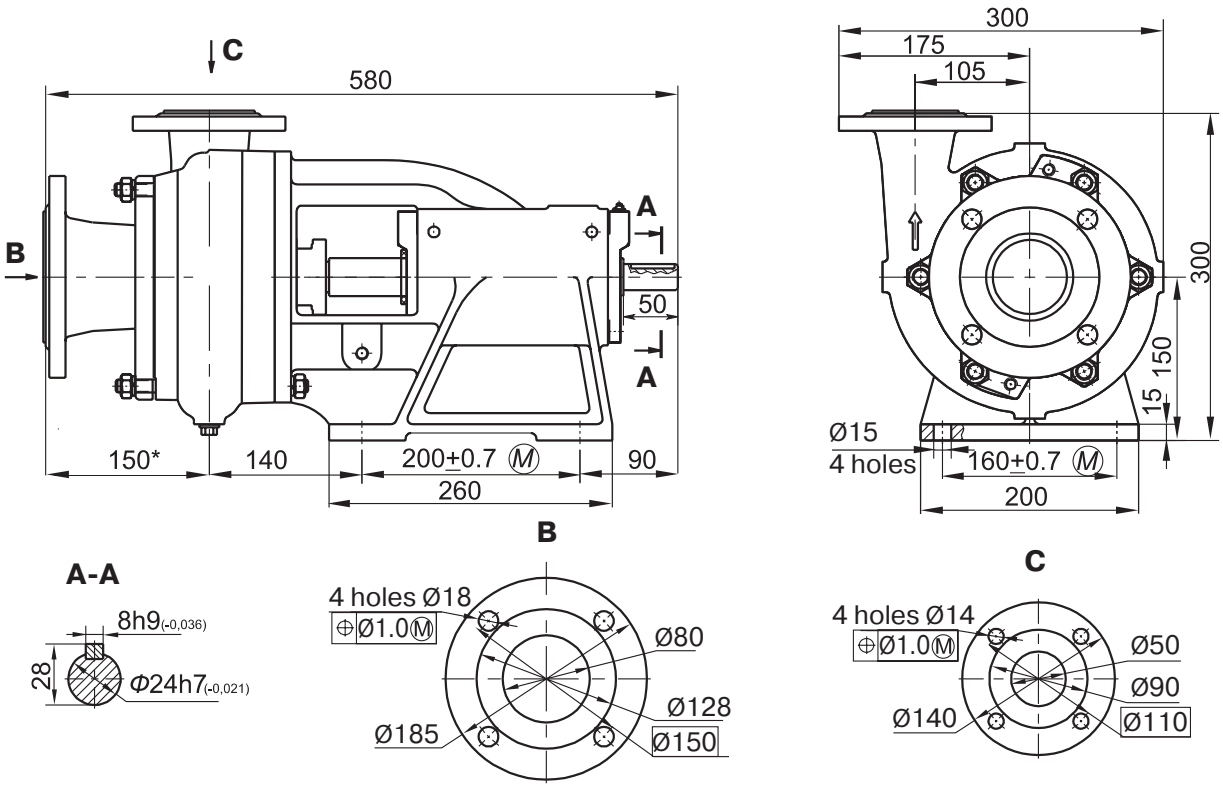
## PERFORMANCE CURVE

**K 45/30**

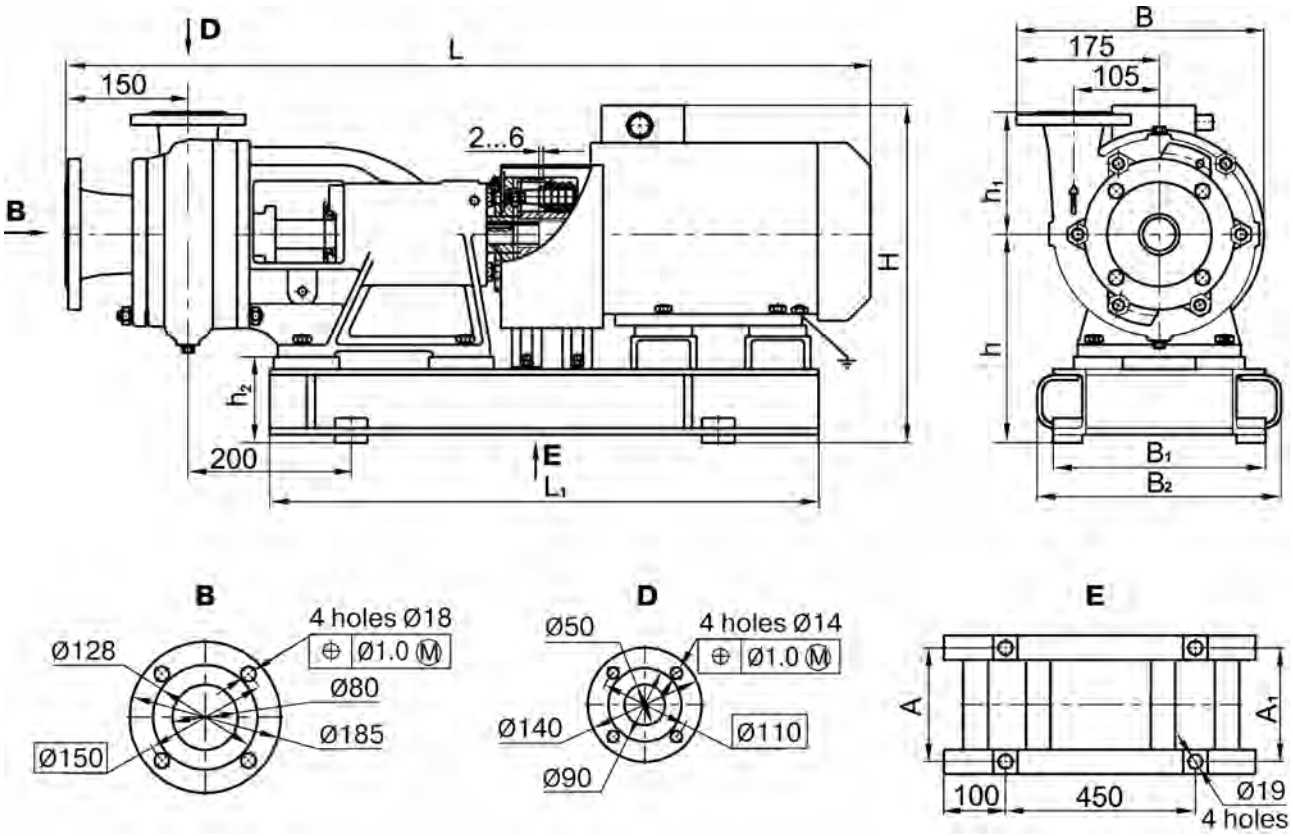
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




## PUMP OVERALL DIMENSIONS



## UNIT OVERALL DIMENSIONS




| Unit | Electric motor | | Dimensions, mm | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Power, kW | L | $L_1$ | A | $A_1$ | h | $h_1$ | $h_2$ | B | $B_1$ | $B_2$ | H | |
| K 45/30 | AIR112M2U3 | 7.5 | 1035 | 690 | 225 | 225 | 255 | 150 | 105 | 300 | 260 | 300 | 415 | 118 |
| | 5AM112M2U3 | | 1085 | | | | | | | | | | 425 | 135 |
| | A112M2U3 | | 1100 | | | | | | | | | | 455 | 148 |
| | AIRM112M2U3 | | 1040 | | | | | | | | | | 428 | 127 |
| K 45/30a | AIR100L2U3 | 5.5 | 995 | 660 | | | | | | 290 | | | 405 | 110 |
| | A100L2U3 | | 1025 | | | | | | | 285 | | | 435 | 97 |
| K 45/30 | AIR112M2U3 | 7.5 | 1035 | 690 | 250 | 290-320 | 215 | 150 | 65 | 300 | 360 | 360 | 375 | 119 |
| | 5AM112M2U3 | | 1085 | | | | | | | | | | 385 | 136 |
| | A112M2U3 | | 1100 | | | | | | | | | | 415 | 149 |
| | AIRM112M2U3 | | 1040 | | | | | | | | | | 388 | 128 |
| K 45/30a | AIR100L2U3 | 5.5 | 995 | 665 | | | | | | 290 | | | 365 | 109 |
| | A100L2U3 | | 1025 | | | | | | | 285 | | | 395 | 106 |

# 1K8/18 AND 1K20/30 SERIES
## CENTRIFUGAL OVERHUNG END-SUCTION PUMPS

### APPLICATION

The centrifugal overhung end-suction pumps of the 1K 8/18 and 1K 20/30 series are intended for pumping of water (except sea water) and similar liquids by viscosity, density, and chemical activity.

- Hydrogen index (pH): 6.0 - 9.0
- Max temperature: + 85 °C
- Max solids content: 1 %
- Max solids size: 0.2 mm

The pumps are not intended for operation in explosion and fire hazardous premises.

### PUMP SERIES DESIGNATION

**1K 8/18a**

1 K XX / XX x

Model version
Pump series
Capacity, $m^3/h$
Head, m
Impeller rated diameter, mm
**m** – increased impeller diameter
**a**, **b** – decreased impeller diameter

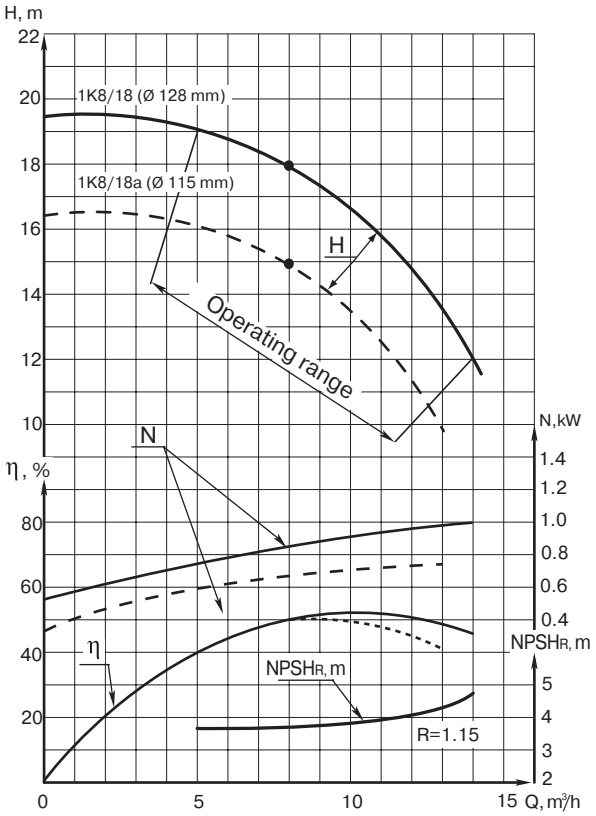
| TECHNICAL DATA | | |
|---|---|---|
| | **1K 8/18K** | **1K 20/30** |
| Capacity, $m^3/h$ (l/sec) | 8 (2.2) | 20 (5.6) |
| Head, m | 18 | 30 |
| Rotation speed, $s^{-1}$ (rpm) | 48 (2900) | |
| Pump max suction pressure, bar ($kgf/cm^2$) | 2.5 | |
| Max NPSH, m | 3.8 | |
| Leakage through the gland seal, $m^3/h$ (l/sec) | 0.3 - 1.5x$10^{-3}$ (0.3 - 1.5) | |
| Pump minimal efficiency, % | 53 | 64 |
| Power, kW | 1.2 | 3.5 |
| Power supply | ~ 220 / 380 V; 50 Hz | |

The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 $kg/m^3$

## PERFORMANCE CURVE

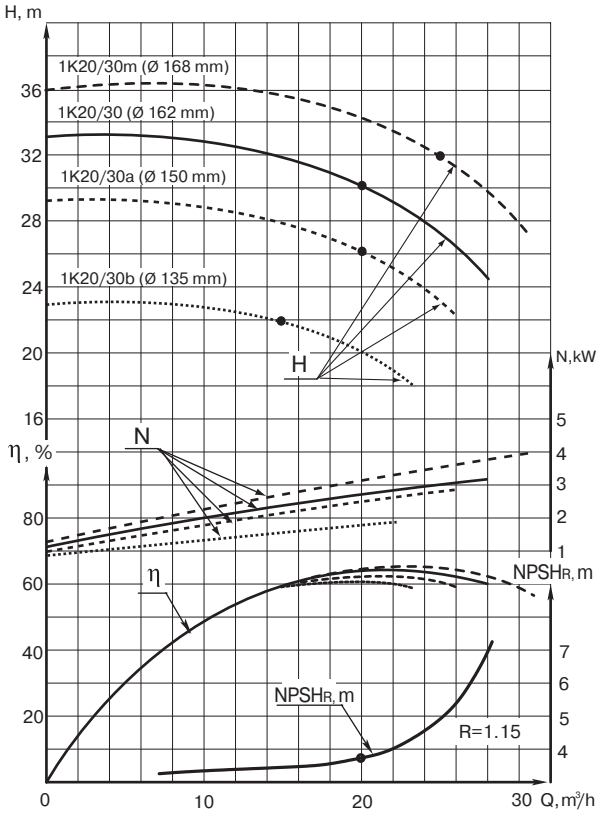
**1K 8/18**

rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

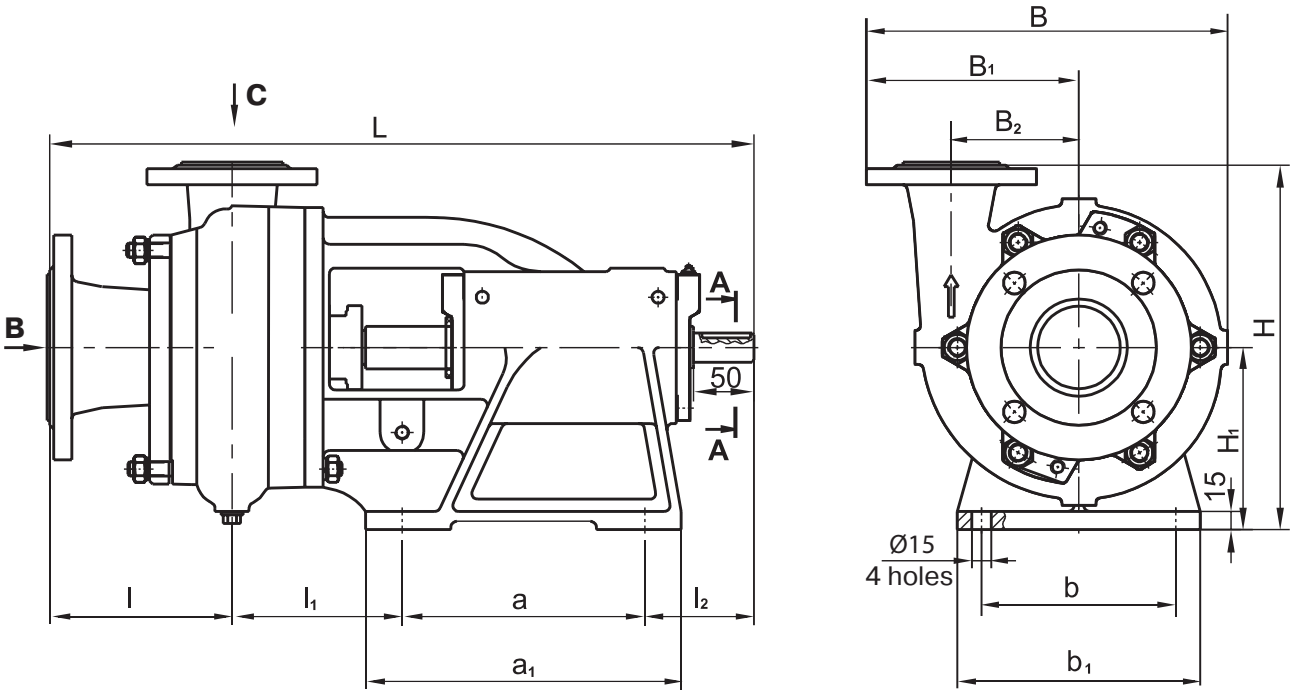


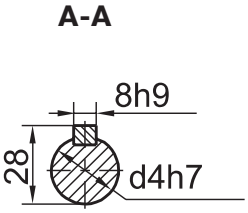

**1K 20/30**

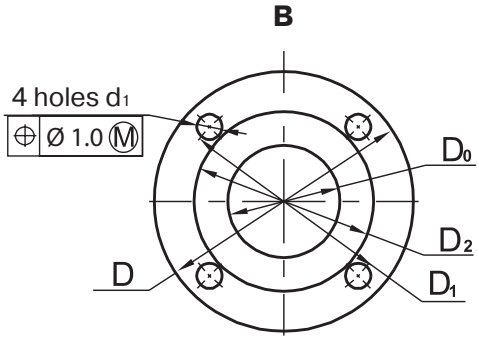
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

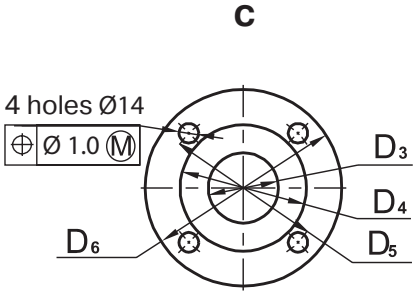


## PUMP OVERALL DIMENSIONS



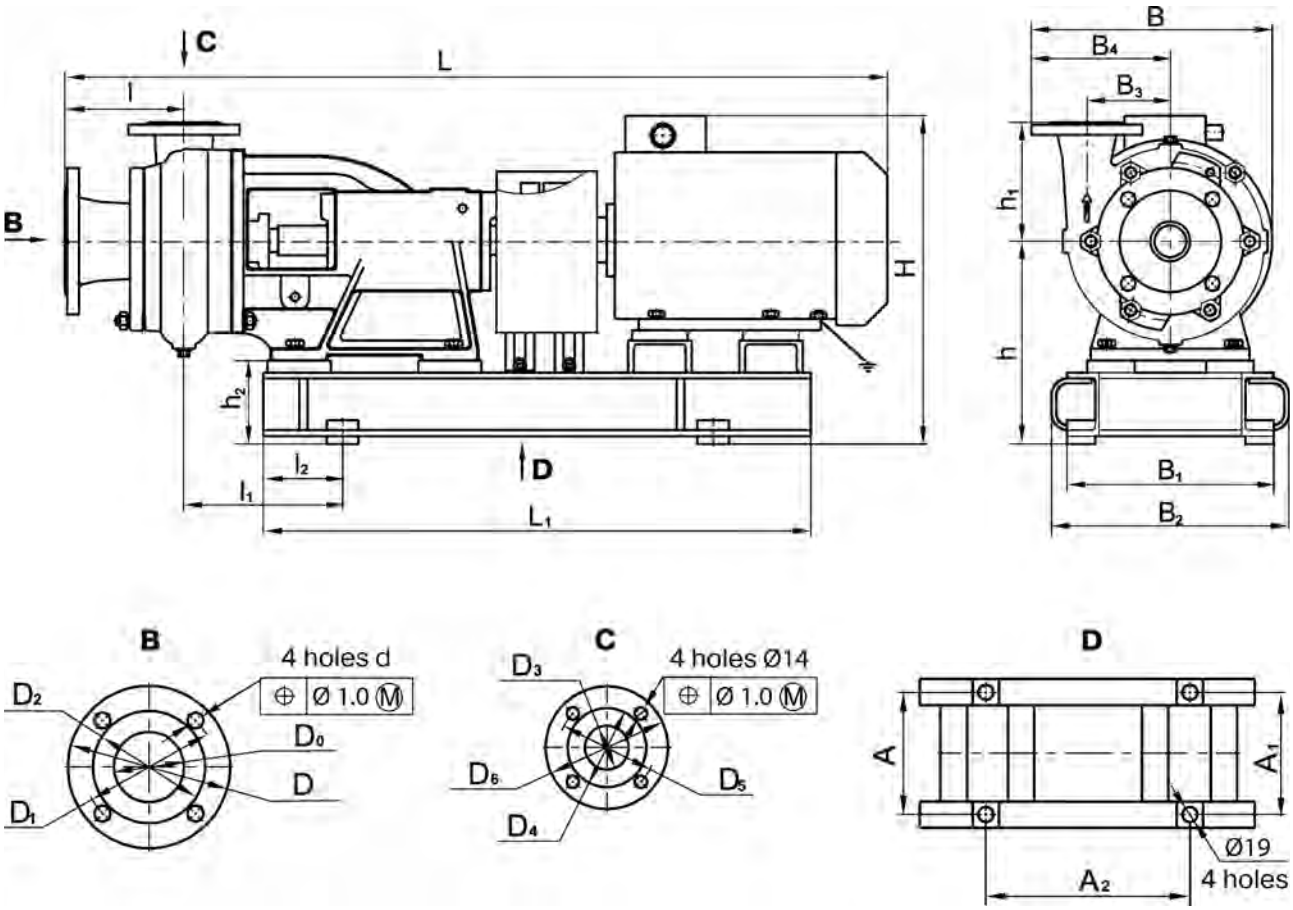




| Pump | Dimensions, mm | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | l | $l_1$ | $l_2$ | a | $a_1$ | b | $b_1$ | B | $B_1$ | $B_2$ | H | $H_1$ |
| 1K 8/18 | 466 | 120 | 115 | 91 | 195 | 140±0.7 M | 160 | 130±0.7 M | 230 | 135 | 75 | 240 | 120 |
| 1K 20/30 | 466 | 120 | 115 | 91 | 195 | 140±0.7 M | 160 | 130±0.7 M | 275 | 163 | 98 | 270 | 120 |

| Pump | Dimensions, mm | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | d | $d_1$ | D | $D_0$ | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ | $D_8$ | |
| 1K 8/18 | 25 | 14 | 140 | 50 | 110 | 90 | 32 | 70 | 90 | 120 | 95 | 110 | 27 |
| 1K 20/30 | 25 | 14 | 160 | 65 | 130 | 100 | 40 | 80 | 100 | 130 | 100 | 125 | 30.5 |

## UNIT OVERALL DIMENSIONS




| Unit | Electric motor | | | | Dimensions, mm | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Power, kW | Rotation speed $s^{-1}$ (rpm) | Voltage, V | L | $L_1$ | l | $l_1$ | $l_2$ | A | $A_1$ | $A_2$ | B | $B_1$ | $B_2$ | $B_3$ | $B_4$ | H |
| 1K 8/18 | 5A80MA2 | 1.5 | 50 (3000) | 220 or 380 | 785 | 525 | 120 | 185 | 109 | 240 | 240 | 336 | 230 | 296 | 312 | 75 | 135 | 323 |
| 1K 8/18a | A80A2 | | | | 790 | | | | | | | | | | | | | 330 |
| | AIR80A2 | | | | 790 | | | | | | | | | | | | | 328 |
| 1K 20/30m | AIR1001.2 | 5.5 | | | 865 | 580 | | | 102 | 250 | 250 | 379 | 275 | 300 | 300 | 98 | 163 | 343 |
| | A100L2 | | | | 915 | | | | | | | 379 | | | | | | 370 |
| 1K 20/30 | AIR100S2 | 4.0 | | | 835 | 555 | | | | | | 365 | | | | | | 343 |
| | A100S2 | | | | 870 | | | | | | | 365 | | | | | | |
| 1K 20/30a | AIR90L2 | 3.0 | | | 810 | 560 | | | | 240 | 240 | 355 | | 290 | 290 | | | |
| | A90L2 | | | | 845 | | | | | | | 355 | | | | | | |
| 1K 20/30b | AIR80V2 | 2.2 | | | 815 | 525 | | | 109 | | | 336 | | 296 | 312 | | | 353 |
| | A80V2 | | | | 810 | | | | | | | | | | | | | |
| | 5A80MV2 | | | | 810 | | | | | | | | | | | | | |

## UNIT OVERALL DIMENSIONS

| Unit | Electric motor type | Dimensions, mm | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h | $h_1$ | $h_2$ | $d_1$ | D | $D_0$ | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ | $D_8$ | |
| 1K 8/18<br>1K 8/18a | 5A80MA2 | 203 | 120 | 83 | 14 | 140 | 50 | 110 | 90 | 32 | 70 | 90 | 120 | 110 | 95 | 61 |
| | A80A2 | | | | | | | | | | | | | | | 56 |
| | AIR80A2 | | | | | | | | | | | | | | | 56 |
| 1K 20/30m | AIR100L2 | 193 | 150 | 73 | | 160 | 65 | 130 | 100 | 40 | 80 | 100 | 130 | 125 | 100 | 81 |
| | A100L2 | | | | | | | | | | | | | | | 72 |
| 1K 20/30 | AIR100S2 | | | | | | | | | | | | | | | 73.5 |
| | A100S2 | | | | | | | | | | | | | | | 66 |
| 1K 20/30a | AIR90L2 | | | | | | | | | | | | | | | 69 |
| | A90L2 | | | | | | | | | | | | | | | 64 |
| 1K 20/30b | AIR80V2 | 203 | | 83 | | | | | | | | | | | | 61 |
| | A80V2 | | | | | | | | | | | | | | | 61 |
| | 5A80MV2 | | | | | | | | | | | | | | | 63 |

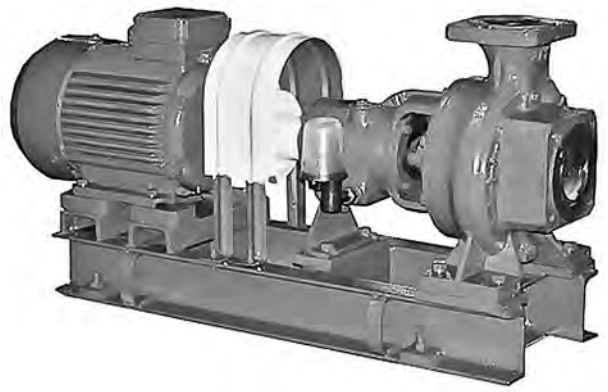
# 2K SERIES
## CENTRIFUGAL OVERHUNG END-SUCTION PUMPS

### APPLICATION

The centrifugal overhung end-suction pumps of the 2K series are intended for pumping of water (except sea water) and similar liquids by viscosity, density, and chemical activity.

- Hydrogen index (pH): 6.0 - 9.5
- Max temperature: +120 °C
- Max solids content: 0.1 %
- Max solids size: 0.2 mm

The pumps are not intended for operation in explosion and fire hazardous premises.



### PUMP SERIES DESIGNATION

**2K 80–65–160**

2 K XXX - XX - XXX

Model version with oil lubricated bearings
Pump series
Suction nozzle diameter, mm
Discharge nozzle diameter, mm
Impeller rated diameter, mm
**a**, **b**, **v** – decreased impeller diameter,
**m** – increased impeller diameter

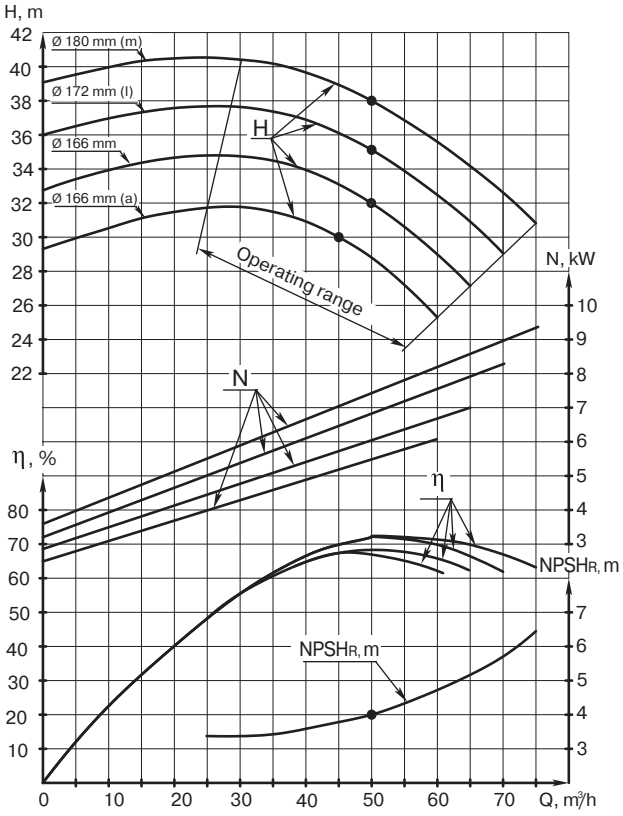
| TECHNICAL DATA | | |
|---|---|---|
| | **2K 80–65–160** | **2K 100–80–160** |
| Capacity, $m^3/h$ (l/sec) | 50 (13.8) | 100 (27.8) |
| Head, m | 32 | |
| Rotation speed, $s^{-1}$ (rpm) | 48 (2900) | |
| Pump max suction pressure, bar ($kgf/cm^2$) | 6.0 | |
| Pump efficiency, % | 72 | 79 |
| Power, kW | 7.0 | 13 |
| Power supply | ~ 220 / 380 V; 50 Hz | |

The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 $kg/m^3$

## PERFORMANCE CURVE

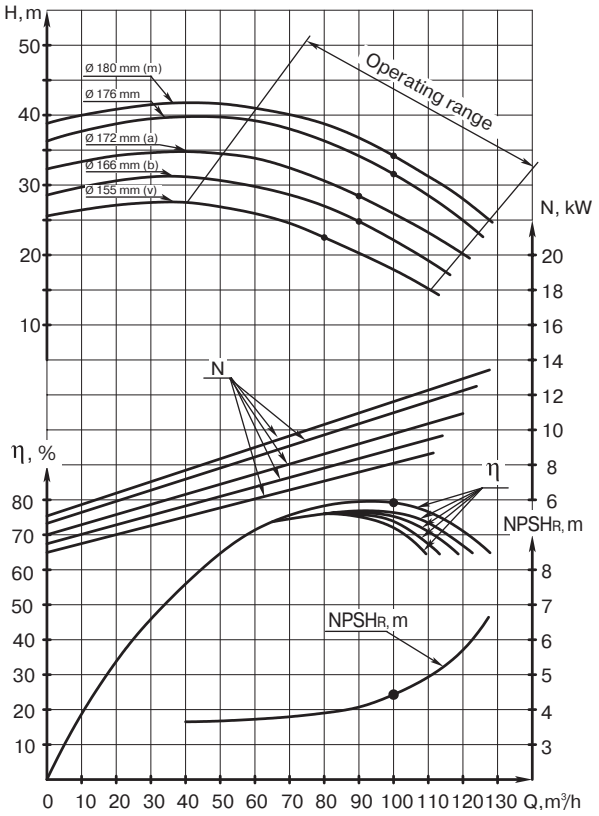
**2K 80–65–160**

rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

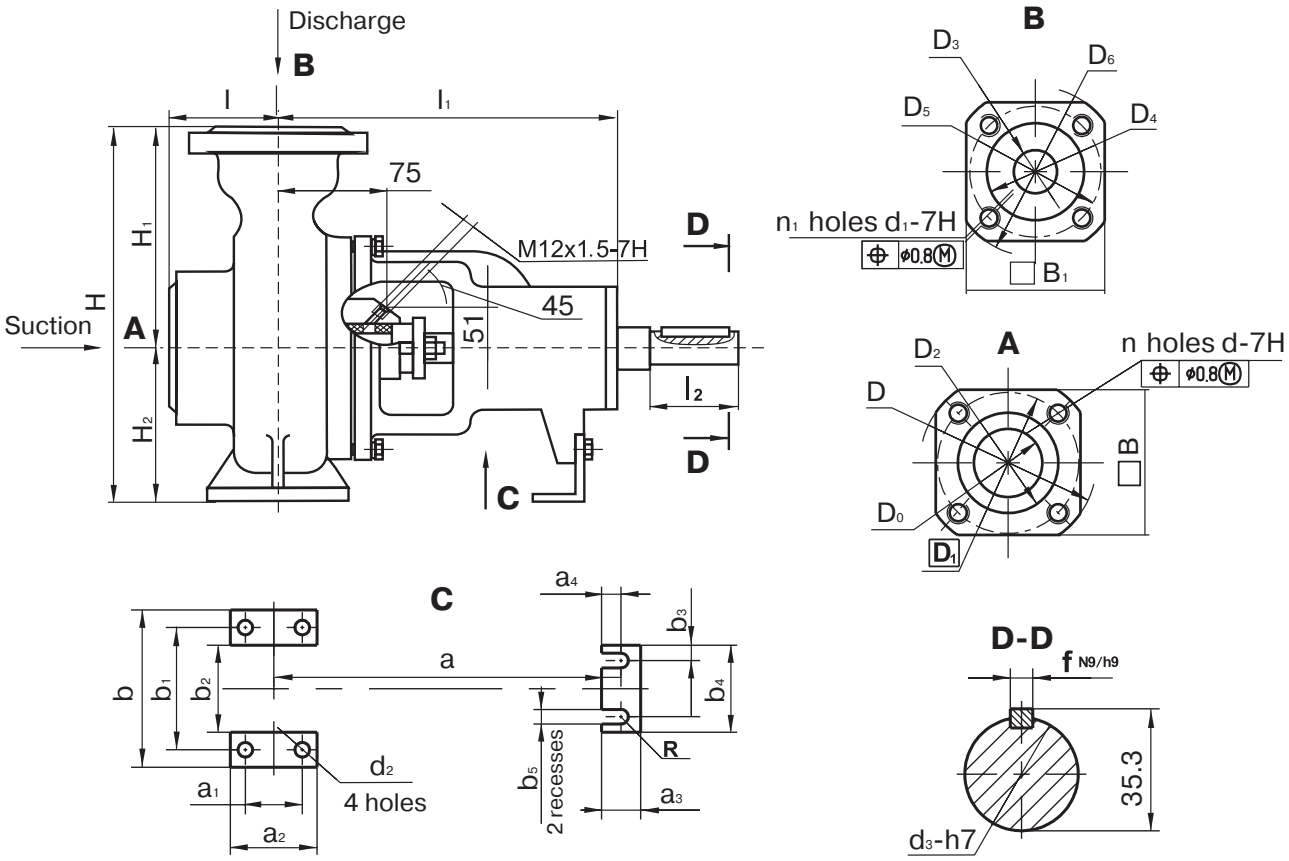



**2K 100–80–160**

rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



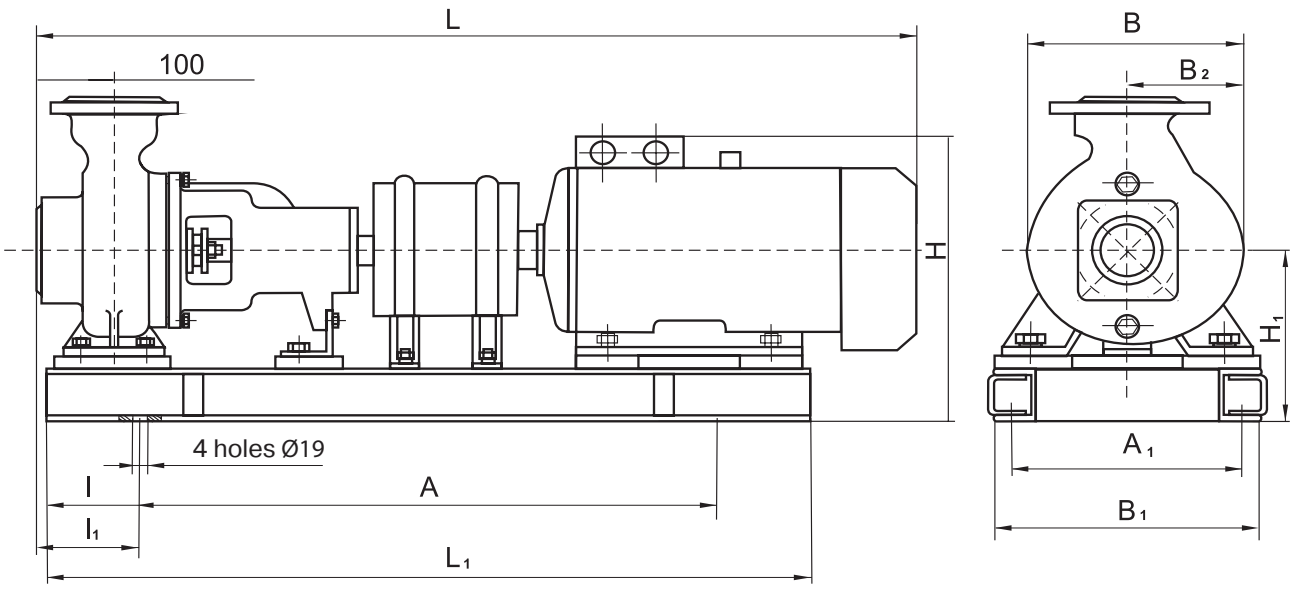
## PUMP OVERALL DIMENSIONS




| Dimension | Pump | |
|---|---|---|
| | H49.933.01.00.000 | H49.932.01.00.000 |
| | 2K 80–65–160 | 2K 100–80–160 |
| l | 100 | 100 |
| $l_1$ | 415 | 415 |
| $l_2$ | 80 | 80 |
| a | 270 | 270 |
| $a_1$ | 95+0.3 | 95+0.3 |
| $a_2$ | 125 | 125 |
| $a_3$ | 45 | 45 |
| $a_4$ | 16 | 16 |
| b | 280 | 280 |
| $b_1$ | 212 ±0.5 | 212 ±0.5 |
| $b_2$ | 150 | 150 |
| $b_3$ | 110 | 110 |
| $b_4$ | 145 | 145 |
| $b_5$ | 14 | 14 |
| B | 150 | 155 |
| $B_1$ | 140 | 150 |
| R | 7 | 7 |
| D | 195 | 205 |

| Dimension | Pump | |
|---|---|---|
| | H49.933.01.00.000 | H49.932.01.00.000 |
| | 2K 80–65–160 | 2K 100–80–160 |
| $D_0$ | 80 | 100 |
| $D_1$ | 160 | 170 |
| $D_2$ | 133 | 148 |
| $D_3$ | 65 | 80 |
| $D_4$ | 122 | 133 |
| $D_5$ | 145 | 160 |
| $D_6$ | 180 | 195 |
| d 7H | M16 | M16 |
| $d_1$ 7H | M16 | M16 |
| $d_2$ | 14 | 14 |
| $d_3$ h7 | $32_{-0.025}$ | $32_{-0.025}$ |
| H | 360 | 385 |
| $H_1$ | 200 | 225 |
| $H_2$ | 160 | 160 |
| n | 4 | 4 |
| $n_1$ | 4 | 4 |
| f | 10 | 10 |
| Weight, kg | 60 | 61 |

## UNIT OVERALL DIMENSIONS




| Unit | Capacity, m³/h | Electric motor | | | | Dimensions, mm | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Power, kW | Rotation speed, s⁻¹(rpm) | Voltage, V | L | $L_1$ | l | $l_1$ | A | $A_1$ | H | $H_1$ | B | $B_1$ | $B_2$ | |
| 2K 80-65-160m | 75 | AIR160S2 | 15 | 50 (3000) | 220, 380 | 1125 | 975 | 150 | 178 | 620+1.1 | 230±1.1 | 540 | 295 | 350 | 324 | 160 | 222 |
| | 75 | 5A160S2 | 15 | | | 1190 | 975 | | | | | 537 | 295 | 334 | | 196 | 232 |
| 2K 80-65-160l | 65 | A132M2 | 11 | | | 1025 | 895 | | | 600+1.1 | | 490 | 290 | 270 | | 145 | 182 |
| | 65 | AIRM132M2 | 11 | | | 1018 | | | | | | 485 | | 288 | | | 185 |
| 2K 80-65-160 | 70 | A132M2 | 11 | | | 1025 | | | | | | 490 | | 270 | | | 182 |
| | 70 | AIRM132M2 | 11 | | | 1018 | | | | | | 485 | | 288 | | | 185 |
| 2K 80-65-160a | 65 | A112M2 | 7.5 | | | 1025 | 825 | | | | | 470 | | 270 | | | 173 |
| | 65 | 5AM112M2 | 7.5 | | | 1000 | | | | | | 460 | | | | | 161 |
| | 65 | AIR112M2 | 7.5 | | | 953 | | | | | | 450 | | | | | 144 |
| | 55 | A112M2 | 7.5 | | | 1025 | | | | | | 470 | | | | | 173 |
| | 55 | 5AM112M2 | 7.5 | | | 1000 | | | | | | 460 | | | | | 161 |
| | 55 | AIR112M2 | 7.5 | | | 953 | | | | | | 450 | | | | | 144 |
| 2K 100-80-160m | 128 | AIR160M2 | 18.5 | | | 1165 | 975 | | | 620+1.1 | | 540 | 295 | 350 | | 160 | 238 |
| | 128 | 5A160M2 | 18.5 | | | 1220 | | | | | | 537 | | 334 | | 196 | 245 |
| 2K 100-80-160 | 125 | AIR160S2 | 15 | | | 1125 | | | | | | 540 | | 350 | | 160 | 224 |
| | 125 | 5A160S2 | 15 | | | 1190 | | | | | | 537 | | 334 | | 196 | 234 |
| 2K 100-80-160a | 120 | AIR160S2 | 15 | | | 1125 | | | | | | 540 | | 350 | | 160 | 224 |
| | 120 | 5A160S2 | 15 | | | 1190 | | | | | | 537 | | 334 | | 196 | 234 |
| 2K 100-80-160b | 115 | A132M2 | 11 | | | 1025 | 895 | | | 600+1.1 | | 490 | 290 | 285 | | 155 | 182 |
| | 115 | AIRM132M2 | 11 | | | 1018 | | | | | | 485 | | 288 | | | 185 |
| 2K 100-80-160v | 110 | A132M2 | 11 | | | 1025 | | | | | | 490 | | 285 | | | 182 |
| | 110 | AIRM132M2 | 11 | | | 1018 | | | | | | 485 | | 288 | | | 185 |

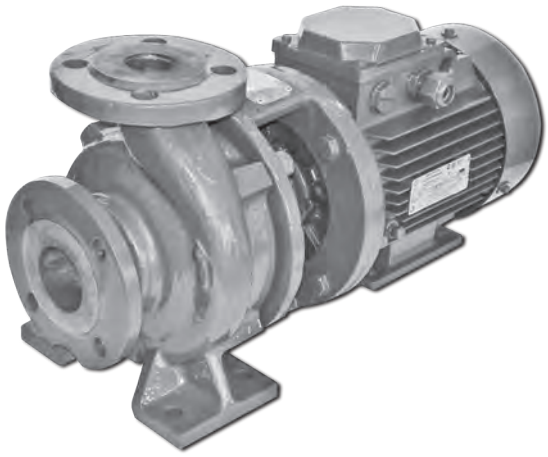
# KM SERIES
## CENTRIFUGAL CLOSE-COUPLED END-SUCTION PUMPS

### APPLICATION

The centrifugal close-coupled end-suction pumps of the KM series are intended for pumping of service water (except sea water) and similar liquids by viscosity, density, and chemical activity in the water supply systems of industrial and residential premises.

- Hydrogen index (pH): 6.0 - 9.0
- Max temperature: + 85 °C
- Max solids content: 0.1 %
- Max solids size: 0.2 mm

The pumps are not intended for operation in explosion and fire hazardous premises.



### DESIGN

The KM series pump consists of a centrifugal pump closely coupled with a flanged electric motor, which has elongated shaft. The pump rotates in a clockwise direction if seen from the motor side. The arrow on the pump casing indicates the rotation direction.

### PUMP SERIES DESIGNATION

**KM 50–32–125a–s**

KM XX - XX - XXX - x

Pump series

Suction nozzle diameter, mm

Discharge nozzle diameter, mm

Impeller rated diameter, mm
**a**, **b**, **v** – decreased impeller diameter
**l**, **m** – increased impeller diameter

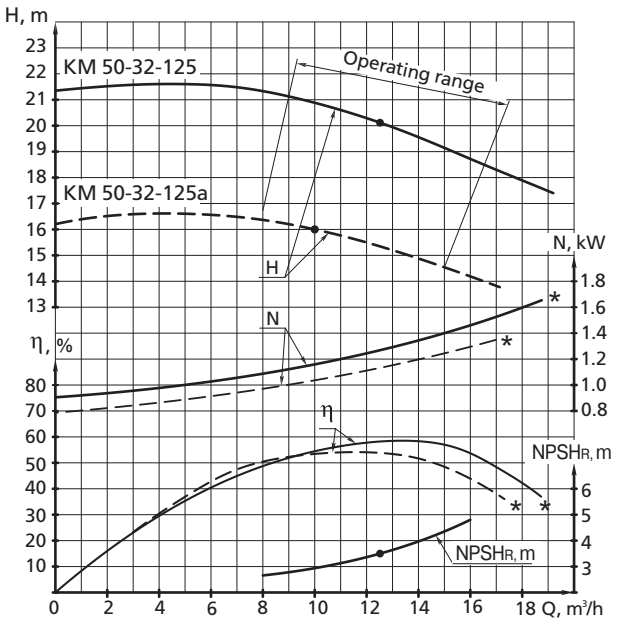
Shaft sealing: **s** – gland sealing, **t** – mechanical sealing

## TECHNICAL DATA

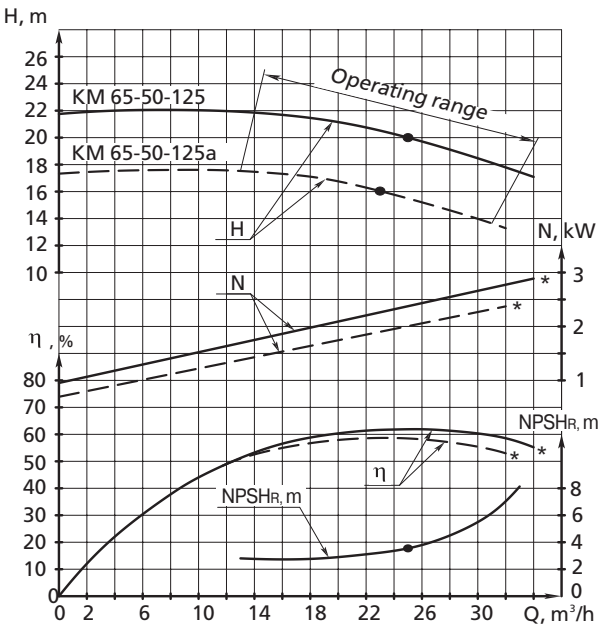
| Pump | Electric motor | | Capacity, $m^3/h$ | Head, m | Rotation speed, $s^{-1}$ (rpm) | Pump suction pressure, bar ($kgf/cm^2$), max | NPSH, m | Efficiency, % | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|
| | Type | Power, kW | | | | | | | |
| KM 50-32-125 | AIR80B2J | 2.2 | 12.5 | 20 | 48 (2900) | 3.5 | 3.5 | 58 | 34 |
| KM 50-32-125a | AIR80A2J | 1.5 | 10 | 16 | | | 3.5 | 56 | 33 |
| KM 65-50-125 | AIR100S2J | 4 | 25 | 20 | | | 3.8 | 66 | 50 |
| KM 65-50-125a | | | 23 | 16 | | | 3.8 | 64 | 50 |
| KM 65-50-160 | AIR100L2J | 5.5 | 25 | 32 | | | 3.8 | 62 | 65 |
| KM 65-50-160a | AIR100S2J | 4 | 20 | 25 | | | 3.8 | 59 | 58 |
| KM 80-65-160 | AIR112M2J | 7.5 | 50 | 32 | | | 4 | 71 | 96 |
| KM 80-65-160a | | | 45 | 28 | | | 4 | 69 | 96 |
| KM 80-65-160b | AIR100L2J | 5.5 | 40 | 20 | | 6 | 4 | 66 | 66 |
| KM 80-50-200 | AIR160S2J | 15 | 50 | 50 | | | 4.5 | 66 | 165 |
| KM 80-50-200a | AIR132M2J | 11 | 45 | 40 | | | 4.5 | 62 | 133 |
| KM 100-80-160 | AIR160S2J | 15 | 100 | 32 | | | 4.5 | 76 | 167 |
| KM 100-80-160a | AIR132M2J | 11 | 90 | 26 | | | 4.5 | 71 | 140 |
| KM 100-80-160b | AIR112M2J | 7.5 | 80 | 20 | | | 4.5 | 71 | 105 |
| KM 100-65-200 | AIR180M2J | 30 | 100 | 50 | | | 4.5 | 73 | 260 |
| KM 100-65-200a | AIR180S2J | 22 | 90 | 40 | | | 4.5 | 66 | 230 |
| KM 100-65-250 | AIR200L2J | 45 | 100 | 80 | | | 4.5 | 68 | 330 |
| KM 100-65-250a | AIR200M2J | 37 | 90 | 67 | | | 4.5 | 64 | 310 |
| KM 150-125-250 | AIR160M4J | 18.5 | 200 | 20 | 24 (1450) | | 4.2 | 82 | 235 |
| KM 150-125-250a | AIR160S4J | 15 | 180 | 16 | | | 4.2 | 81 | 220 |

## PERFORMANCE CURVE

**KM 50–32–125** * pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

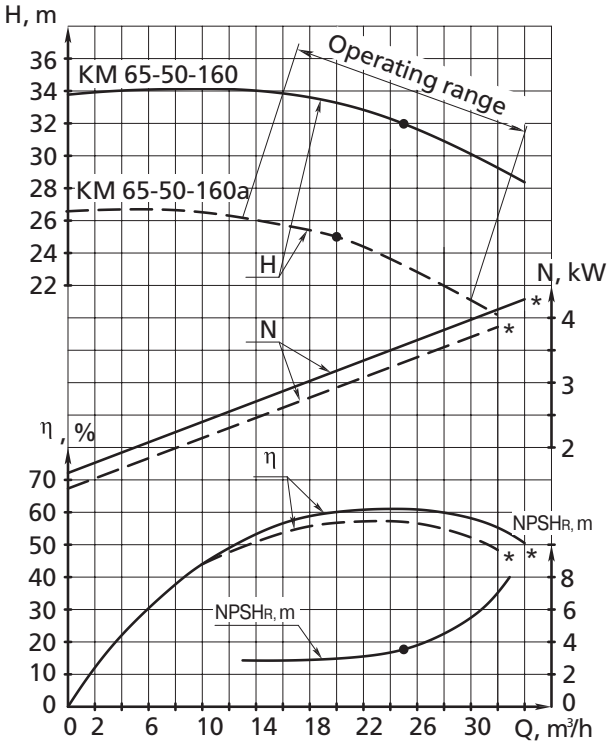



**KM 65–50–125** * pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

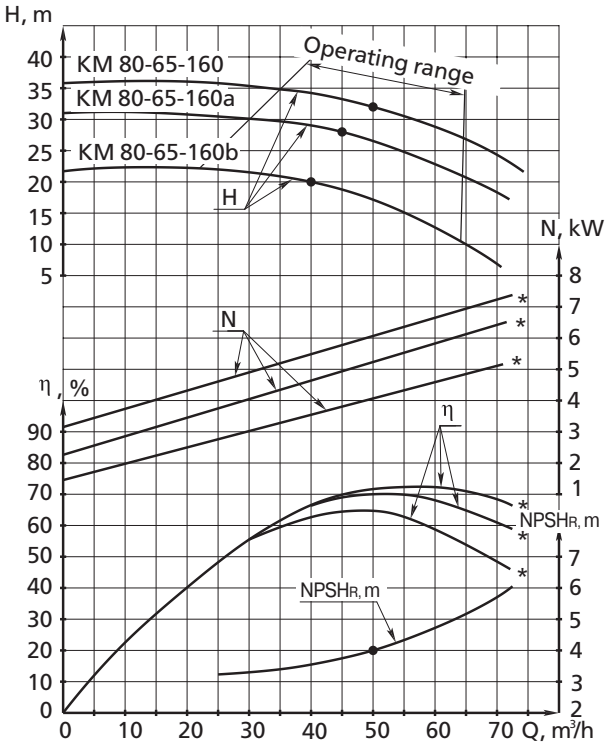


## PERFORMANCE CURVE

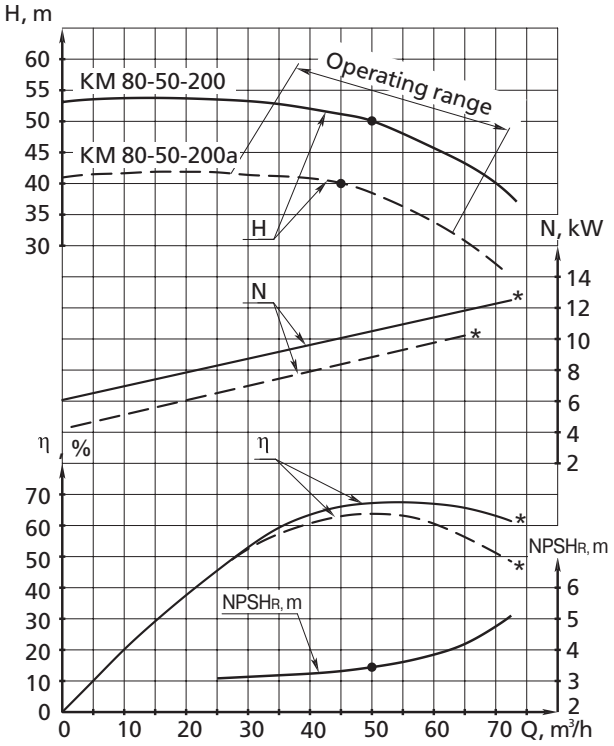
**KM 65–50–160** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



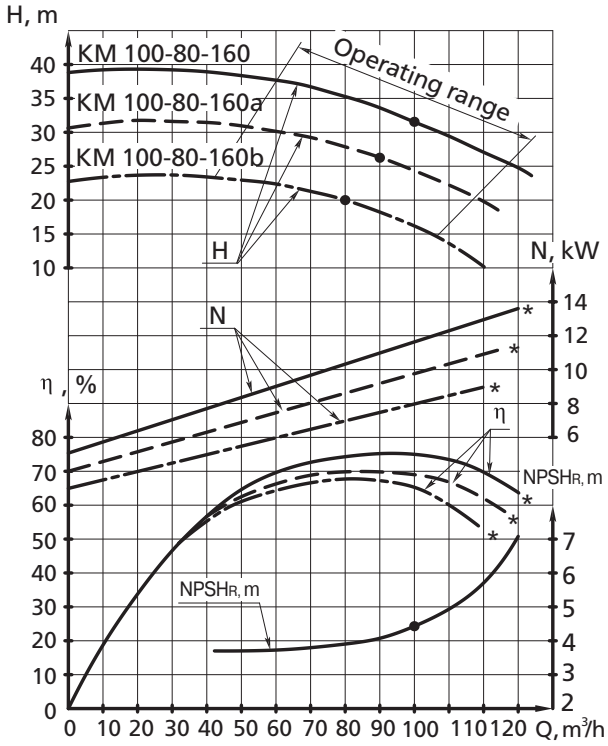

**KM 80–65–160** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**KM 80–50–200** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

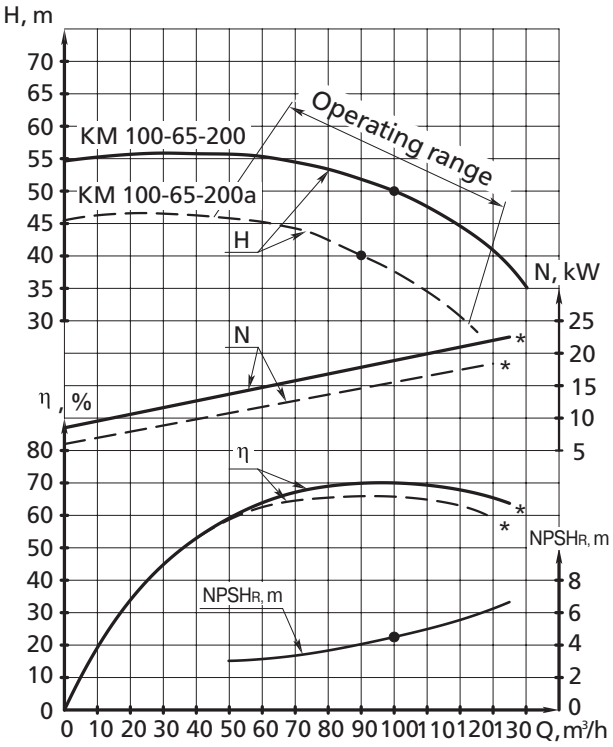



**KM 100–80–160** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

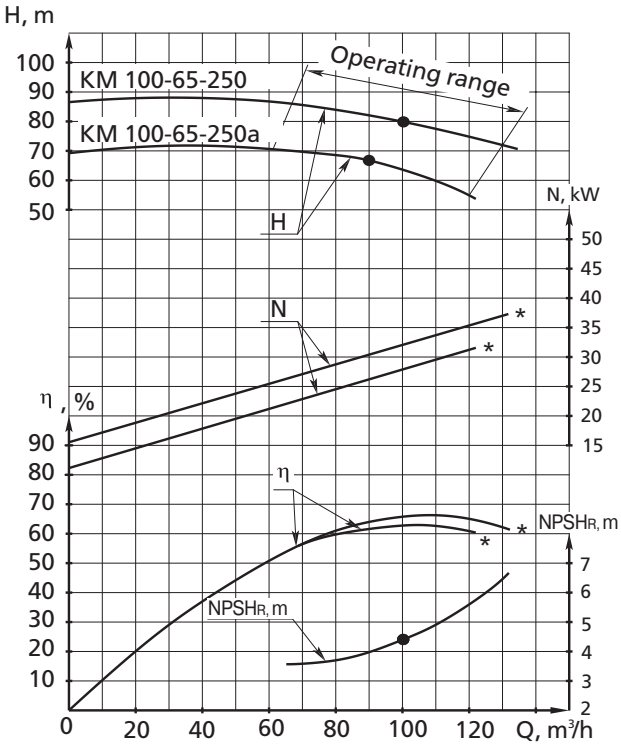


## PERFORMANCE CURVE

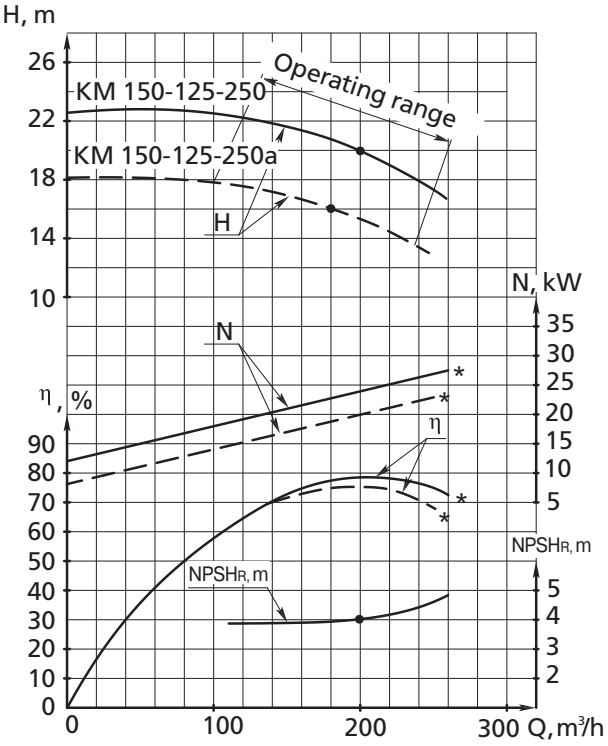
**KM 100–65–200** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



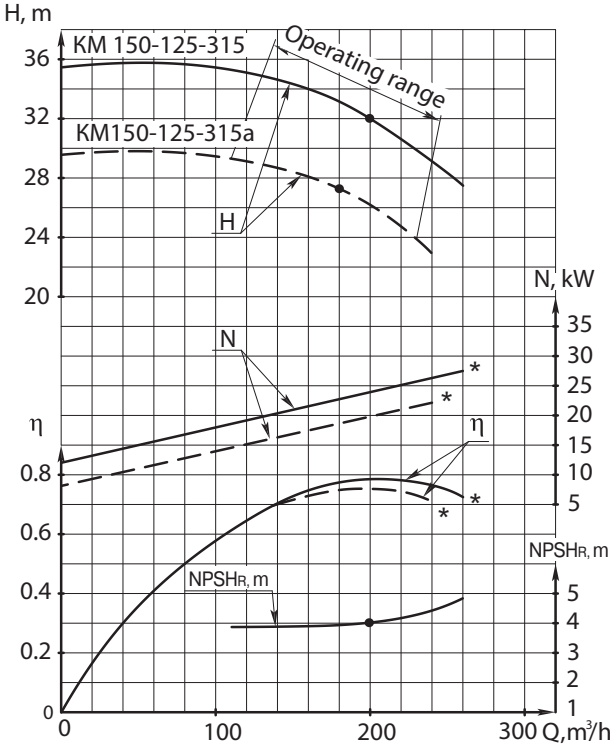

**KM 100–65–250** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



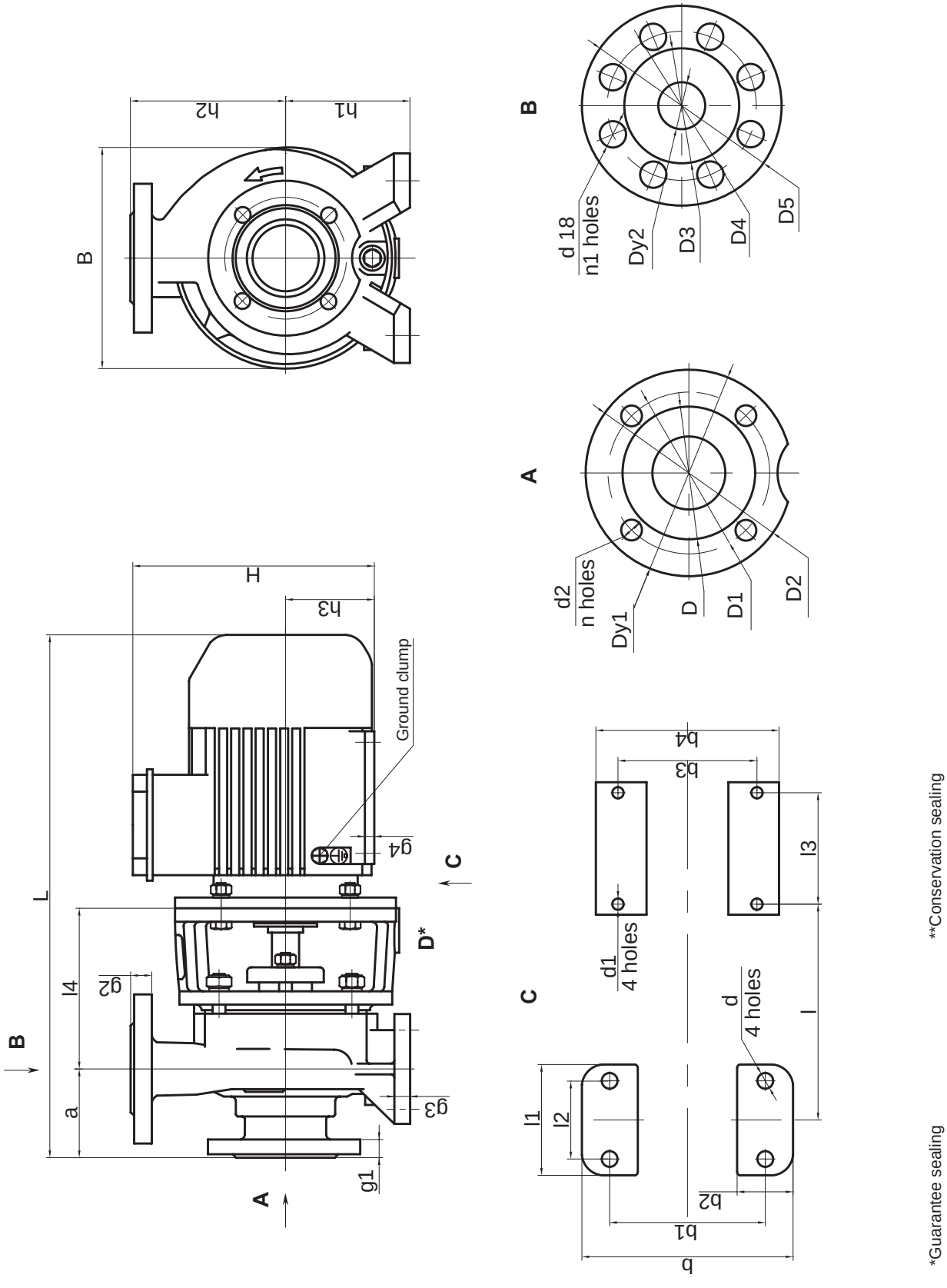

**KM 150–125–250** * – pump data
rotation speed 48 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**KM 150–125–315** * – pump data
rotation speed 24 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



## OVERALL DIMENSIONS




*Guarantee sealing

**Conservation sealing

| Pump | Electric motor type | L | l | l1 | l2 | l3 | l4 | B | b | b1 | b2 | b3 | b4 | H | h1 | h2 | h3 | D | D1 | D2 | D3 | D4 | D5 | Dy1 | Dy2 | d | d1 | d2 | g1 | g2 | g3 | g4 | n | n1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KM 50-32-125 | AIR80V2J | 500 | 195 | 100 | 70 | 100 | 145 | 200 | 190 | 140 | 50 | 125 | 165 | 218 | 112 | 140 | 80 | 90 | 110 | 140 | 78 | 100 | 135 | 50 | 32 | 14 | 10 | 14 | 16 | 19 | 14 | 9 | 4 | 4 |
| KM 50-32-125a | AIR80A2J | 475 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 65-50-125 | AIR100S2J | 546 | 229 | 100 | 70 | 112 | 166 | 250 | 210 | 160 | 50 | 160 | 205 | 270 | 112 | 140 | 100 | 110 | 130 | 160 | 102 | 125 | 160 | 65 | 50 | 14 | 12 | 14 | 16 | 20 | 15 | 10 | 4 | 4 |
| KM 65-50-125a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 65-50-160 | AIR100L2J | 580 | 229 | 100 | 70 | 140 | 166 | 250 | 230 | 190 | 50 | 160 | 205 | 270 | 132 | 160 | 100 | 122 | 145 | 180 | 102 | 125 | 160 | 65 | 50 | 14 | 12 | 18 | 20 | 20 | 15 | 10 | 4 | 4 |
| KM 65-50-160a | AIR100S2J | 550 | | | | 112 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 80-65-160 | AIR112M2J | 635 | 241 | 100 | 70 | 140 | 171 | 300 | 265 | 212 | 50 | 190 | 230 | 300 | 160 | 180 | 112 | 133 | 160 | 190 | 123 | 145 | 180 | 80 | 65 | 14 | 12 | 14 | 22 | 20 | 15 | 10 | 4 | 4 |
| KM 80-65-160a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 80-65-160b | AIR100L2J | 600 | 229 | | | | | | | | | | | 270 | | | 100 | | | | | | | | | | | | | | | | | |
| KM 80-50-200 | AIR160S2J | 793 | 301 | 100 | 70 | 178 | 193 | 360 | 265 | 212 | 70 | 254 | 320 | 420 | 160 | 200 | 160 | 133 | 160 | 195 | 102 | 125 | 160 | 80 | 50 | 14 | 15 | 18 | 22 | 20 | 15 | 20 | 4 | 4 |
| KM 80-50-200a | AIR132M2J | 713 | 282 | | | | | 350 | | | | 216 | 258 | 310 | | | 132 | | | | | | | | | | 12 | | | | | | | |
| KM 100-80-160 | AIR160S2J | 793 | 301 | 125 | 95 | 178 | 193 | 350 | 280 | 212 | 70 | 254 | 320 | 420 | 160 | 210 | 160 | 158 | 180 | 215 | 133 | 160 | 195 | 100 | 80 | 14 | 15 | 18 | 22 | 22 | 16 | 20 | 8 | 4 |
| KM 100-80-160a | AIR132M2J | 715 | 282 | | | 118 | | | | | | 216 | 258 | 300 | | | 132 | | | | | | | | | | 12 | | | | | | | |
| KM 100-80-160b | AIR112M2J | 640 | 246 | | | 140 | 176 | | | | | 190 | 230 | | | | 112 | | | | | | | | | | | | | | | 10 | | |
| KM 100-65-200 | AIR180M2J | 1000 | 301 | 125 | 95 | 241 | 193 | 400 | 320 | 250 | 70 | 279 | 355 | 455 | 180 | 225 | 180 | 158 | 180 | 215 | 122 | 145 | 180 | 100 | 65 | 14 | 15 | 18 | 22 | 20 | 15 | 22 | 8 | 4 |
| KM 100-65-200a | AIR180S2J | 960 | | | | 203 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 100-65-250 | AIR200L2J | 990 | 326 | 160 | 120 | 305 | 193 | 415 | 360 | 280 | 70 | 318 | 400 | 480 | 200 | 250 | 200 | 158 | 180 | 215 | 122 | 145 | 180 | 100 | 65 | 18 | 19 | 18 | 22 | 24 | 15 | 25 | 8 | 4 |
| KM 100-65-250a | AIR200M2J | | | | | 267 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KM 150-125-250 | AIR160M4J | 863 | 301 | 160 | 120 | 210 | 193 | 445 | 400 | 315 | 90 | 254 | 320 | 420 | 250 | 355 | 160 | 212 | 240 | 280 | 184 | 210 | 245 | 150 | 125 | 18 | 15 | 22 | 26 | 26 | 20 | 20 | 8 | 8 |
| KM 150-125-250a | AIR160S4J | 818 | | | | 178 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# 1KML SERIES
## CENTRIFUGAL CLOSE-COUPLED IN-LINE PUMPS

### APPLICATION

The centrifugal close-coupled in-line pumps of the 1KML series are intended for pumping of service water (except sea water) and similar liquids as the pressure boosting and circulation pumps in the water supply and heating systems for industrial and residential premises.

- Hydrogen index (pH): 6.0 - 9.5
- Max temperature: -10 to +120 °C
- Max solids content: 0.1 %
- Max solids size: 0.2 mm

The pumps are not intended for operation in explosion and fire hazardous premises.

### PUMP SERIES DESIGNATION

**1 KML 80–160t**

1 KML XX - XXX x

Model version

Pump series

Suction and discharge nozzles diameter, mm

Impeller rated diameter, mm
**a**, **b**, – decreased impeller diameter
**m** – increased impeller diameter

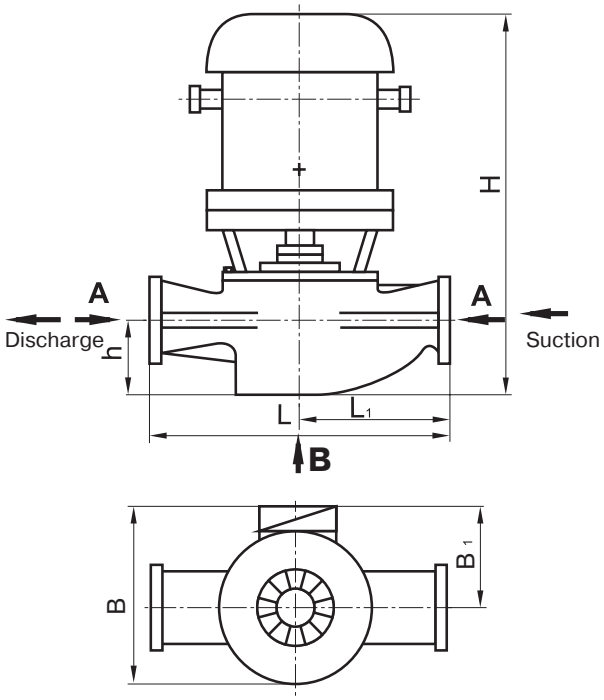
No mark – gland sealing
**t** – mechanical sealing

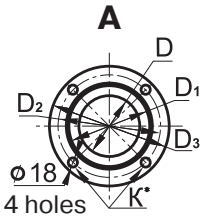
| TECHNICAL DATA | | | |
|---|---|---|---|
| | 1KML 80–160 | 1KML 65–200 | 1KML 65–200 |
| Capacity, $m^3/h$ | 100 | 50 | 50 |
| Head, m | 32 | 50 | 32 |
| Pump max suction pressure, bar ($kgf/cm^2$) | 3.5 | | |
| Max pump power, kW | 14 | 14.5 | 7 |
| Rotation speed, $s^{-1}$ (rpm) | 48.3 (2900) | | |
| Power supply | ~ 220 / 380 V; 50 Hz | | |

## TECHNICAL DATA

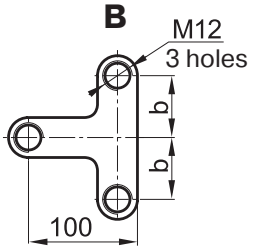
| Pump | Capacity $m^3/h$ | Electric motor type | Power, kW | Dimensions, mm | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | $L_1$ | B | $B_1$ | D | $D_1$ | $D_2$ | $D_3$ | H | h | b | |
| 1KML 65-200<br>1KML 65-200t | 72 | 5A160MV2NJ | 18.5 | 530 | 265 | 417 | 242 | 65 | 122 | 145 | 180 | 880 | 160 | 45 | 205 |
| | | AIR160M2Sp19 | | | | 420 | 245 | | | | | 775 | | | 157 |
| | 62 | 5A160MA2NJ | 15 | | | 417 | 242 | | | | | 880 | | | 195 |
| | | AIR160S2Sp19 | | | | 420 | 245 | | | | | 735 | | | 147 |
| 1KML 65-200-a<br>1KML 65-200t-a | 68 | 5A160MA2NJ | 15 | | | 417 | 242 | | | | | 880 | | | 195 |
| | | AIR160S2Sp19 | | | | 420 | 245 | | | | | 735 | | | 147 |
| | 53 | 5A160SA2NJ | 11 | | | 417 | 242 | | | | | 880 | | | 190 |
| | | AD132M2J | | | | 355 | 178 | | | | | 627 | | | 130 |
| 1KML 65-200-b<br>1KML 65-200t-b | 65 | 5A160SA2NJ | 11 | | | 417 | 242 | | | | | 880 | | | 190 |
| | | AD132M2J | | | | 355 | 178 | | | | | 627 | | | 130 |
| 1KML 65-160-м<br>1KML 65-160t-м | 75 | 5A160M2NJ | 15 | 380 | 190 | 417 | 242 | | | | | 910 | 154 | | 190 |
| | | AIR160S2Sp19 | | | | 420 | 245 | | | | | 760 | | | 150 |
| | 65 | 5A160SA2NJ | 11 | | | 417 | 242 | | | | | 910 | | | 190 |
| | | AD132M2J | | | | 355 | 178 | | | | | 655 | | | 120 |
| 1KML 65-160-l<br>1KML 65-160t-l | 70 | 5A160SA2NJ | 11 | | | 417 | 242 | | | | | 910 | | | 190 |
| | | AD132M2J | | | | 355 | 178 | | | | | 655 | | | 120 |
| 1KML 65-160<br>1KML 65-160t | 65 | AIRM112M2J | 7.5 | | | 340 | 188 | | | | | 570 | | | 105 |
| 1KML 65-160-a<br>1KML 65-160t-a | 60 | | | | | | | | | | | | | | |
| 1KML 80-160<br>1KML 80-160t | 125 | 5A160MA2NJ | 15 | 530 | 265 | 417 | 242 | 80 | 133 | 160 | 195 | 910 | 184 | 50 | 220 |
| | | AIR160S2Sp19 | | | | 420 | 245 | | | | | 800 | | | 150 |
| 1KML 80-160-a<br>1KML 80-160t-a | 120 | 5A160MA2NJ | 15 | | | 417 | 242 | | | | | 910 | | | 220 |
| | | AIR160S2Sp19 | | | | 420 | 245 | | | | | 800 | | | 150 |
| 1KML 80-160-b<br>1KML 80-160t-b | 115 | 5A160SA2NJ | 11 | | | 417 | 242 | | | | | 910 | | | 220 |
| | | AD132M2J | | | | 355 | 178 | | | | | 655 | | | 120 |

## OVERALL DIMENSIONS



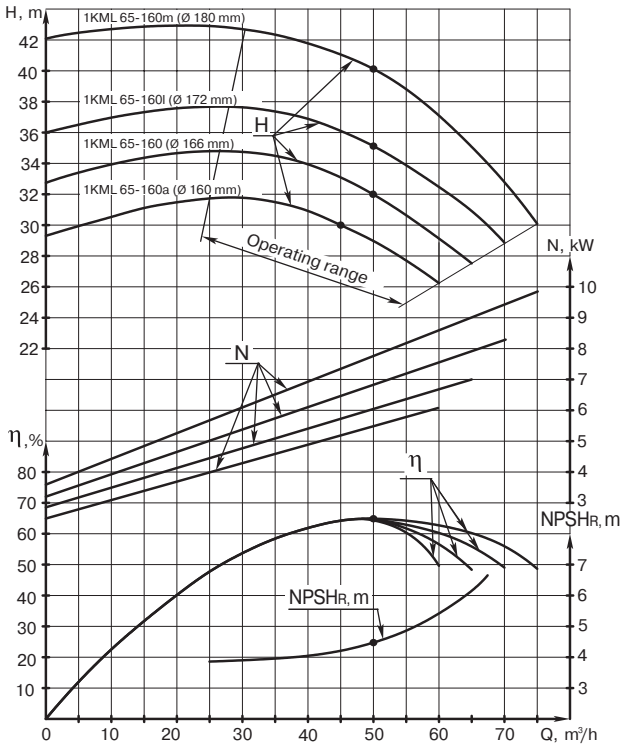

* In the pump model 1KML 65-160 the suction flange has threaded holes M16



## PERFORMANCE CURVE

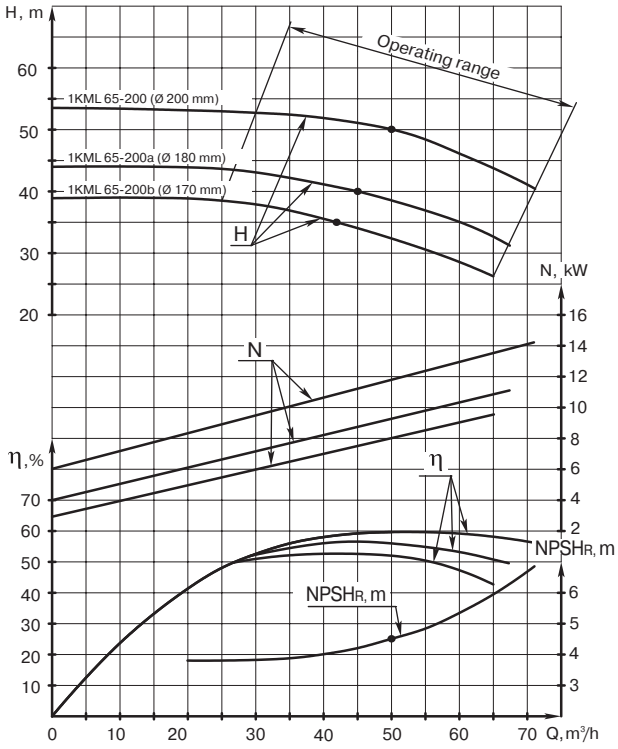
### 1KML 65–160

rotation speed 48.3 $s^{-1}$ (2900 rpm),
liquid – water (20 °C), density 1000 kg/$m^3$



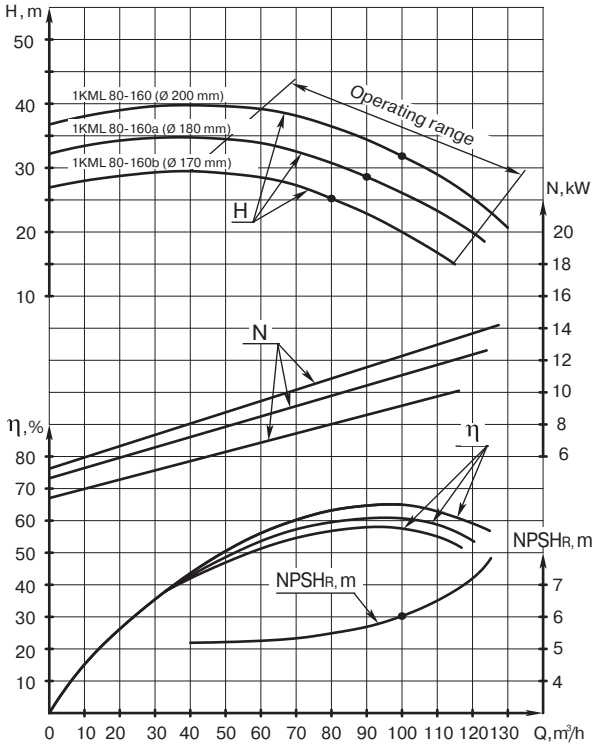

### 1KML 65–200

rotation speed 48.3 $s^{-1}$ (2900 rpm),
liquid – water (20 °C), density 1000 kg/$m^3$




### 1KML 80–160

rotation speed 48.3 $s^{-1}$ (2900 rpm),
liquid – water (20 °C), density 1000 kg/$m^3$



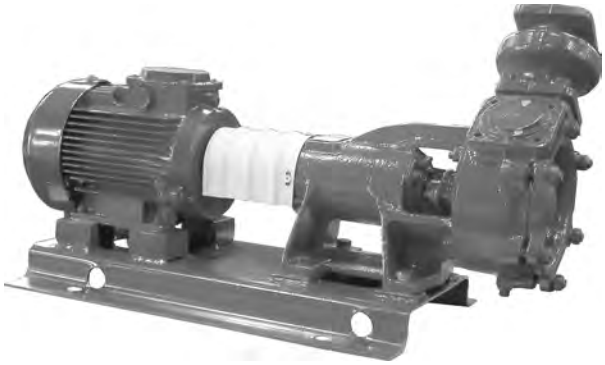
# VK, VKS, VKO SERIES
## VORTEX PUMPS

### APPLICATION

The overhung vortex pumps of the VK, VKS, and VKO series are intended for pumping of water, neutral and chemically active liquids except flammable and toxic ones. The pumped media shall allow the maximum corrosion degree of 0.1 mm/year for the pump parts.

- Max kinematic viscosity: $36x10^{-6}$ $m^2/s$ (36 cSt)
- Max solids content: 0.01%
- Max solids size: 0.05 mm
- Temperature
  – Pump material «A»: -15 to + 85 °C
  – Pump material «B», «K»: - 40 to + 85 °C

The pumps are not intended for operation in explosion and fire hazardous premises.



### PUMP SERIES DESIGNATION

**VKS 2/26 B**

VKS X / XX X

Pump series: VKS (self-priming)
Capacity, liters per second
Head, m
Material:
**A** – cast iron; **B** – bronze; **K** – non-corrosive alloy

**VKO 2/26 A**

VKO X / XX X

Pump series: VKO (with heating/cooling of casing)
Capacity, liters per second
Head, m
Material:
**A** – cast iron; **B** – bronze; **K** – non-corrosive alloy

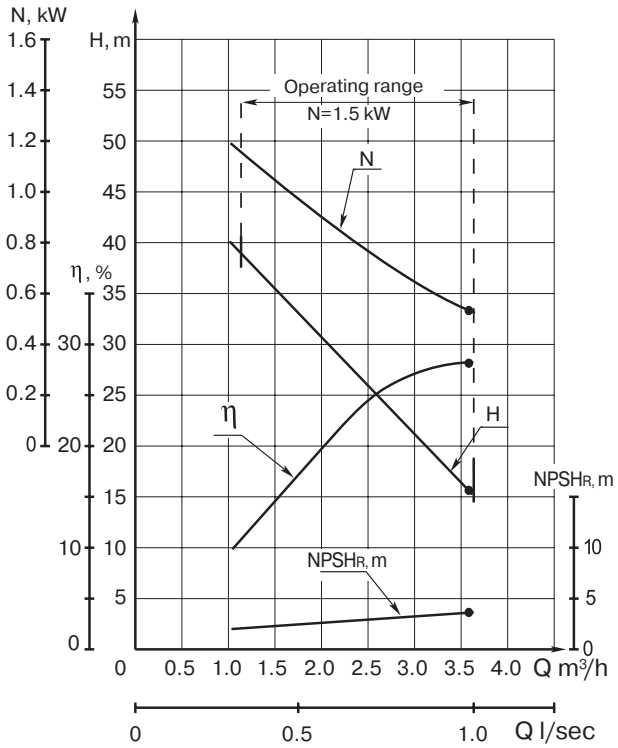
## TECHNICAL DATA

| | | Pump | | | | | |
|---|---|---|---|---|---|---|---|
| | | **VK, VKS, VKO 1/16** | **VK, VKS, VKO 2/26** | **VK, VKS, VKO 4/28** | **VK, VKS, VKO 5/24** | **VK, VKS, VKO 5/32** | **VK, VKS, VKO 10/45** |
| Capacity | l/sec | 1.0 | 2.0 | 4.0 | 5.0 | | 10.0 |
| | $m^3/h$ | 3.6 | 7.2 | 14.4 | 18.0 | | 36.0 |
| Head, m | | 16 | 26 | 28 | 24 | 32 | 45 |
| Max self-priming height, m (for self-priming pumps) | | 4.0 | | | | 3.5 | 3.0 |
| Maximum period of self-priming, seconds (for self-priming pumps) | | 600 | | | | | |
| Maximum suction pressure, bar ($kgf/cm^2$) | | 2.5 | | | | | |
| Power, kW | | 1.2 | 4.6 | 7.0 | 8.3 | 8.8 | 27 |
| Power supply | | ~ 220 / 380 / 660 V; 50 Hz | | | | | |
| Efficiency, % | pump | 28 | 33 | 41 | 38 | 39 | 35 |
| | unit | 22 | 26 | 32 | 30 | | 31 |
| NPSH, m | | 4.0 | 5.0 | 6.0 | 6.5 | | 7.0 |
| Leakage through the gland seal, l/h (drops/min), max | | 0.3 - 1.0 (50-170) | | | | | |

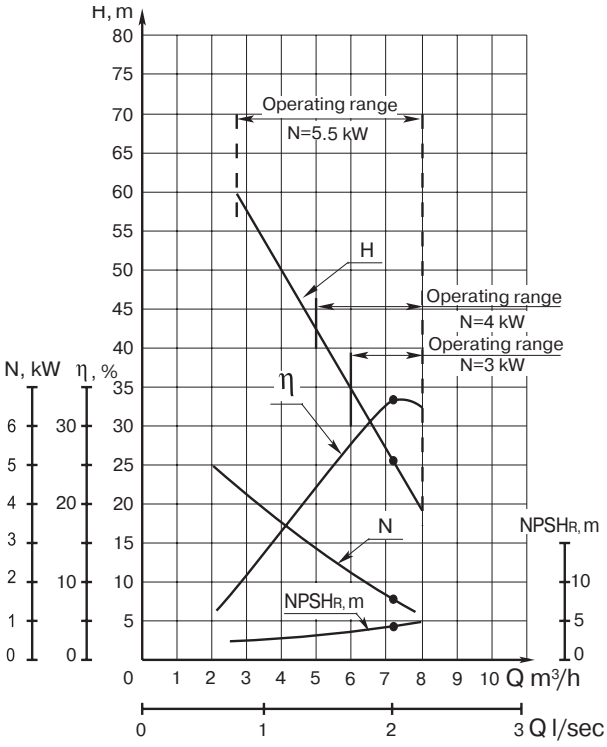
The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 $kg/m^3$

## PERFORMANCE CURVE

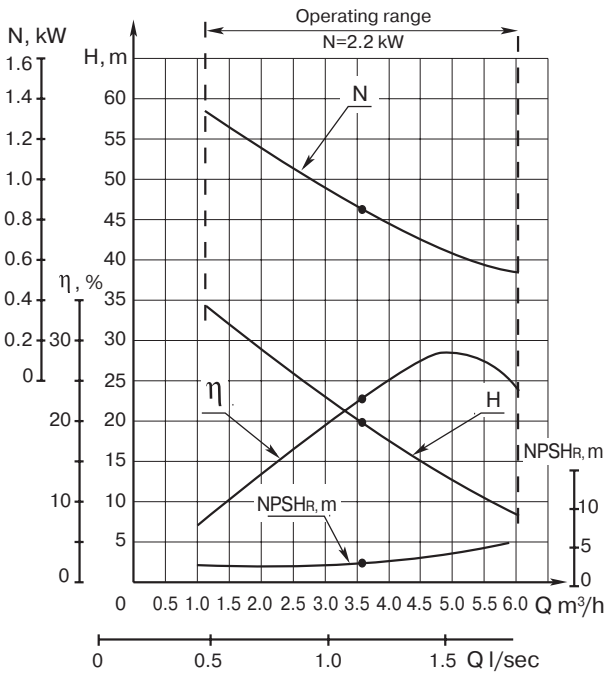
**VK 1/16, VKS 1/16, VKO 1/16**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



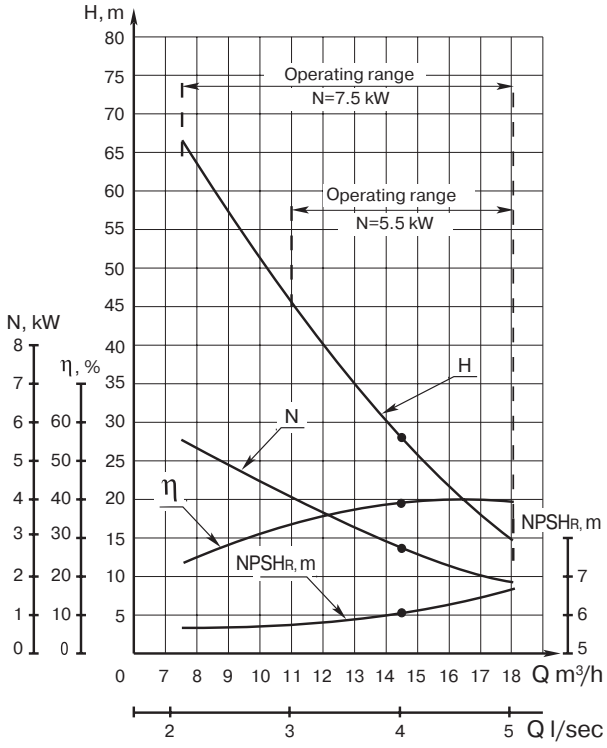

**VK 2/26, VKS 2/26, VKO 2/26**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**VK 2/26, VKS 2/26, VKO2/26**
rotation speed 16 $s^{-1}$ (970 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

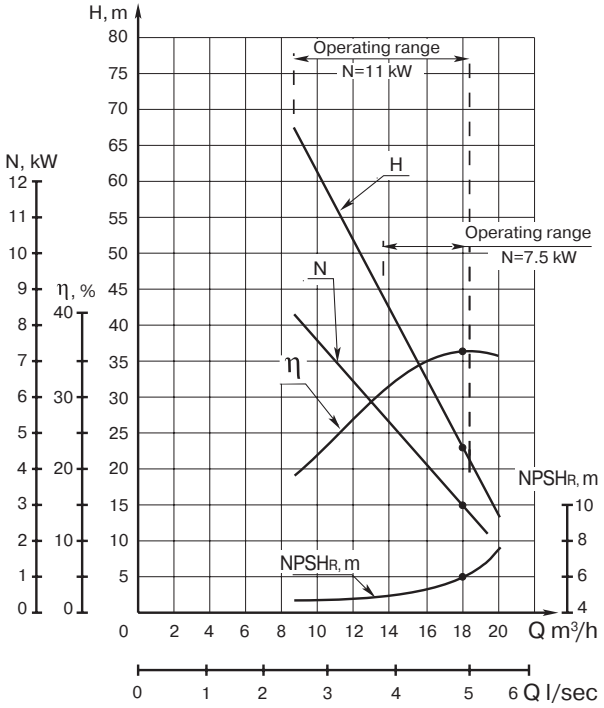



**VK 4/28, VKS 4/28, VKO 4/28**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

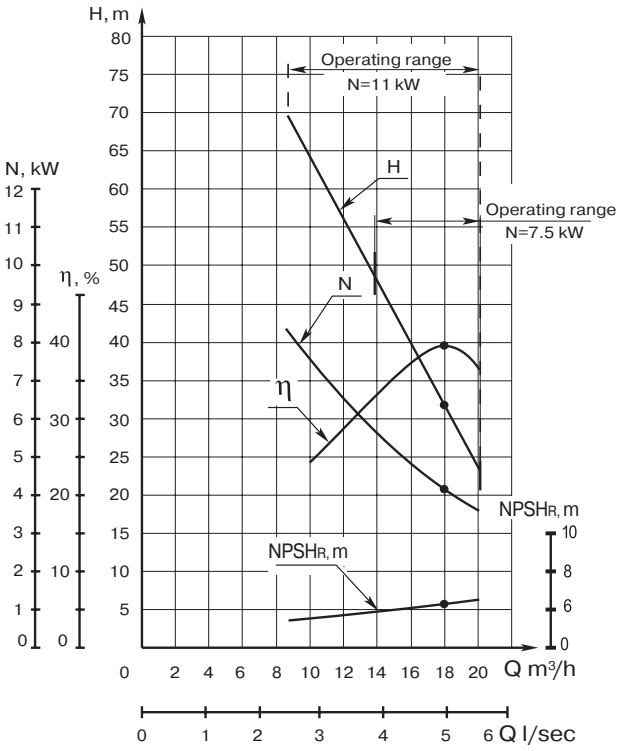


## PERFORMANCE CURVE

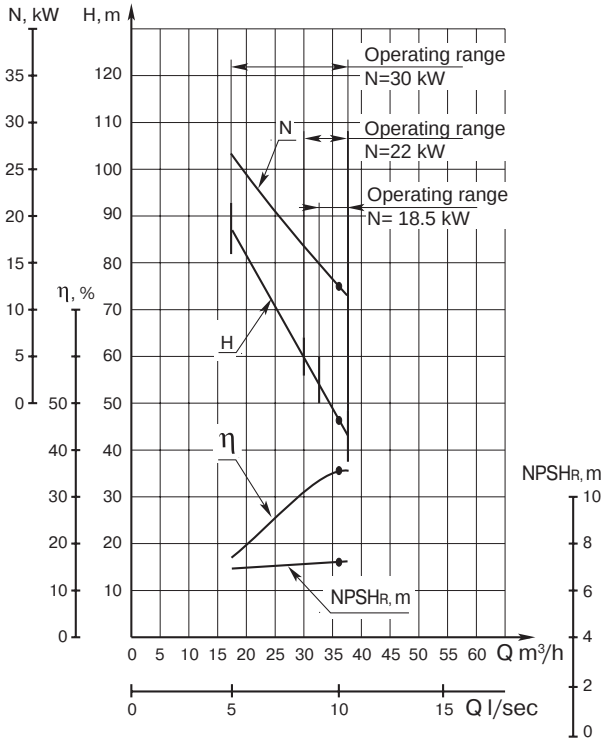
**VK 5/24, VKS 5/24, VKO 5/24**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



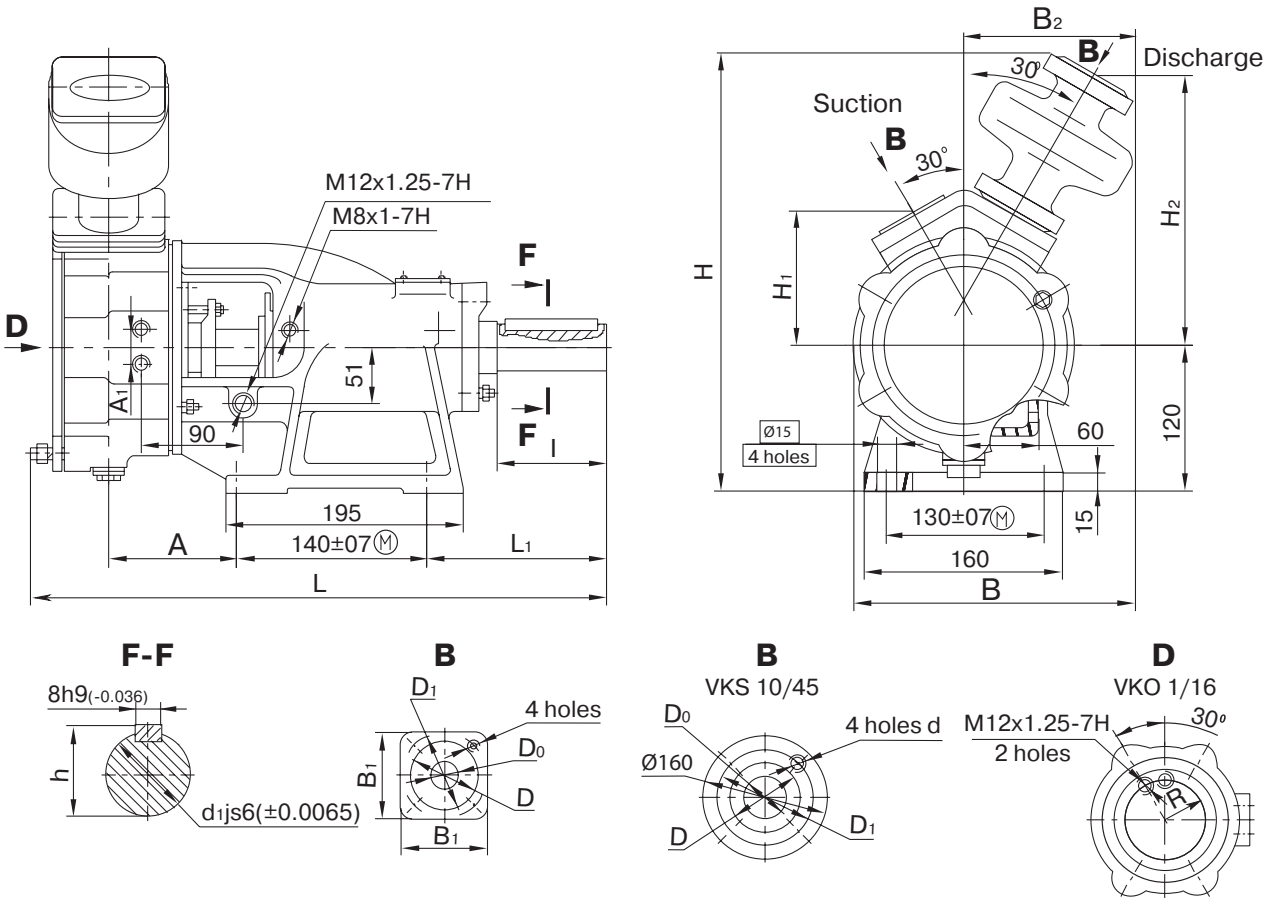

**VK 5/32, VKS 5/32, VKO 5/32**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**VK 10/45, VKS 10/45, VKO 10/45**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

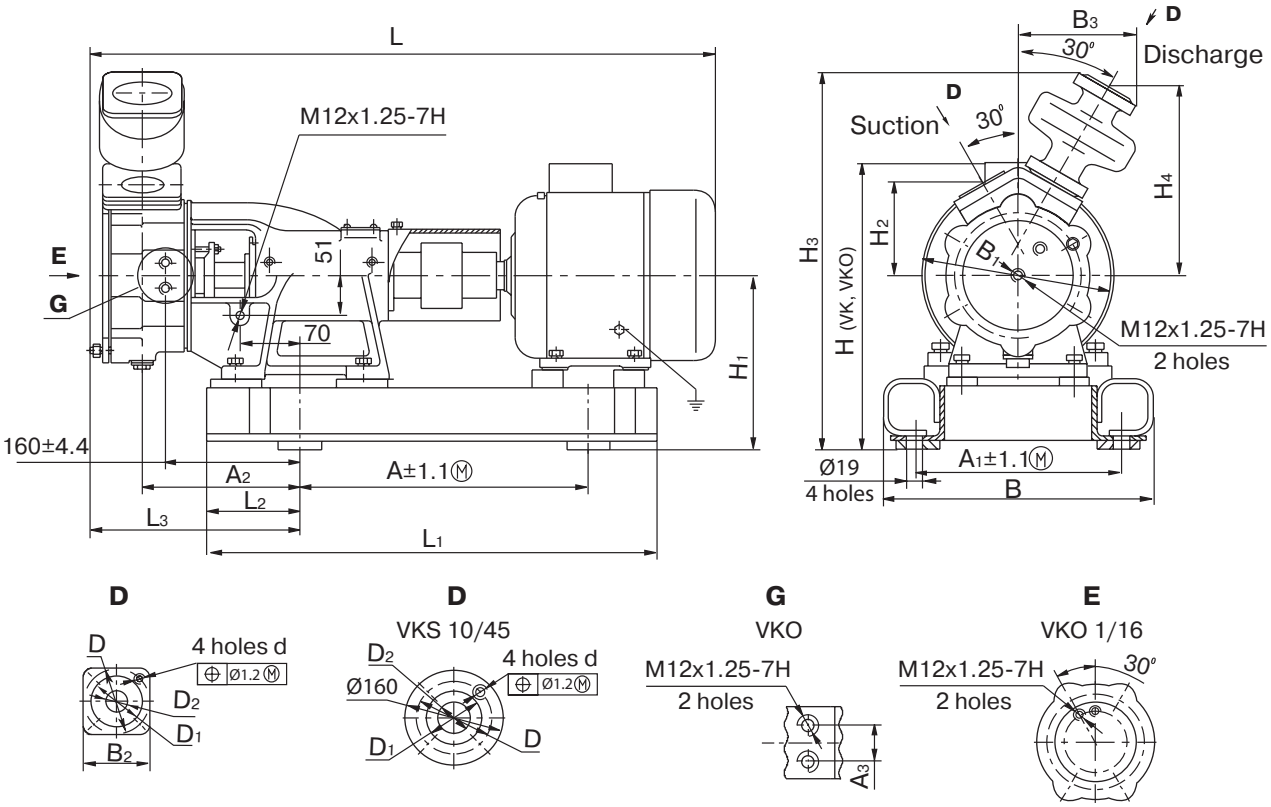


## PUMP OVERALL DIMENSION




| Pump | Dimensions, mm | | | | | | | | | | | | | | | | | Weight, kg by material | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | A | $A_1$ | $D_0$ | D | $D_1$ | d | $d_1$ | h | l | R | A | B | K |
| VK 1/16 | 413 | 95 | 185 | 78 | - | 250 | 108 | - | 122 | - | 25 | 60 | 75 | M10 | 25 | 28 | 50 | - | 26.2 | 30.9 | 27.9 |
| VKS 1/16 | 420 | | 233 | | 140 | 360 | | 221 | | - | | | | | | | | - | 29.7 | 34.0 | 33.0 |
| VKO 1/16 | 424 | | 185 | | - | 250 | | - | | 30 | | | | | | | | 55 | 29.8 | - | . |
| VK 2 /26 | 422 | | 190 | 100 | - | 250 | 107 | - | | - | 40 | 80 | 100 | M12 | | | | - | 29.7 | 33.5 | 31.8 |
| VKS 2 /26 | 427 | | 250 | | 155 | 370 | | 220 | | - | | | | | | | | - | 33.2 | 37.9 | 36.5 |
| VKO 2 /26 | 448 | | 185 | | - | 250 | | - | | 30 | | | | | | | | 68 | 32.4 | - | - |
| VK 4 /28 | 434 | | 204 | | - | 254 | 110 | - | 126 | - | | | | | | | | - | 28.0 | 36.8 | 34.9 |
| VKS 4 /28 | | | 260 | | 160 | 366 | | 223 | | - | | | | | | | | - | 35.6 | 39.0 | 38.0 |
| VKO 4 / 28 | 454 | | 196 | | - | 254 | | - | | 30 | | | | | | | | 72 | 36.5 | - | - |
| VK 5 / 24 | 440 | | 217 | 108 | - | 260 | 115 | - | | - | 50 | 90 | 110 | | | | | - | 33.7 | 39.4 | 38.3 |
| VKS 5 / 24 | | | 269 | | 162 | 374 | | 228 | | - | | | | | | | | - | 37.9 | 43.0 | 42.0 |
| VKO 5 / 24 | 460 | | 210 | | - | 260 | | - | | 30 | | | | | | | | 79 | 40.0 | - | - |
| VK 5 / 32 | 440 | | 217 | | - | 260 | | - | | - | | | | | | | | - | 32.0 | 39.4 | 38.3 |
| VKS 5 / 32 | | | 269 | | 162 | 374 | | 228 | | - | | | | | | | | - | 37.9 | 43.0 | 42.0 |
| VKO 5 / 32 | 460 | | 210 | | - | 260 | | - | | 30 | | | | | | | | 79 | 40.0 | - | - |
| VK 10 / 45 | 479 | 112 | 243 | 125 | - | 270 | 121 | - | 135 | - | 65 | 110 | 130 | | 28 | 31 | 60 | - | 44.0 | 49.8 | 47.3 |
| VKS 10 / 45 | | | 335 | | 215 | 425 | | 261 | | - | | | | | | | | - | 48.0 | 54.5 | 54.0 |
| VKO 10 / 45 | 508 | | 240 | | - | 270 | | - | 143 | 60 | | | | | | | | 87 | 50.0 | - | - |

## UNIT OVERALL DIMENSIONS




| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_3$ | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | A | $A_1$ | $A_2$ | D | $D_1$ | $D_2$ | d |
| VK 1/16 | A80V4 | 1.5 | 24 (1450) | 755 | 525 | 109 | 248 | 315 | 220 | 78 | 333 | 203 | 108 | 336 | 240 | 190 | 75 | 60 | 25 | M10-7H |
| | 5A80MV4 | | | | | | | | | | | | | | | | | | | |
| | AIR80V4 | | | | | | | | | | | | | | | | | | | |
| | ADM80V4 | | | | | | | | | | | | | | | | | | | |
| | 5A80MV4-OM2 | | | | | | | | | | | | | | | | | | | |
| | AIR80V4-OM2 | | | | | | | | | | | | | | | | | | | |
| VK 2/26 | AIR100L6 | 2.2 | 16 (970) | 835 | 580 | 102 | 257 | 300 | 240 | 100 | 344 | 198 | 107 | 379 | 250 | 190 | 100 | 80 | 40 | M12-7H |
| | A100L6 | | | 863 | | | | | | | 370 | | | | | | | | | |
| | ADM100L6 | | | 835 | | | | | | | 344 | | | | | | | | | |
| | A100S4 | 3 | 24 (1450) | 820 | 555 | | | | | | 328 | | | 365 | | | | | | |
| | AIR100S4 | | | 805 | | | | | | | 344 | | | | | | | | | |
| | ADM100S4 | | | | | | | | | | | | | | | | | | | |
| | AIR100L4 | 4 | | 835 | 580 | | | | | | 344 | | | 379 | | | | | | |
| | A100L4 | | | 863 | | | | | | | 375 | | | | | | | | | |
| | ADM100L4 | | | 835 | | | | | | | 344 | | | | | | | | | |
| | 5A100L4-OM2 | | | | | | | | | | | | | | | | | | | |
| | A112M4 | 5.5 | | 925 | 630 | 109 | | 290 | 250 | | 388 | 203 | | 413 | 240 | | | | | |
| | AIR112M4 | | | 885 | | | | | | | 363 | | | | | | | | | |
| | ADM112M4 | | | | | | | | | | 366 | | | | | | | | | |
| | AIRM112M4 | | | | | | | | | | 376 | | | | | | | | | |
| | 5AM112M4 | | | 930 | | | | | | | 371 | | | | | | | | | |

* Index for a pumping unit; supplied on a base frame

## UNIT OVERALL DIMENSIONS

| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | A | $A_1$ | $A_2$ | D | $D_1$ | $D_2$ | d |
| VK 4/28 | AIR112M4 AIRM112M4 | 5.5 | 24 (1450) | 895 | 630 | 109 | 477 | 269 | 290 | 245 | 100 | 361 | 203 | 110 | 413 | 240 | 195 | 100 | 80 | 40 | M12-7H |
| | 5AM112M4 | | | 942 | | | | | | | | 371 | | | | | | | | | |
| | A112M4 | | | 937 | | | | | | | | 388 | | | | | | | | | |
| | ADM112M4 | | | 905 | | | | | | | | 366 | | | | | | | | | |
| | A132S4 | 7.5 | | 967 | 640 | 102 | 529 | | 300 | 258 | 108 | 388 | 210 | 115 | 432 | | | 110 | 90 | 50 | |
| | AIRM132S4 | | | 922 | | | | | | | | 403 | | | | | | | | | |
| | AIR132S4 | | | 925 | | | | | | | | 389 | | | | | | | | | |
| VK 5/24; VK 5/32 | AIRM132S4 | 7.5 | | 928 | | | | 275 | | | | 403 | | | | | | | | | |
| | A132S4 | | | 973 | | | | | | | | 388 | | | | | | | | | |
| | AIRM132M4 | 11 | | 966 | 680 | | 560 | | | | | 403 | | | 451 | | | | | | |
| | A132M4 | | | 973 | | | | | | | | 388 | | | | | | | | | |
| VK 10/45 | AIR160M4 | 18.5 | | 1167 | 780 | 97 | 588 | 297 | 331 | 350 | 125 | 467 | 242 | 121 | 560 | 290 | 205 | 130 | 110 | 65 | |
| | 5A160M4 | | | 1207 | | | | | | | | 484 | | | | | | | | | |
| | AIR180S4 | 22 | | 1137 | 777 | | | | 356 | | | 522 | 262 | | | 315 | | | | | |
| | A180S4 | | | 1152 | | | | | | | | 507 | | | | | | | | | |
| | AIR180M4 | 30 | | 1187 | 815 | | 724 | | 430 | | | 522 | | | | | | | | | |
| | 4AMN180S4 | | | 1087 | | | | | | | | 552 | | | | | | | | | |
| | A180M4 | | | 1212 | | | | | | | | 507 | | | | | | | | | |

| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_4$ | B | $B_1$ | $B_2$ | $B_3$ | $H_1$ | $H_2$ | $H_3$ | $H_4$ | A | $A_1$ | $A_2$ | D | $D_1$ | $D_2$ | d |
| VKS 1/16 | A80B4 | 1.5 | 24 (1450) | 762 | 525 | 109 | 255 | 315 | 220 | 78 | 140 | 203 | 108 | 443 | 221 | 336 | 240 | 190 | 75 | 60 | 25 | M10-7H |
| | 5A80MB4 | | | | | | | | | | | | | | | | | | | | | |
| | AIR80B4 | | | | | | | | | | | | | | | | | | | | | |
| | ADM80B4 | | | | | | | | | | | | | | | | | | | | | |
| | 5A80MB4-OM2 | | | | | | | | | | | | | | | | | | | | | |
| | AIR80V4-OM2 | | | | | | | | | | | | | | | | | | | | | |
| VKS 2/26 | AIR100L6 | 2.2 | 16 (970) | 840 | 580 | 102 | 262 | 300 | 240 | 100 | 155 | 198 | 107 | 448 | 220 | 379 | 250 | 192 | 100 | 80 | 40 | M12-7H |
| | A100L6 | | | 870 | | | | | | | | | | | | | | | | | | |
| | ADM100L6 | | | 840 | | | | | | | | | | | | | | | | | | |
| | A100S4 | 3 | 24 (1450) | 825 | 555 | | | | | | | | | | | 365 | | | | | | |
| | AIR100S4 | | | 808 | | | | | | | | | | | | | | | | | | |
| | ADM100S4 | | | | | | | | | | | | | | | | | | | | | |
| | AIR100L4 | 4 | | 840 | 580 | | | | | | | | | | | 379 | | | | | | |
| | A100L4 | | | 868 | | | | | | | | | | | | | | | | | | |
| | ADM100L4 | | | 840 | | | | | | | | | | | | | | | | | | |
| | 5A100L4OM2 | | | | | | | | | | | | | | | | | | | | | |
| | A112M4 | 5.5 | | 930 | 630 | 109 | | 290 | 250 | | | 203 | | 453 | | 413 | 240 | | | | | |
| | AIR112M4 | | | 888 | | | | | | | | | | | | | | | | | | |
| | ADM112M4 | | | | | | | | | | | | | | | | | | | | | |
| | AIRM112M4 | | | 890 | | | | | | | | | | | | | | | | | | |
| | 5AM112M4 | | | 935 | | | | | | | | | | | | | | | | | | |

* Index for a pumping unit; supplied on a base frame

## UNIT OVERALL DIMENSIONS

| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_4$ | B | $B_1$ | $B_2$ | $B_3$ | $H_1$ | $H_2$ | $H_3$ | $H_4$ | A | $A_1$ | $A_2$ | D | $D_1$ | $D_2$ | d |
| VKS 4/28 | AIR112M4 | 5.5 | 24 (1450) | 895 | 630 | 109 | 269 | 290 | 245 | 100 | 160 | 203 | 110 | 449 | 223 | 413 | 240 | 195 | 100 | 80 | 40 | M12-7H |
| | 5AM112M4 | | | 942 | | | | | | | | | | | | | | | | | | |
| | A112M4 | | | 937 | | | | | | | | | | | | | | | | | | |
| | ADM112M4 | | | 905 | | | | | | | | | | | | | | | | | | |
| | A132S4 | 7.5 | | 967 | 640 | 102 | | 300 | 258 | 108 | 162 | 210 | 115 | 456 | 228 | 432 | | | 110 | 90 | 50 | |
| | AIRM132S4 | | | 922 | | | | | | | | | | | | | | | | | | |
| | AIR132S4 | | | 925 | | | | | | | | | | | | | | | | | | |
| VKS 5/24; VKS 5/32 | AIRM132S4 | 7.5 | | 928 | 640 | | | | | | | | | | | | | | | | | |
| | A132S4 | | | 973 | | | | | | | | | | | | | | | | | | |
| | AIRM132M4 | 11 | | 966 | 680 | | | | | | | | | | | 451 | | | | | | |
| | A132M4 | | | 973 | | | | | | | | | | | | | | | | | | |
| VKS 10/45 | AIR160M4 | 18.5 | | 1167 | 780 | 97 | 297 | 331 | 350 | 125 | 215 | 242 | 121 | 547 | 261 | 560 | 290 | 205 | 130 | 110 | 65 | |
| | 5A160M4 | | | 1207 | | | | | | | | | | | | | | | | | | |
| | AIR180S4 | 22 | | 1137 | 777 | | | 356 | | | | 262 | | 567 | | | 315 | | | | | |
| | A180S4 | | | 1152 | | | | | | | | | | | | | | | | | | |
| | AIR180M4 | 30 | | 1187 | 815 | | | | | | | | | | | | | | | | | |
| | 4AMN180S4 | | | 1087 | | | | | | | | | | | | | | | | | | |
| | A180M4 | | | 1212 | | | | | | | | | | | | | | | | | | |

| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_3$* | $L_4$ | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | A | $A_1$ | $A_2$ | $A_3$ | D | $D_1$ | $D_2$ | d | R |
| VKO 1/16 | A80V4 | 1.5 | 24 (1450) | 765 | 525 | 109 | 355 | 260 | 315 | 220 | 78 | 333 | 203 | 108 | 336 | 240 | | | 75 | 60 | 25 | M10-7H | 55 |
| | 5A80MV4 | | | | | | | | | | | | | | | | | | | | | | |
| | AIR80V4 | | | | | | | | | | | | | | | | | | | | | | |
| | ADM80V4 | | | | | | | | | | | | | | | | | | | | | | |
| | 5A80MV4-OM2 | | | | | | | | | | | | | | | | | | | | | | |
| | AIR80V4-OM2 | | | | | | | | | | | | | | | | | | | | | | |
| VKO 2/26 | AIR100L6 | 2.2 | 16 (970) | 860 | 580 | 102 | 433 | 284 | 300 | 240 | 100 | 344 | 198 | 107 | 379 | 250 | 190 | 30 | 100 | 80 | 40 | M12-7H | 68 |
| | A100L6 | | | 890 | | | | | | | | 370 | | | | | | | | | | | |
| | ADM100L6 | | | 860 | | | | | | | | 344 | | | | | | | | | | | |
| | A100S4 | 3 | 24 (1450) | 845 | 555 | | | | | | | 328 | | | 365 | | | | | | | | |
| | AIR100S4 | | | 830 | | | | | | | | 344 | | | | | | | | | | | |
| | ADM100S4 | | | | | | | | | | | | | | | | | | | | | | |
| | AIR100L4 | 4 | | 860 | 580 | | | | | | | | | | 379 | | | | | | | | |
| | A100L4 | | | 890 | | | | | | | | | | | | | | | | | | | |
| | ADM100L4 | | | 860 | | | | | | | | | | | | | | | | | | | |
| | 5A100L4-OM2 | | | | | | | | | | | | | | | | | | | | | | |
| | A112M4 | 5.5 | | 951 | 630 | 109 | 497 | | 290 | 250 | | 388 | 203 | | 413 | 240 | | | | | | | |
| | AIR112M4 | | | 910 | | | | | | | | 363 | | | | | | | | | | | |
| | ADM112M4 | | | | | | | | | | | 366 | | | | | | | | | | | |
| | AIRM112M4 | | | | | | | | | | | 376 | | | | | | | | | | | |
| | 5AM112M4 | | | 950 | | | | | | | | 371 | | | | | | | | | | | |

* Index for a pumping unit; supplied on a base frame

## UNIT OVERALL DIMENSIONS

| Type | | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | Electric motor | | | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | B | $B_1$ | $B_2$ | H | $H_1$ | $H_2$ | A | $A_1$ | $A_2$ | $A_3$ | D | $D_1$ | $D_2$ | d | R |
| VKO 4/28 | AIR112M4 | 5.5 | 24 (1450) | 915 | 630 | 109 | 477 | 290 | 290 | 245 | 100 | 361 | 203 | 110 | 413 | 240 | 196 | 30 | 100 | 80 | 40 | M12-7H | 72 |
| | 5AM112M4 | | | 962 | | | | | | | | 371 | | | | | | | | | | |
| | A112M4 | | | 957 | | | | | | | | 388 | | | | | | | | | | |
| | ADM112M4 | | | 915 | | | | | | | | 366 | | | | | | | | | | |
| | A132S4 | 7.5 | | 987 | 640 | 102 | 529 | | 300 | | | 388 | 210 | 115 | 432 | | | | | | | | |
| | AIRM132S4 | | | 942 | | | | | | | | 403 | | | | | | | | | | |
| | AIR132S4 | | | 945 | | | | | | | | 389 | | | | | | | | | | |
| VKO5/24;VKO5/32 | AIRM132S4 | 7.5 | | 948 | | | 541 | 296 | | 258 | 108 | 403 | | | | | | | 110 | 90 | 50 | | 79 |
| | A132S4 | | | 993 | | | | | | | | 388 | | | | | | | | | | |
| | AIRM132M4 | 11 | | 986 | 680 | | | | | | | 403 | | | 451 | | | | | | | | |
| | A132M4 | | | 993 | | | | | | | | 388 | | | | | | | | | | |
| VKO 10/45 | AIR160M4 | 18.5 | | 1196 | 780 | 97 | 690 | 325 | 331 | 350 | 125 | 467 | 242 | 121 | 560 | 290 | 213 | 60 | 130 | 110 | 65 | | 87 |
| | 5A160M4 | | | 1236 | | | | | | | | 484 | | | | | | | | | | |
| | AIR180S4 | 22 | | 1166 | 777 | | | | 356 | | | 522 | 262 | | | 315 | | | | | | | |
| | A180S4 | | | 1181 | | | | | | | | 507 | | | | | | | | | | |
| | AIR180M4 | 30 | | 1216 | 815 | | 735 | | | | | 522 | | | | | | | | | | | |
| | 4AMN180S4 | | | 1116 | | | | | | | | 552 | | | | | | | | | | | |
| | A180M4 | | | 1241 | | | | | | | | 507 | | | | | | | | | | | |

* Index for a pumping unit; supplied on a base frame

# CVK SERIES
## CENTRIFUGAL END-SUCTION VORTEX PUMPS

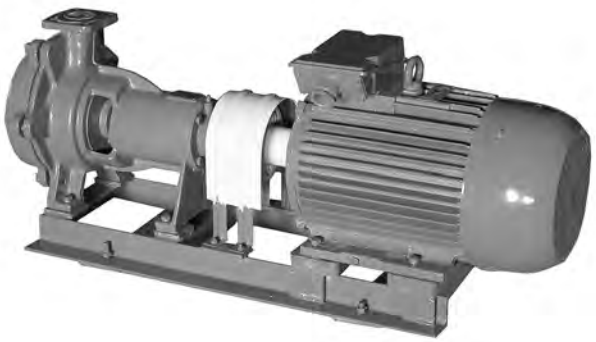
### APPLICATION

The centrifugal end-suction vortex pumps of the CVK series are intended for pumping of water and similar neutral liquids.

- Max kinematic viscosity: $36x10^{-6}$ $m^2/s$ (36 cSt)
- Max density: 1200 $kg/m^3$
- Max solids content: 0.01%
- Max solids size: 0.05 mm
- Temperature: -15 to +105 °C

The pumps are not intended for operation with flammable liquids.

An explosion-proof version is available by request.



### PUMP SERIES DESIGNATION

**CVK 6.3/120**

CVK XX / XXX

Pump series

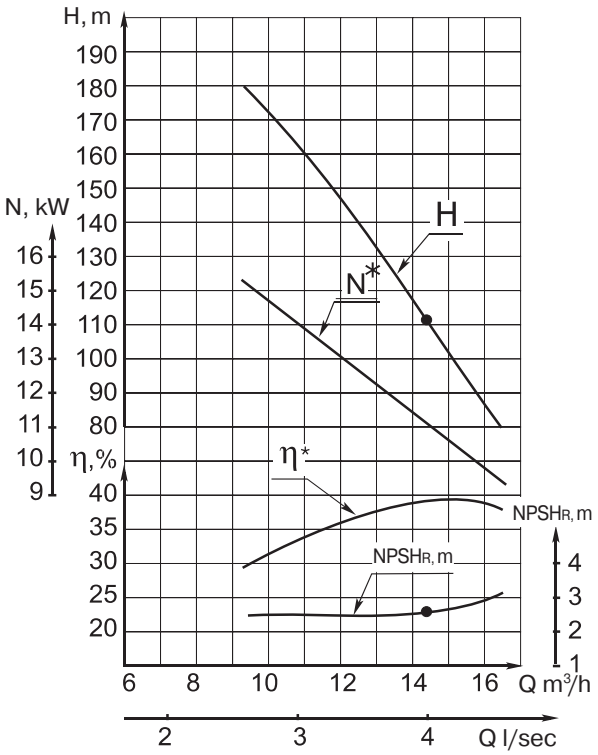
Capacity, liters per second

Head, m

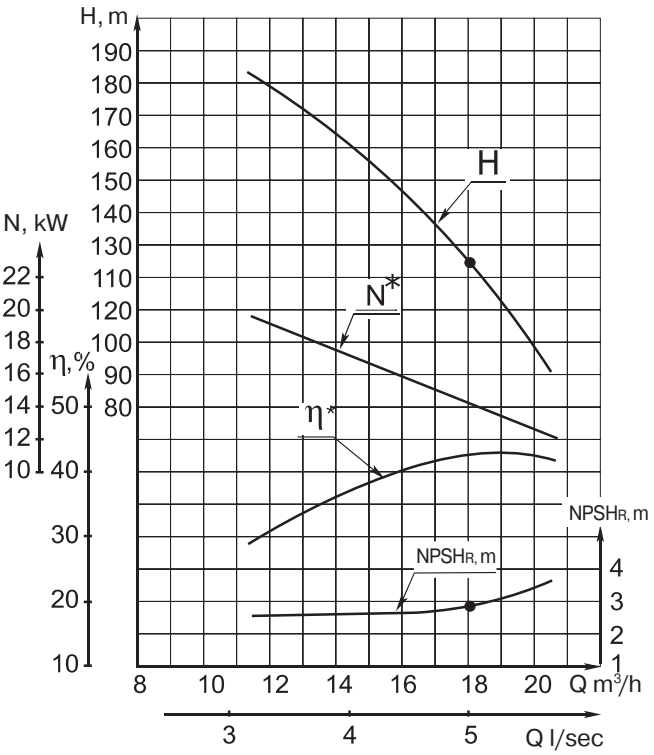
| TECHNICAL DATA | | | |
|---|---|---|---|
| | **CVK 4/112** | **CVK 5/125** | **CVK 6.3/160** |
| Capacity, l/sec ($m^3/h$) | 4 (14.4) | 5 (18) | 6.3 (22.7) |
| Head, m | 112 | 125 | 160 |
| Rotation speed, $s^{-1}$ (rpm) | 49 (2950) | 49 (2950) | 49 (2950) |
| Max NPSH, m | 2.6 | 2.8 | 3.0 |
| Max pump suction pressure, bar ($kgf/cm^2$) | 2.5 | 2.5 | 2.5 |
| Pump discharge pressure, bar ($kgf/cm^2$) | 20.5 | 20.8 | 21.5 |
| Power, kW, max | 17 | 21 | 29 |
| Efficiency, % | 0.40 (40) | 0.43 (43) | 0.44 (44) |
| Power supply | ~ 220 / 380 / 660 V; 50 Hz | | |

## PERFORMANCE CURVE

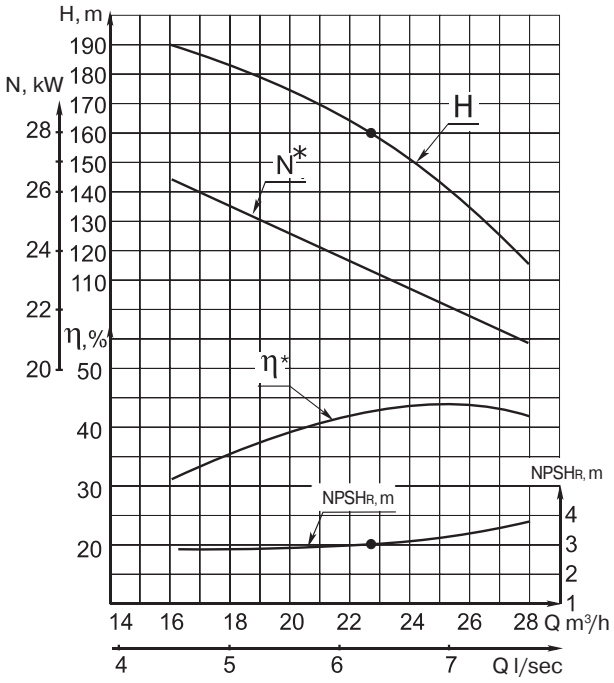
**CVK 4/112** * – pump data
rotation speed 49 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



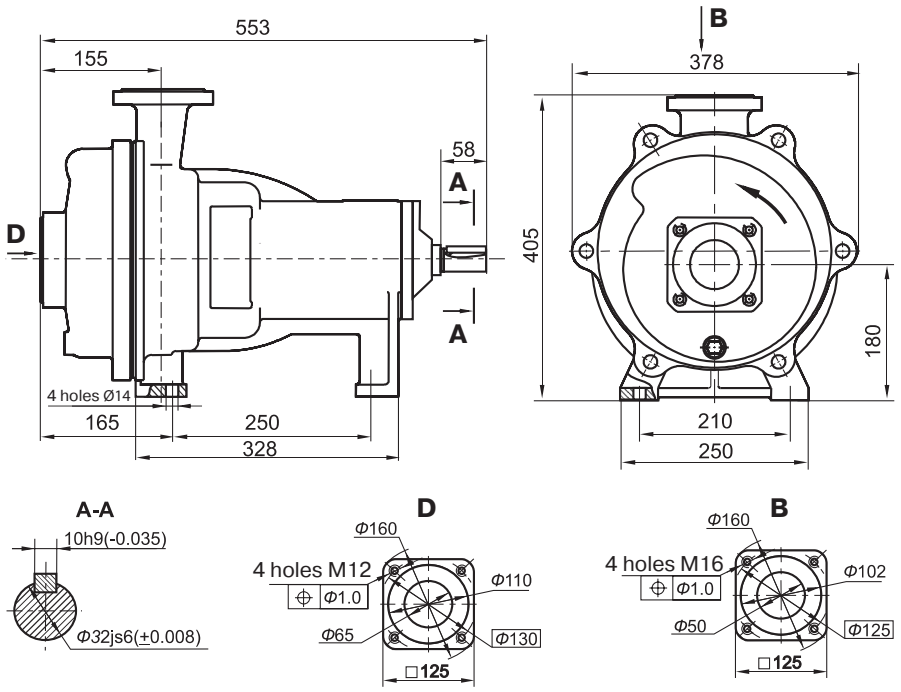

**CVK 5/125** * – pump data
rotation speed 49 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

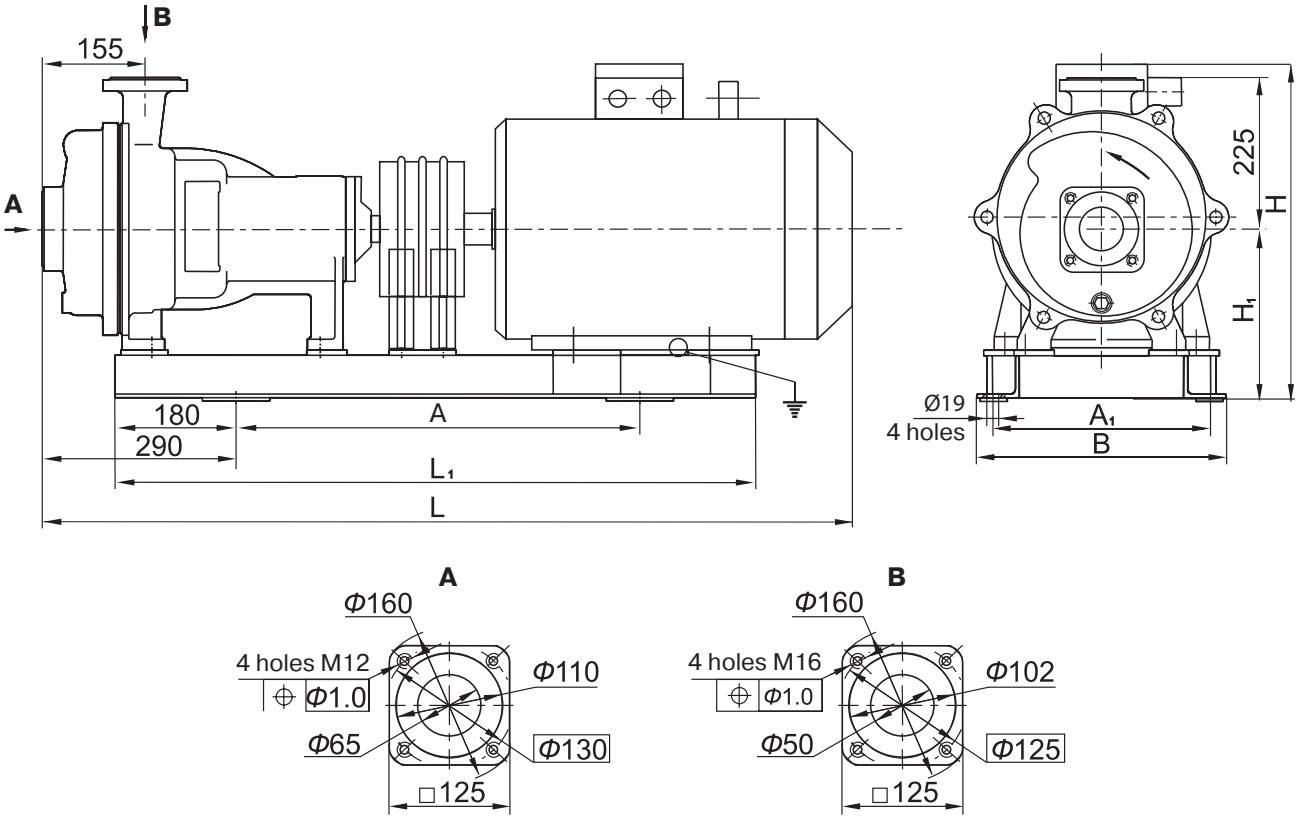



**CVK 6.3/160** * – pump data
rotation speed 49 $s^{-1}$ (2950 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



## OVERALL DIMENSIONS



## TECHNICAL DATA

| Unit | Electric motor type | Power, kW | Rotation speed, $s^{-1}$(rpm) | Dimensions, mm | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | $L_1$ | B | H | $H_1$ | A | $A_1$ | |
| **CVK 4/112** | AIR160M2 | 18,5 | 50 (3000) | 1205 | 970 | 400 | 500 | 160 | 600 | 336 | 220 |
| | 5A160M2 | | | 1260 | | | 500 | | | | 245 |
| | VA160M2 | | | 1230 | | | 615 | | | | 270 |
| | AIMR160M2 | | | 1290 | | | 590 | | | | 270 |
| **CVK 4/112 CVK 5/125** | AIR180S2 | 22 | | 1190 | | 370 | 515 | 180 | | 320 | 265 |
| | A180S2 | | | 1205 | | | 500 | | | | 252 |
| | VA180S2 | | | 1205 | | | 575 | | | | 285 |
| | AIMR180S2 | | | 1260 | | | 610 | | | | 325 |
| **CVK 5/125 CVK 6.3/160** | AIR180M2 | 30 | | 1240 | | | 515 | | | | 285 |
| | A180M2 | | | 1265 | | | 500 | | | | 275 |
| | VA180M2 | | | 1265 | | | 575 | | | | 305 |
| | AIMR180M2 | | | 1305 | | | 610 | | | | 345 |
| **CVK 6.3/160** | 4AMN180S2 | | | 1140 | | | 475 | | | | 275 |
| | 5A200M2 | 37 | | 1295 | 1000 | 406 | 560 | 200 | 640 | 360 | 345 |
| | A200M2 | | | 1365 | | | 550 | | | | 340 |
| | VA200M2 | | | 1325 | | | 635 | | | | 415 |

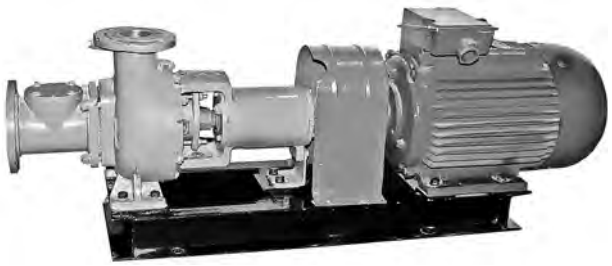
# SM SERIES
## CENTRIFUGAL OVERHUNG END-SUCTION PUMPS

### APPLICATION

The centrifugal overhung end-suction pumps of the SM series are intended for pumping of residential and industrial waste water and other non-aggressive liquids.

- Hydrogen index (pH): 6.0-8.5
- Max density: 1050 kg/m$^3$
- Max temperature: + 80 °C
- Max solids content: 1%
- Max solids size: 5.0 mm
- Max concentration of pumped mass: 2 %
- Max gas content: 5 %

The pumps are not intended for operation in explosion and fire hazardous premises.



### PUMP SERIES DESIGNATION

**SM 150–125–315–6**

SM XXX - XXX - XXX - X

Pump series

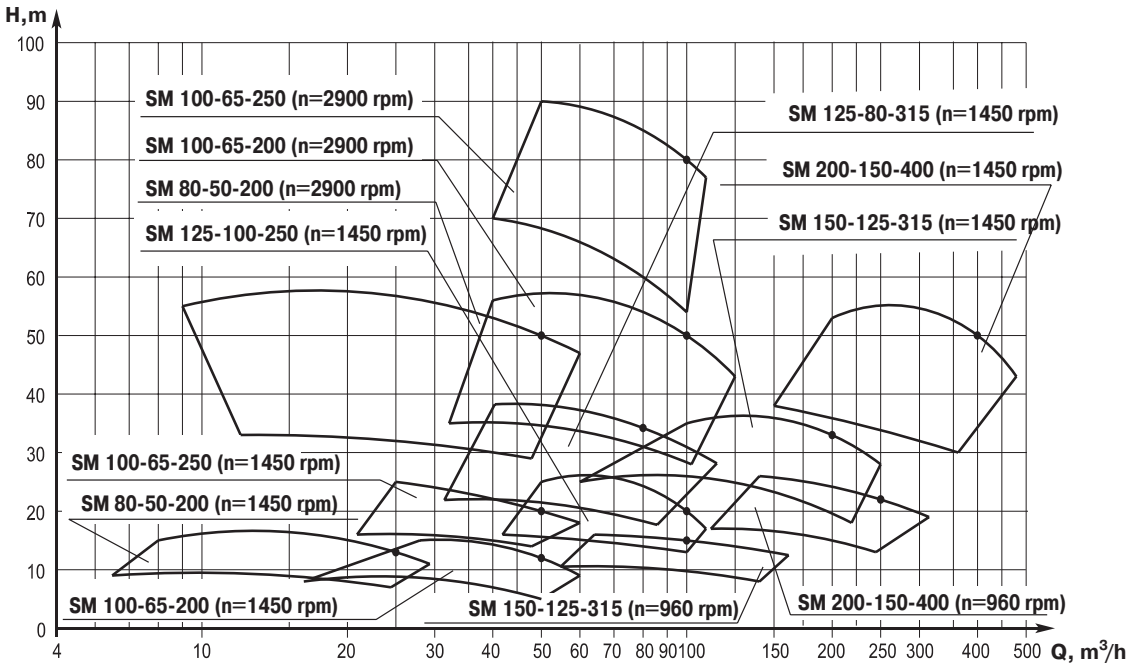
Suction nozzle diameter, mm

Discharge nozzle diameter, mm

**a**, **b** – decreased Impeller diameter

Rotation speed index: **2** - 48.4 s$^{-1}$ (2900 rpm), **4** - 24.2 s$^{-1}$ (1450 rpm), **6** - 16.0 s$^{-1}$ (960 rpm)

### PERFORMANCE RANGE



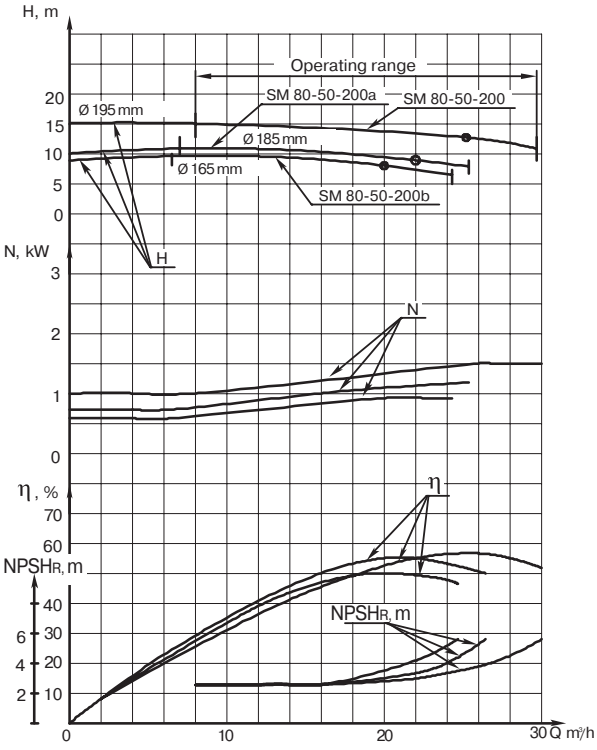
## TECHNICAL DATA

| Pump | Capacity, m³/h | Head, m | Rotation speed, rpm | Power, kW |
|---|---|---|---|---|
| SM 80-50-200-2 | 50 | 50 | 2900 | 14.6 |
| SM 80-50-200a-2 | 45 | 42 | 2900 | 10.2 |
| SM 80-50-200b-2 | 25 | 32 | 2900 | 8.6 |
| SM 80-50-200-4 | 25 | 12.5 | 1450 | 2.2 |
| SM 80-50-200a-4 | 22 | 9 | 1450 | 1.7 |
| SM 80-50-200b-4 | 20 | 7.5 | 1450 | 1.2 |
| SM 100-65-200-2 | 100 | 50 | 2900 | 27 |
| SM 100-65-200a-2 | 100 | 32 | 2900 | 20.1 |
| SM 100-65-200b-2 | 80 | 32 | 2900 | 15 |
| SM 100-65-200-4 | 50 | 12.5 | 1450 | 3.5 |
| SM 100-65-200a-4 | 45 | 9 | 1450 | 2.6 |
| SM 100-65-200b-4 | 40 | 8 | 1450 | 2 |
| SM 100-65-250-2 | 100 | 80 | 2900 | 42 |
| SM 100-65-250a-2 | 90 | 70 | 2900 | 35 |
| SM 100-65-250b-2 | 80 | 60 | 2900 | 27 |
| SM 100-65-250-4 | 50 | 20 | 1450 | 6 |
| SM 100-65-250a-4 | 45 | 16 | 1450 | 4.4 |
| SM 100-65-250b-4 | 40 | 15 | 1450 | 4 |
| SM 125-100-250-4 | 100 | 20 | 1450 | 11.2 |
| SM 125-100-250a-4 | 100 | 15 | 1450 | 8.2 |
| SM 125-100-250b-4 | 80 | 14 | 1450 | 6.8 |
| SM 150-125-315-4 | 200 | 32 | 1450 | 29 |
| SM 150-125-315a-4 | 180 | 27.5 | 1450 | 24 |
| SM 150-125-315b-4 | 160 | 22.5 | 1450 | 19 |
| SM 150-125-315-6 | 100 | 15 | 960 | 9.6 |
| SM 150-125-315a-6 | 100 | 12.5 | 960 | 8.5 |
| SM 150-125-315b-6 | 92 | 10 | 960 | 6.9 |
| SM 200-150-400-4 | 400 | 50 | 1450 | 98 |
| SM 200-150-400a-4 | 300 | 40 | 1450 | 70.2 |
| SM 200-150-400b-4 | 300 | 32 | 1450 | 53 |
| SM 200-150-400-6 | 250 | 22.5 | 960 | 28 |
| SM 200-150-400a-6 | 220 | 17 | 960 | 21 |
| SM 200-150-400b-6 | 200 | 14 | 960 | 15.5 |
| SM 125-80-315-4 | 80 | 32 | 1450 | 15 |
| SM 125-80-315a-4 | 72 | 26 | 1450 | 13.2 |
| SM 125-80-315b-4 | 65 | 20 | 1450 | 11.2 |

## PERFORMANCE CURVE

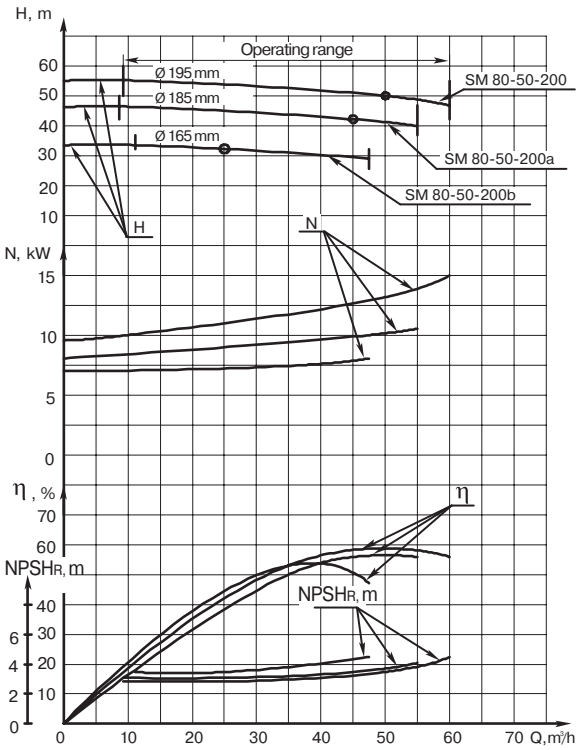
### SM 80–50–200–4

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



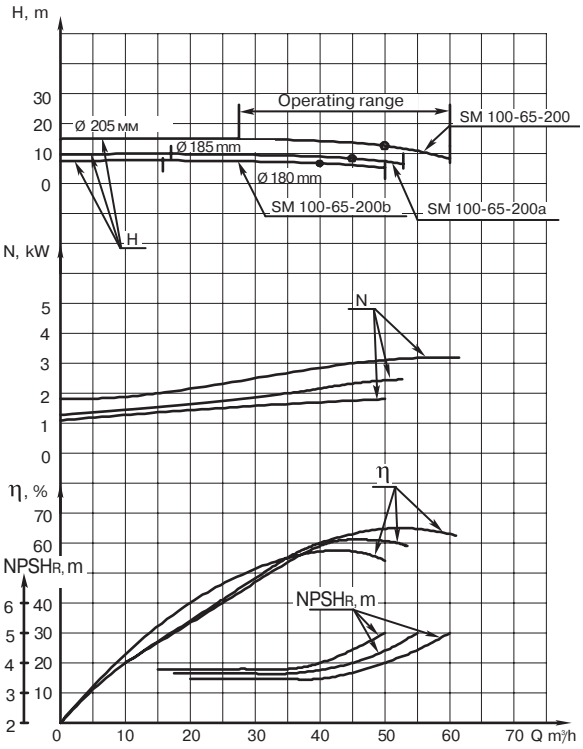

### SM 80–50–200–2

rotation speed 48.4 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



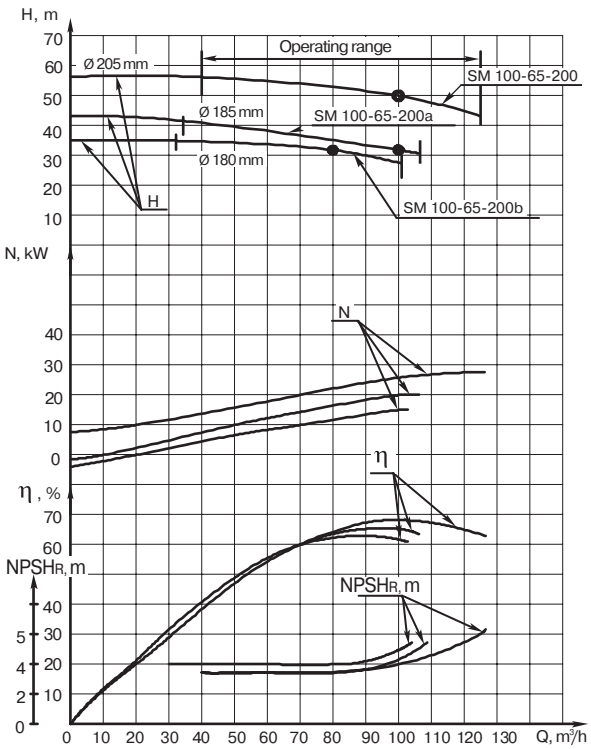

### SM 100–65–200–4

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




### SM 100–65–200–2

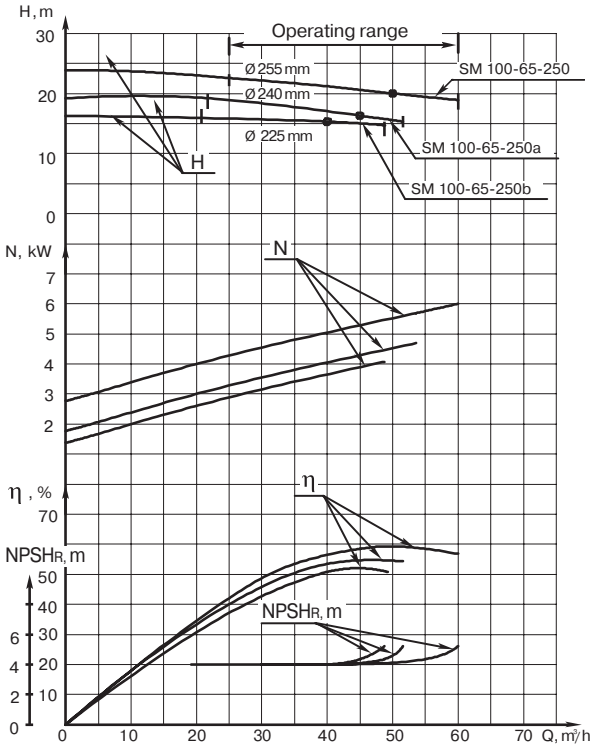
rotation speed 48.4 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



## PERFORMANCE CURVE

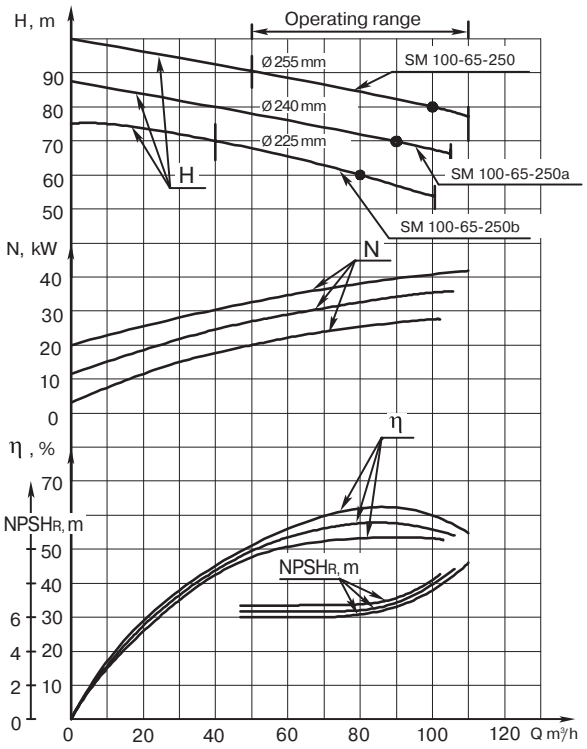
**SM 100–65–250–4**

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



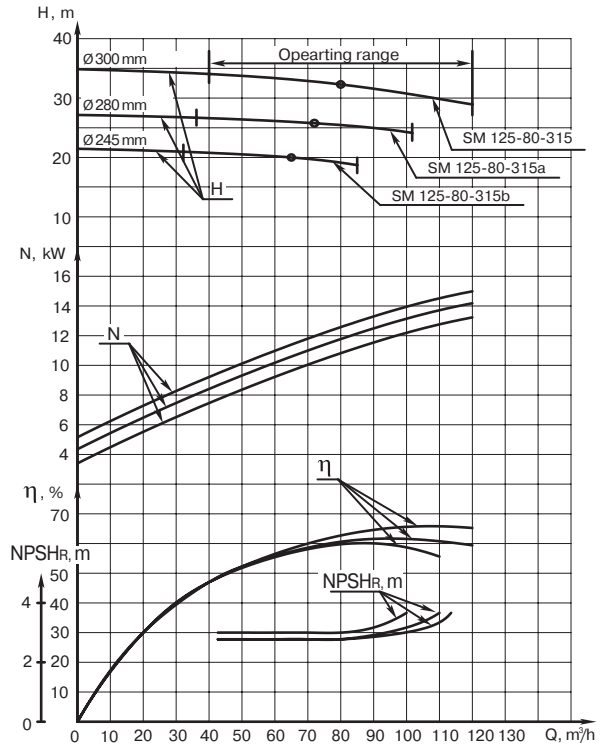

**SM 100–65–250–2**

rotation speed 48.4 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



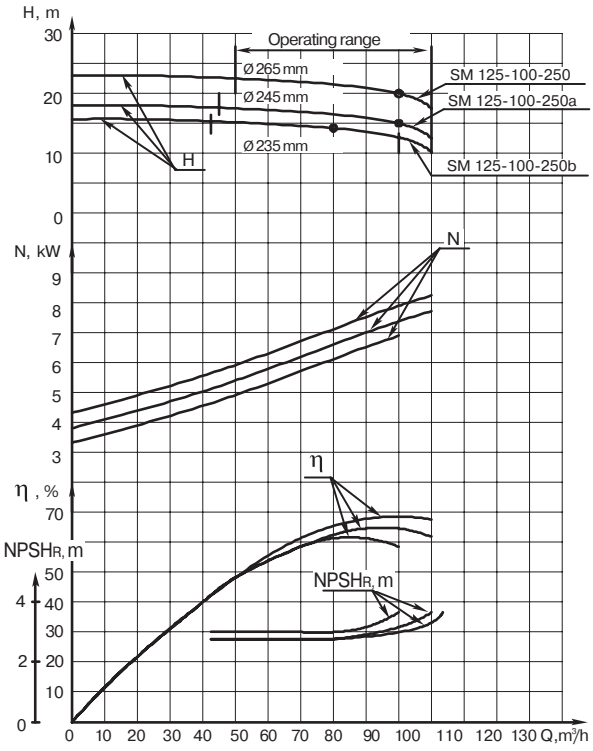

**SM 125–80–315–4**

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$




**SM 125–100–250–4**

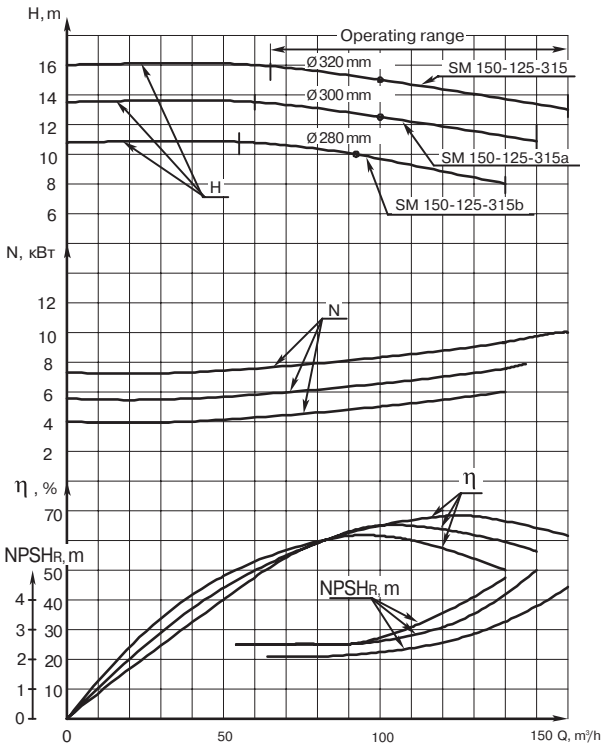
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



## PERFORMANCE CURVE

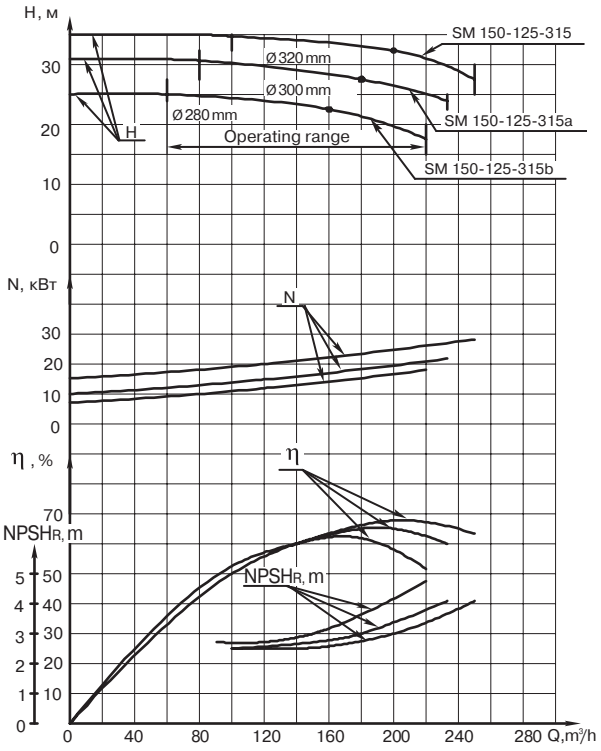
### SM 150–125–315–6

rotation speed 16 $s^{-1}$ (960 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



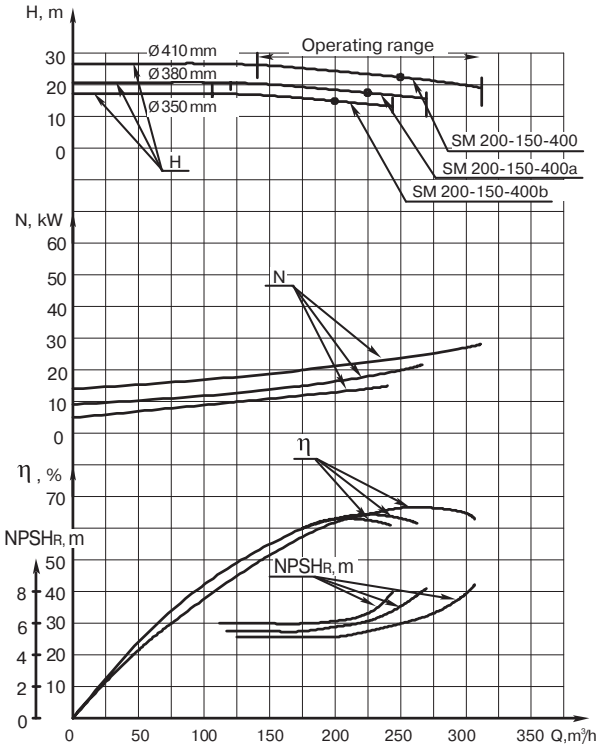

### SM 150–125–315–4

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$



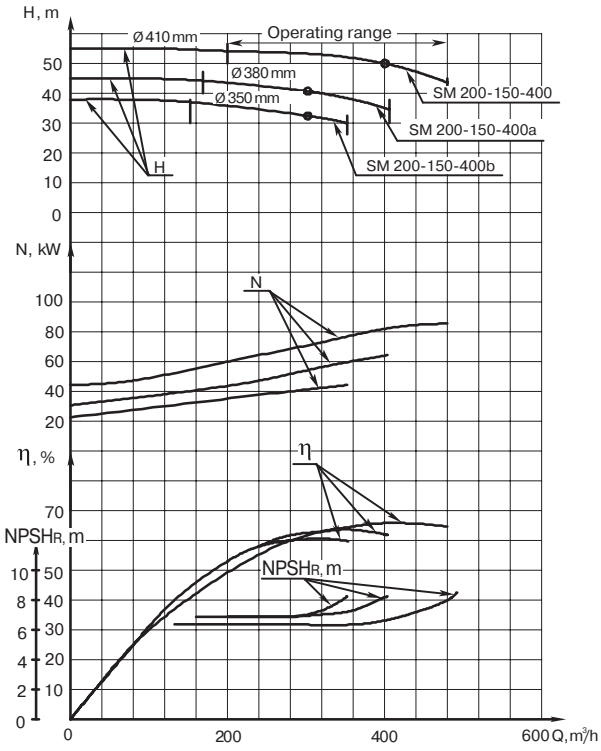

### SM 200–150–400–6

rotation speed 16 $s^{-1}$ (960 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

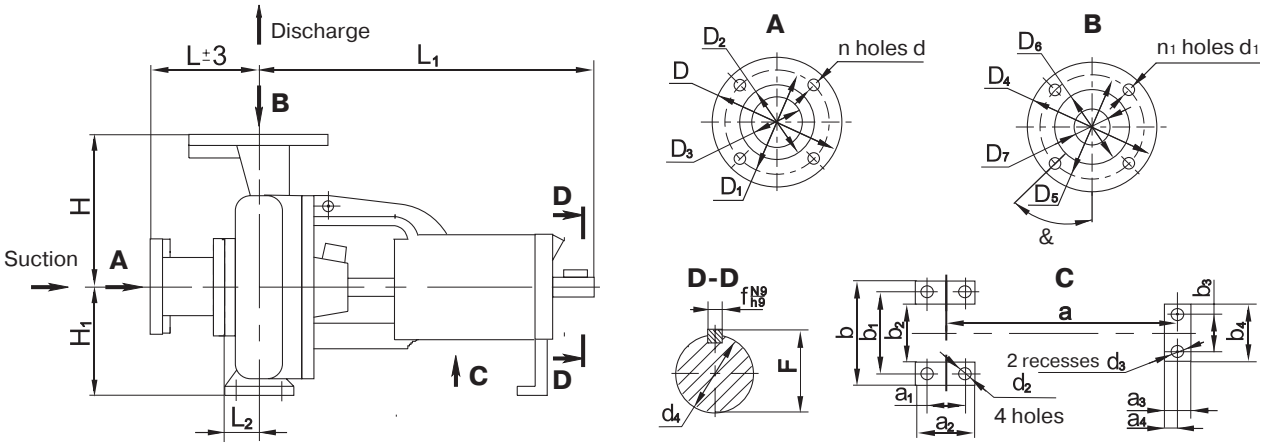



### SM 200–150–400–4

rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/$m^3$

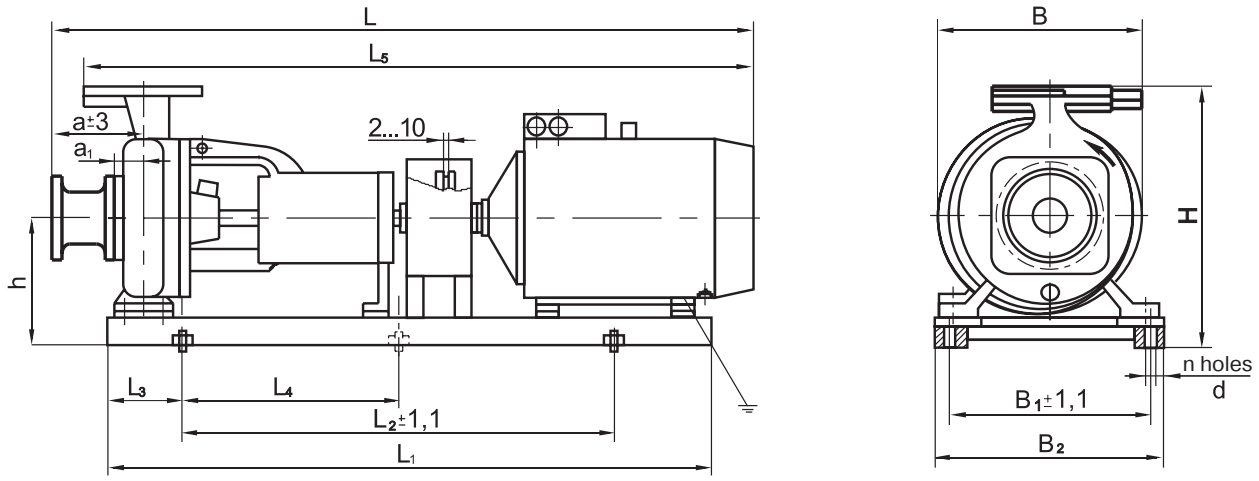


## PUMP OVERALL DIMENSIONS




| Dimensions | | Dimensions values for pump types, mm | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 80-50-200 | 100-65-200 | 100-65-250 | 125-100-250 | 150-125-315 | 200-150-400 | 125-80-315 |
| Suction nozzle rated diameter, $D_3$ | | 80 | 100 | 100 | 125 | 150 | 200 | 125 |
| Discharge nozzle rated diameter, $D_7$ | | 50 | 65 | 65 | 100 | 125 | 150 | 80 |
| Impeller rated diameter | Standard | 195 | 205 | 255 | 265 | 320 | 410 | 300 |
| | a | 185 | 185 | 240 | 245 | 300 | 380 | 280 |
| | b | 165 | 180 | 225 | 235 | 280 | 350 | 270 |
| L | | 167 | 276 | 292 | 200 | 395 | 310 | 320 |
| $L_1$ | | 500 | 500 | 520 | 550 | 560 | 765 | 550 |
| $L_2$ | | 75 | 75 | 90 | 91 | 115 | 160 | 102 |
| H | | 225±1 | 250±1 | 250±0.5 | 280 | 355 | 450 | 315 |
| $H_1$ | | 180±1 | 180±1 | 200±0.5 | 225±0.5 | 280 | 315 | 225 |
| D | | 185 | 205 | 215 | 245 | 280 | 335 | 245 |
| $D_1$ | | 150 | 170 | 180 | 210 | 240 | 295 | 210 |
| $D_2$ | | 128 | 148 | 158 | 184 | 212 | 268 | 184 |
| $D_4$ | | 160 | 180 | 180 | 215 | 245 | 280 | 195 |
| $D_5$ | | 125 | 145 | 145 | 180 | 210 | 240 | 160 |
| $D_6$ | | 102 | 122 | 122 | 158 | 184 | 212 | 133 |
| d | | 18 | 18 | 18 | 18 | 22 | 22 | 18 |
| n | | 4 | 4 | 8 | 8 | 8 | 8 | 8 |
| $d_1$ | | M16-6H | M16-6H | M16-7H | M16-7H | M16-7H | M20-7H | 18 |
| $n_1$ | | 4 | 4 | 4 | 8 | 8 | 8 | 4 |
| a | | 370 | 370 | 370 | 370 | 370 | 500 | 370 |
| $a_1$ | | 95 | 95 | 120 | 120 | 150 | 150 | 120 |
| $a_2$ | | 125 | 125 | 160 | 160 | 200 | 200 | 160 |
| $a_3$ | | 45 | 45 | 70 | 70 | 70 | 80 | 70 |
| $a_4$ | | 16 | 16 | 30 | 30 | 30 | 40 | 30 |
| b | | 320 | 320 | 360 | 400 | 480 | 500 | 400 |
| $b_1$ | | 250 | 250 | 315 | 315 | 400 | 400 | 315 |
| $b_2$ | | 180 | 180 | 200 | 240 | 300 | 300 | 240 |
| $b_3$ | | 110 | 110 | 110 | 110 | 110 | 140 | 110 |
| $b_4$ | | 145 | 145 | 145 | 160 | 160 | 200 | 160 |
| $d_2$ | | 14 | 14 | 18 | 18 | 24 | 24 | 18.5 |
| $d_3$ | | 14 | 14 | 14 | 14 | 18 | 18.5 | 14 |
| $d_4$ | | $32h7_{(-0.025)}$ | $32h7_{(-0.025)}$ | $42h7_{(-0.025)}$ | 42js6(±0.008) | $42h7_{(-0.025)}$ | $48h7_{(-0.025)}$ | $42h7_{(-0.025)}$ |
| f | | $10^{-0.036}_{-0.036}$ | $10^{-0.036}_{-0.036}$ | $12^{-0.043}_{-0.043}$ | $10^{-0.036}_{-0.036}$ | $10^{-0.036}_{-0.036}$ | $14^{-0.043}_{-0.043}$ | $10^{-0.036}_{-0.036}$ |
| F | | 35 | 35 | 45 | 45 | 45 | 54 | 45 |
| & | | 45° | 45° | 45° | 22° 30' | 22° 30' | 22° 30' | 45° |
| Weight with reducing sleeve, kg | | 75 | 74 | 120.5 | 115 | 210 | 320 | 138 |
| Weight w/o reducing sleeve, kg | | 62 | 60 | 105 | 100 | 175 | 290 | 111 |

## UNIT OVERALL DIMENSIONS




| Unit | Electric motor type | Power, kW | Rotation speed $s^{-1}$ (rpm) | Dimensions, mm | | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | a ($a_1$) | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $L_5$ | B | $B_1$ | $B_2$ | H | h | n | d | |
| SM 80-50-200-2 | 5A160S2 | 15 | 48.4 (2900) | 167 (75) | 1350 | 1085 | 840 | 100 | 420 | 1258 | 350 | 240 | 282 | 550 | 310 | 6 | 19 | 260 |
| SM 80-50-200a-2 | AIRM132M2 | 11 | | | 1170 | 975 | | | | 1083 | | | | 535 | | | | 210 |
| SM 80-50-200b-2 | AIRM132M2 | 11 | | | | | | | | | | | | | | | | 210 |
| SM 80-50-200-4 | AIR100L4 | 4 | 24.2 (1450) | | 1060 | 875 | 620 | 150 | - | 978 | 316 | | | | | 4 | | 155 |
| SM 80-50-200a-4<br>SM 80-50-200b-4 | A100S4 | 3 | | | 1050 | | | | | 948 | | | | | | | | 145 |
| SM 100-65-200-2 | 5A200M2 | 37 | 48.4 (2900) | 276 (75) | 1520 | 1200 | 960 | 140 | 480 | 1334 | 360 | 300 | 344 | 640 | 355 | 6 | | 387 |
| SM 100-65-200a-2 | AIR180S2 | 22 | | | 1420 | 1085 | 840 | 100 | 420 | 1229 | | 240 | 282 | 580 | 320 | | | 295 |
| SM 100-65-200b-2 | 5A160M2 | 18.5 | | | 1485 | | | | | 1304 | | | | 565 | 310 | | | 270 |
| SM 100-65-200-4 | 5AM112M4 | 5.5 | 24.2 (1450) | | 1265 | 925 | 620 | 150 | - | 1079 | | | | | | 4 | | 180 |
| SM 100-65-200a-4 | A100S4 | 3 | | | 1160 | 875 | | | | 959 | | | | | | | | 146 |
| SM 100-65-200b-4 | A100S4 | 3 | | | | | | | | | | | | | | | | 146 |
| SM 100-65-250-2 | 5A200L2 | 45 | 48.4 (2900) | 292 (90) | 1600 | 1200 | 960 | 140 | 480 | 1398 | 410 | 300 | 344 | 640 | 355 | 6 | | 450 |
| SM 100-65-250a-2 | 5A200M2 | 37 | | | 1555 | | | | | 1358 | | | | | | | | 430 |
| SM 100-65-250b-2 | AIR180M2 | 30 | | | 1500 | 1150 | | | | 1298 | | | | 615 | | | | 375 |
| SM 100-65-250-4 | AIRM132S4 | 7.5 | 24.2 (1450) | | 1280 | 1000 | 700 | 200 | - | 1078 | | 315 | 347 | 585 | 335 | 4 | | 250 |
| SM 100-65-250a-4 | 5AM112M4 | 5.5 | | | 1300 | 950 | | | | 1098 | | | | | | | | 235 |
| SM 100-65-250b-4 | A100L4 | 4 | | | 1240 | 950 | 700 | 200 | - | 1008 | 410 | 315 | 347 | 585 | 335 | 4 | | 210 |
| SM 125-100-250-4 | 5A160S4 | 15 | | 200 (91) | 1425 | 1085 | 840 | 150 | 420 | 1333 | 415 | 290 | 342 | 640 | 360 | 6 | | 305 |
| SM 125-100-250a-4 | AIRM132M4 | 11 | | | 1255 | 1035 | | | | 1160 | | | | | | | | 265 |
| SM 125-100-250b-4 | AIRM132S4 | 7.5 | | | 1215 | | | | | 1123 | | | | | | | | 250 |
| SM 125-80-315-4 | 5A160M4 | 18.5 | 24.2 (1450) | 320 (102) | 1575 | 1115 | 630 | 250 | - | 1353 | 420 | 320 | 362 | 680 | | 4 | | 348 |
| SM 125-80-315a-4 | | | | | | | | | | | | | | | | | | |
| SM 125-80-315b-4 | 5A160S4 | 15 | | | 1545 | 1085 | | | | 1323 | | | | | | | | 332 |
| SM 150-125-315-4 | 5A200M4 | 37 | | 395 (115) | 1730 | 1317 | 1000 | 150 | 500 | 1423 | 536 | 400 | 445 | 790 | 435 | 6 | | 548 |
| SM 150-125-315a-4 | AIR180M4 | 30 | | | 1645 | 1197 | 900 | | 450 | 1368 | | | | | | | | 488 |
| SM 150-125-315b-4 | AIR180S4 | 22 | | | 1595 | | | | | 1318 | | | | | | | | 468 |
| SM 150-125-315-6 | 5A160S6 | 11 | 16.3 (960) | | 1635 | 1162 | 850 | | 425 | 1358 | | | | | | | | 423 |
| SM 150-125-315a-6 | 5A160S6 | 11 | | | | | | | | 1358 | | | | | | | | 423 |
| SM 150-125-315b-6 | AIRM132M6 | 7.5 | | | 1465 | 1065 | | | | 1188 | | | | | | | | 375 |
| SM 200-150-400-4 | 5AM280S4 | 110 | 24.2 (1450) | 313 (160) | 2200 | 1735 | 1100 | 300 | 550 | 2027 | 580 | 520 | 580 | 970 | 515 | | | 1230 |
| SM 200-150-400a-4 | 5AM250M4 | 90 | | | 2050 | 1650 | | | | 1877 | | | | | | | | 975 |
| SM 200-150-400b-4 | 5AM250S4 | 75 | | | 2020 | 1600 | | | | 1847 | | | | | | | | 930 |
| SM 200-150-400-6 | 5A200L6 | 30 | 16.3 (960) | | 1900 | 1550 | | 230 | | 1722 | 660 | 400 | 448 | 970 | 475 | | 33 | 705 |
| SM 200-150-400a-6 | 5A200M6 | 22 | | | 1850 | | | | | 1672 | | | | | | | | 690 |
| SM 200-150-400b-6 | AIR180M6 | 18.5 | | | 1770 | 1400 | | 160 | | 1586 | | | | | | | | 605 |

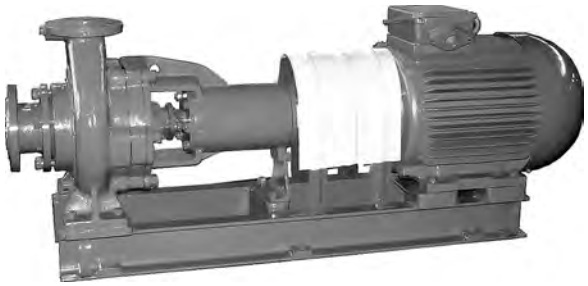
# SMS SERIES
## OVERHUNG END-SUCTION VORTEX PUMPS

### APPLICATION

The overhung end-suction vortex pumps of the SMS series are intended for pumping of residential and industrial waste water and other non-aggressive liquids.

- Hydrogen index (pH): 5.0 - 10.0
- Max density: 1050 kg/m$^3$
- Max temperature: + 90 °C
- Max solids content: 1%
- Max solids size: 5.0 mm
- Max concentration of pumped mass: 8 %
- Max gas content: 5 %

The pumps are not intended for operation in explosion and fire hazardous premises.



### PUMP SERIES DESIGNATION

**SMS 150–125–315**

SMS XXX - XXX - XXX

Pump series
Suction nozzle diameter, mm
Discharge nozzle diameter, mm
Impeller rated diameter, mm

### TECHNICAL DATA

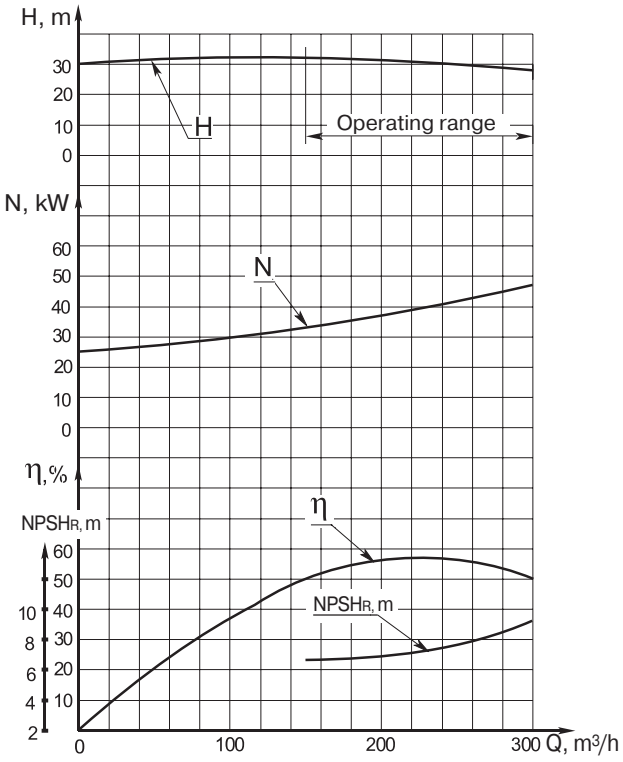
| Pump | Capacity | | Head, m | Rotation speed | | Suction pressure, max | | Power supply | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | m$^3$/sec | m$^3$/h | | s$^{-1}$ | rpm | bar | kgf/cm$^2$ | Current, A | Voltage, V | Frequence, Hz |
| SMS 80-50-200 | 0.025 | 90 | 60 | 48.3 | 2900 | 2.5 | 2.5 | alternating | 220 / 380 | 50 |
| SMS 150-125-315 | 0.058 | 200 | 32 | 24.2 | 1450 | 2.5 | 2.5 | | | |

| Pump | Flow passage, mm | Efficiency, % | NPSH, m | Max leakage through sealing, m$^3$/h (l/h) | Weight, kg | | Max pump power, kW |
|---|---|---|---|---|---|---|---|
| | | | | | pump | unit | |
| SMS 80-50-200 | 50 | 54 | 5 | 3x10$^{-3}$ (3.0) | 75 | 413 | 35 |
| SMS 150-125-315 | 75 | 57 | 7 | 3x10$^{-3}$ (3.0) | 250 | 662.5 | 46 |

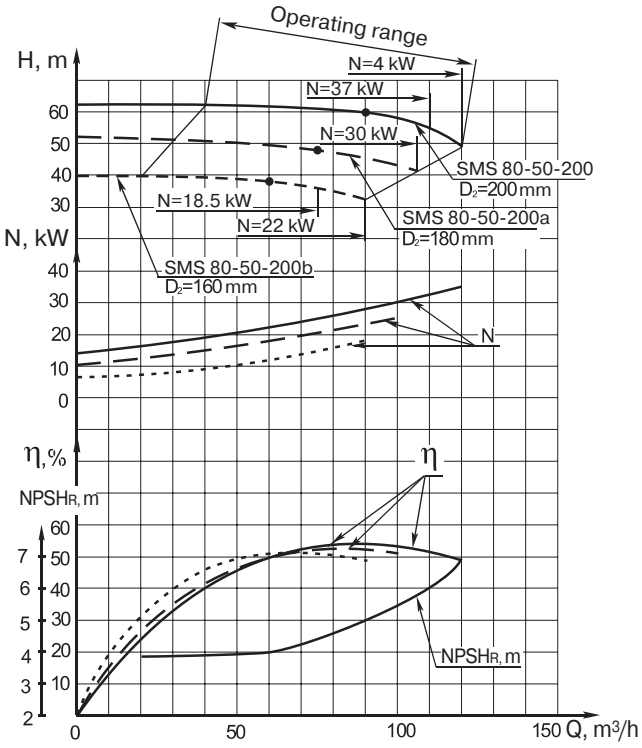
The values of the main parameters are given for pumping of water with the temperature of 293K (20 °C) and density of 1000 kg/m$^2$

## PERFORMANCE CURVE

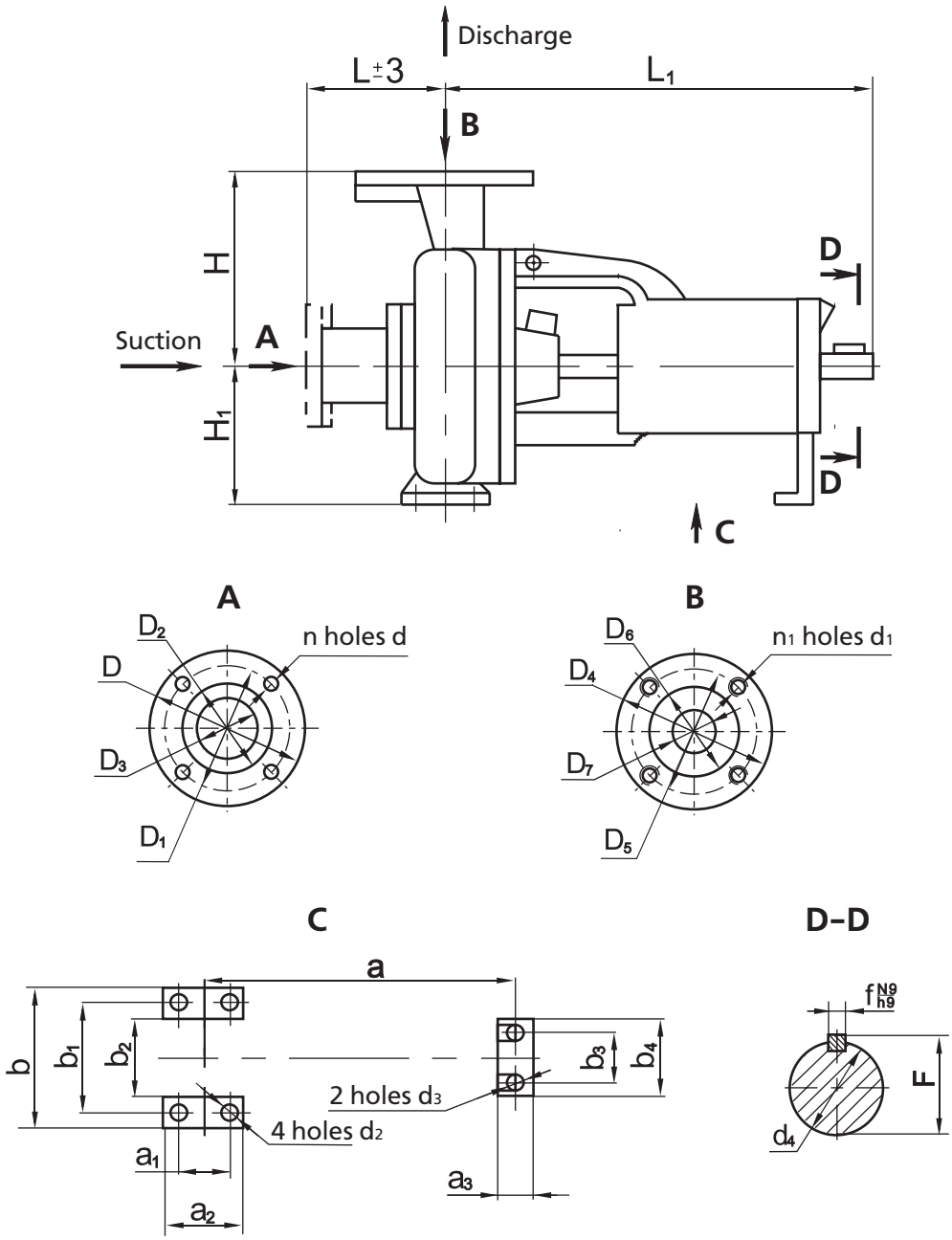
**SMS 150–125–315**
rotation speed 24.2 $s^{-1}$ (1450 rpm)
liquid – water (20 °C), density 1000 kg/m³




**SMS 80–50–315**
rotation speed 48.3 $s^{-1}$ (2900 rpm)
liquid – water (20 °C), density 1000 kg/m³



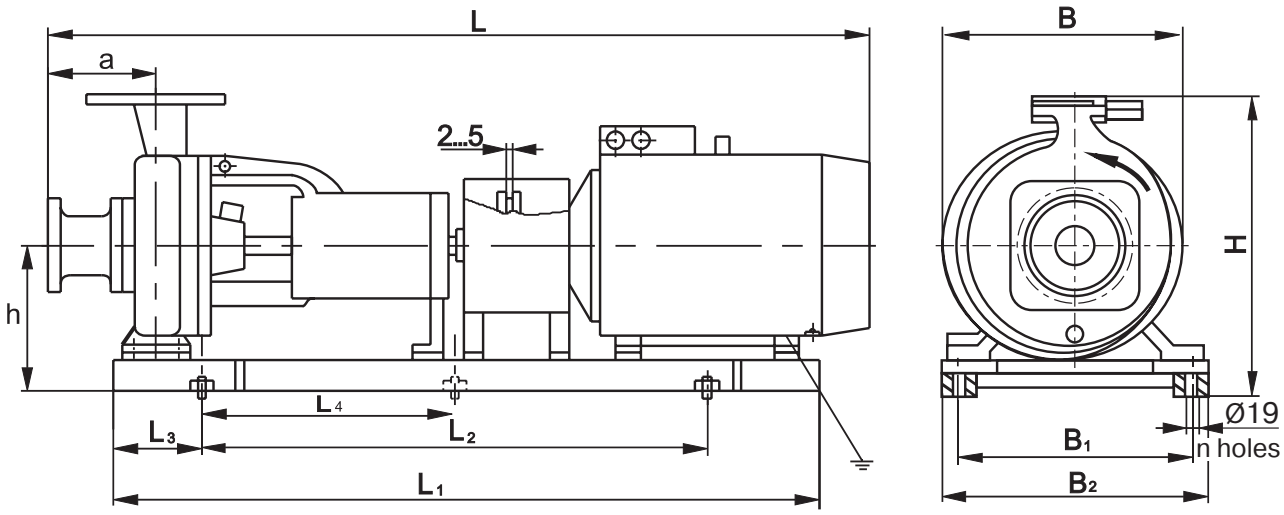
## PUMP OVERALL DIMENSIONS




| Pump | Dimensions, mm | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | $L_1$ | H | $H_1$ | D | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ | d | $d_1$ | $d_2$ | $d_3$ | $d_4$ |
| SMS 80-50-200 | 165 | 532 | 225±1 | 180±1 | 185 | 150 | 128 | 80 | 160 | 125 | 102 | 50 | 18 | M16 | 14 | 14 | 32h7 |
| SMS 150-125-315 | 395 | 645 | 355 | 280 | 280 | 240 | 212 | 150 | 245 | 210 | 184 | 125 | 22 | M16 | 24 | 16 | 42js6 |

| Pump | Dimensions, mm | | | | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | $n_1$ | a | $a_1$ | $a_2$ | $a_3$ | b | $b_1$ | $b_2$ | $b_3$ | $b_4$ | f | F | |
| SMS 80-50-200 | 4 | 4 | 403 | 95 | 125 | 45 | 320 | 250 | 190 | 110 | 145 | 10 | 35 | 75 |
| SMS 150-125-315 | 8 | 8 | 440 | 150 | 200 | 70 | 480 | 400 | 310 | 110 | 160 | 10 | 45 | 250 |

## UNIT OVERALL DIMENSIONS




| Unit | Electic motor type | Dimensions, mm | | | | | | | | | | | Weight, kg | n |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | $L_1$ | $L_2$ | $L_3$ | $L_4$ | H | B | $B_1$ | $B_2$ | a | h | | |
| SMS 80-50-200 | 5A200L2 (45 kW) | 1485 | 1225 | 900±2 | 100 | 450±2 | 630 | 240±2 | 240±2 | 282 | 165 | 325 | 413 | 6 |
| | 5A200M2 (37 kW) | 1440 | | | | | 630 | | | | | | 393 | |
| SMS 80-50-200a | AIR180M2 (30 kW) | 1385 | | | | | 585 | | | | | | 338 | |
| SMS 80-50-200b | AIR180S2 (22 kW) | 1335 | | | | | 585 | | | | | | 318 | |
| | 5A160M2 (18.5 kW) | 1405 | | | | | 567 | | | | | | 296 | |
| SMS 150-125-315 | 5A225M4 (55 kW) | 1910 | 1425 | 800 | 250 | - | 795 | 455 | 400 | 455 | 395 | 440 | 662.5 | 4 |

# CMF SERIES
## CENTRIFUGAL SUBMERSIBLE DRAINAGE PUMPS

### APPLICATION

The centrifugal close-coupled submersible drainage pumps of the CMF series are intended for disposal of residential and industrial waste waters with high solids content (up to 8 mm for non-abrasives).

- Drainage systems in subways
- Waste water pumping stations
- Drainage facilities
- Irrigation for agriculture
- Lowering of ground water level

The CMF pumps have been designed for operation in severe conditions taking into account high reliability, simple installation & service (1 hour for complete disassembly and assembly) with minimum set of simple tools.

The pump shaft bears two mechanical sealings in a single casing for their quick and simple replacement in case of leakage. An integrated protection prevents «dry running», pump overheating and moisture penetration.

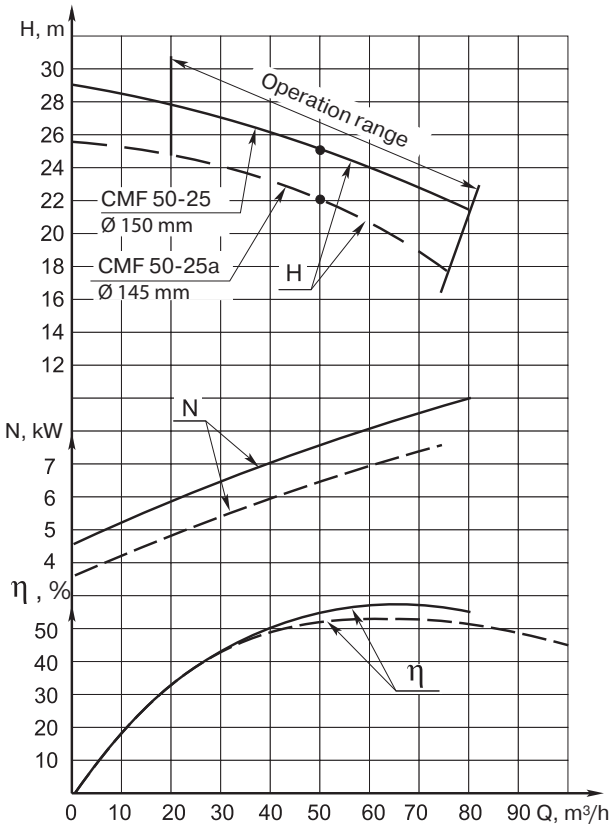
**TECHNICAL DATA**

| | CMF 50-25 | CMF 50-25a | CMF 160-80 | CMF 160-80a | CMF 160-80b |
|---|---|---|---|---|---|
| Capacity, $m^3/h$ (l/sec) | 50 (13.89) | | 160 (44.45) | 145 (40.28) | 130 (36.11) |
| Head, m | 25 | 22 | 80 | 70 | 60 |
| Shaft power, kW | 8.6 | | 77.1 | | |
| Rotation speed, $s^{-1}$ (rpm) | 48.3 (2900) | | | | |
| Allowable depth of submersion, m | 7 | | | | |
| Power supply | ~ 380 V; 50 Hz | | | | |
| Efficiency, % | 54 | | 55 | | |
| Hydraulic efficiency,% | 70 | | | | |
| Max current, A | 14.6 | | 145 | | |
| Max weight, kg | 90 | | 345 | | |
| Overall dimensions, mm | 660x360x290 | | 1000x780x390 | | |

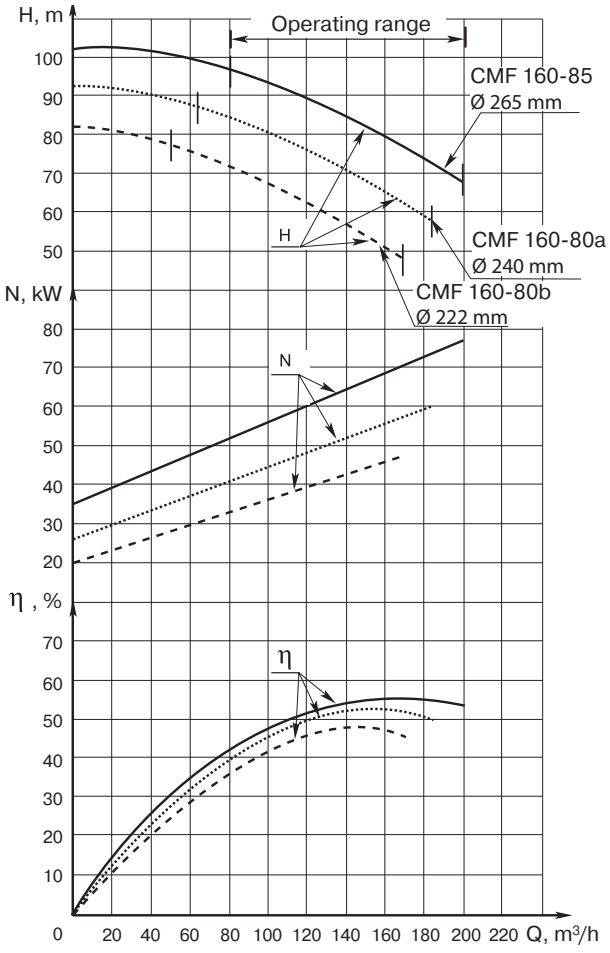
| TECHNICAL DATA | | |
|---|---|---|
| | **CMF 50–25** | **CMF 160–80** |
| Max liquid density, кg/m³ | 1250 | |
| Liquid hydrogen index, pH | 5 -12 | |
| Max solids content (by weight), % | 10 | |
| Max solids size, mm | 8 | 8 |
| Max content of abrasives (by volume), % | 1 | |
| Max abrasives size, mm | 5 | 5 |
| Max liquid temperature, K (°C) | 308 (35) | |

## PERFORMANCE CURVE

**CMF 50–25**
liquid – water (20 °C), density 1000 kg/m³

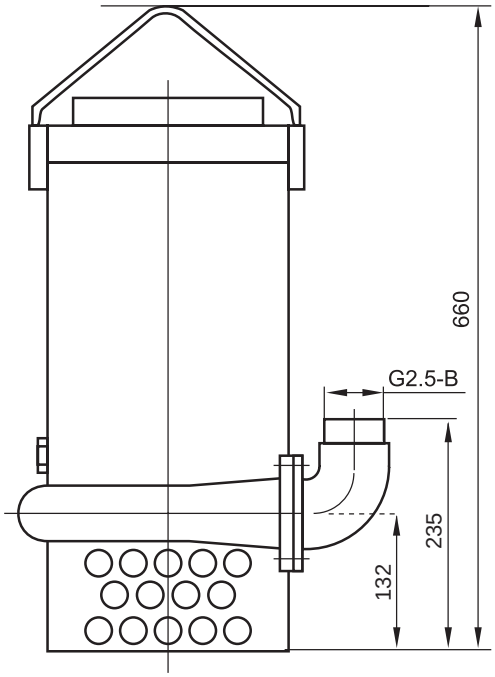


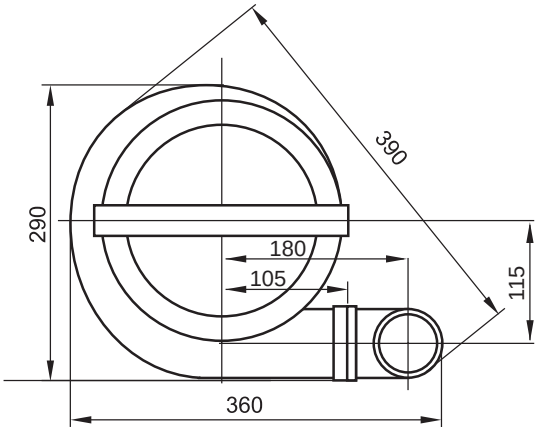

**CMF 160–80**
liquid – water (20 °C), density 1000 kg/m³



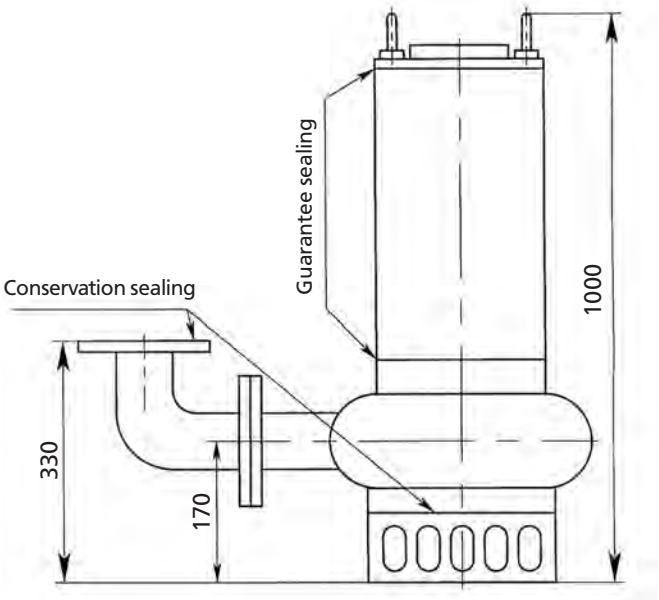
## OVERALL DIMENSIONS

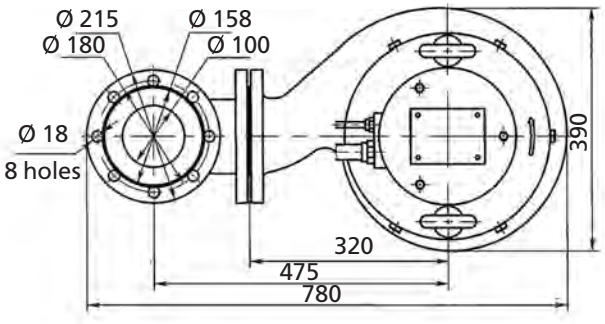
**CMF 50–25**




**CMF 160–80**



# GNOM SERIES
## CENTRIFUGAL SUBMERSIBLE DRAINAGE PUMPS

### APPLICATION

The centrifugal close-coupled submersible drainage pumps of the GNOM series are intended for pumping of contaminated, gravel-clay ground waters, flood waters from basements, ditches, trenches, wells, drainage pits, in industrial and civil construction, at hydraulic facilities, subway, in agriculture for irrigation.

- Max temperature: +35 / +60 °C)
- Max liquid density: 1100 kg/m$^3$
- Max solids content by weight): 10%
- Max solids size: 5 mm

### ADVANTAGES

- High reliability, efficiency and durability
- High quality materials
- Simple installation and maintenance
- Stable parameters within entire operation range
- Wear-resistant impeller of open type

### DESIGN

The pump is fabricated as a single unit with a close-coupled leak-proof asynchronous electric motor, which is separated from the pumping part by a system of seals with oil chamber.

### OPERATION

The pump shall be completely immersed in a vertical position into the pumped liquid to ensure effective cooling of electric motor. The pump may be installed with rigid or flexible discharge piping.

### PUMP SERIES DESIGNATION

**GNOM 10–10 Tr, 380 V**

GNOM XX XX Tr 380V

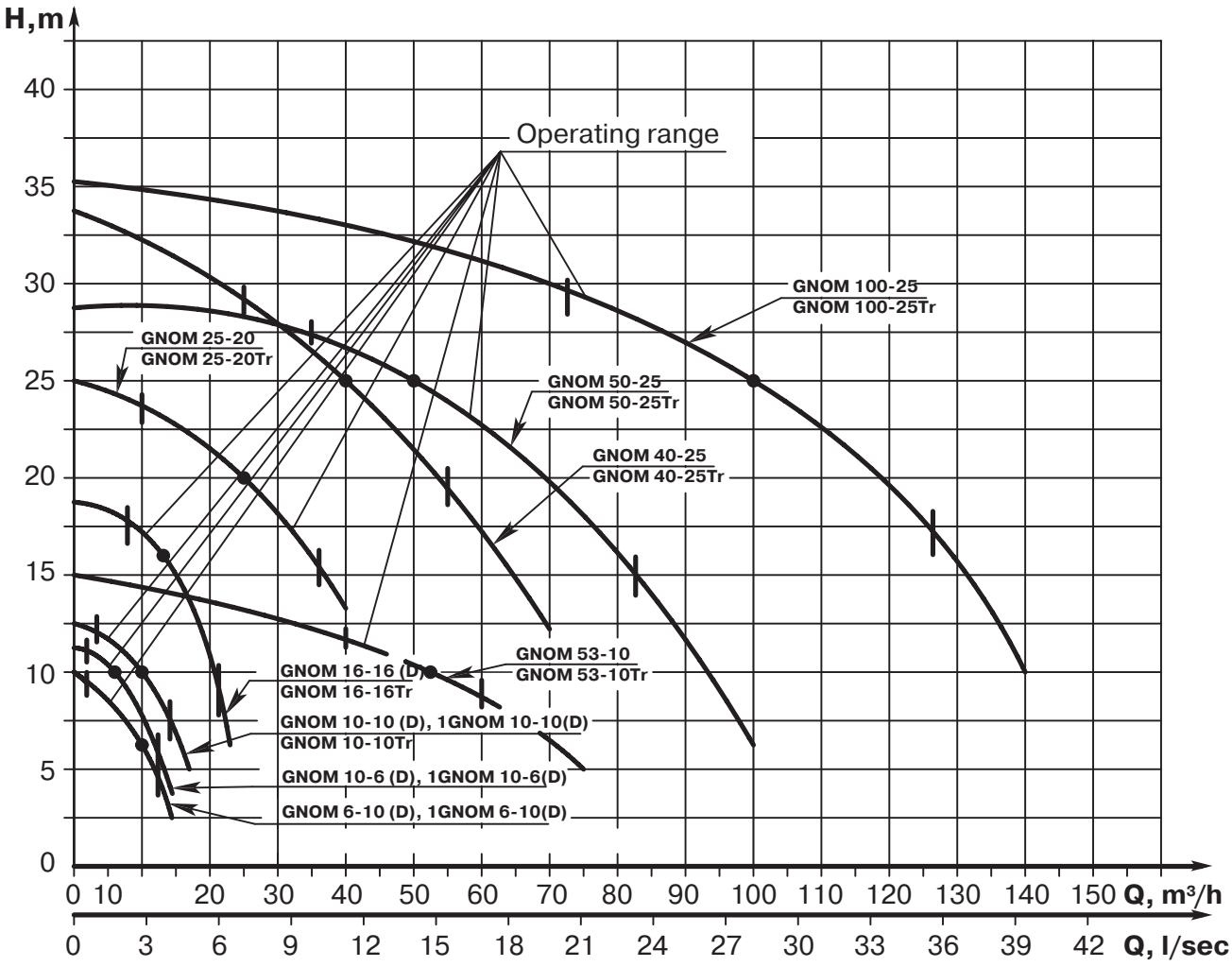
- Pump series
- Rated capacity, m$^3$/h
- Rated head, m
- No mark - standard version (35 °C water) **Tr** – 60 °C water
- Rated voltage

**GNOM 10–10 D, 220 V**

GNOM XX XX D 220V

- Pump series
- Rated capacity, m$^3$/h
- Rated head, m
- No mark - standard version (w/o floating switch). **D** – with floating switch
- Rated voltage

## PERFORMANCE RANGE



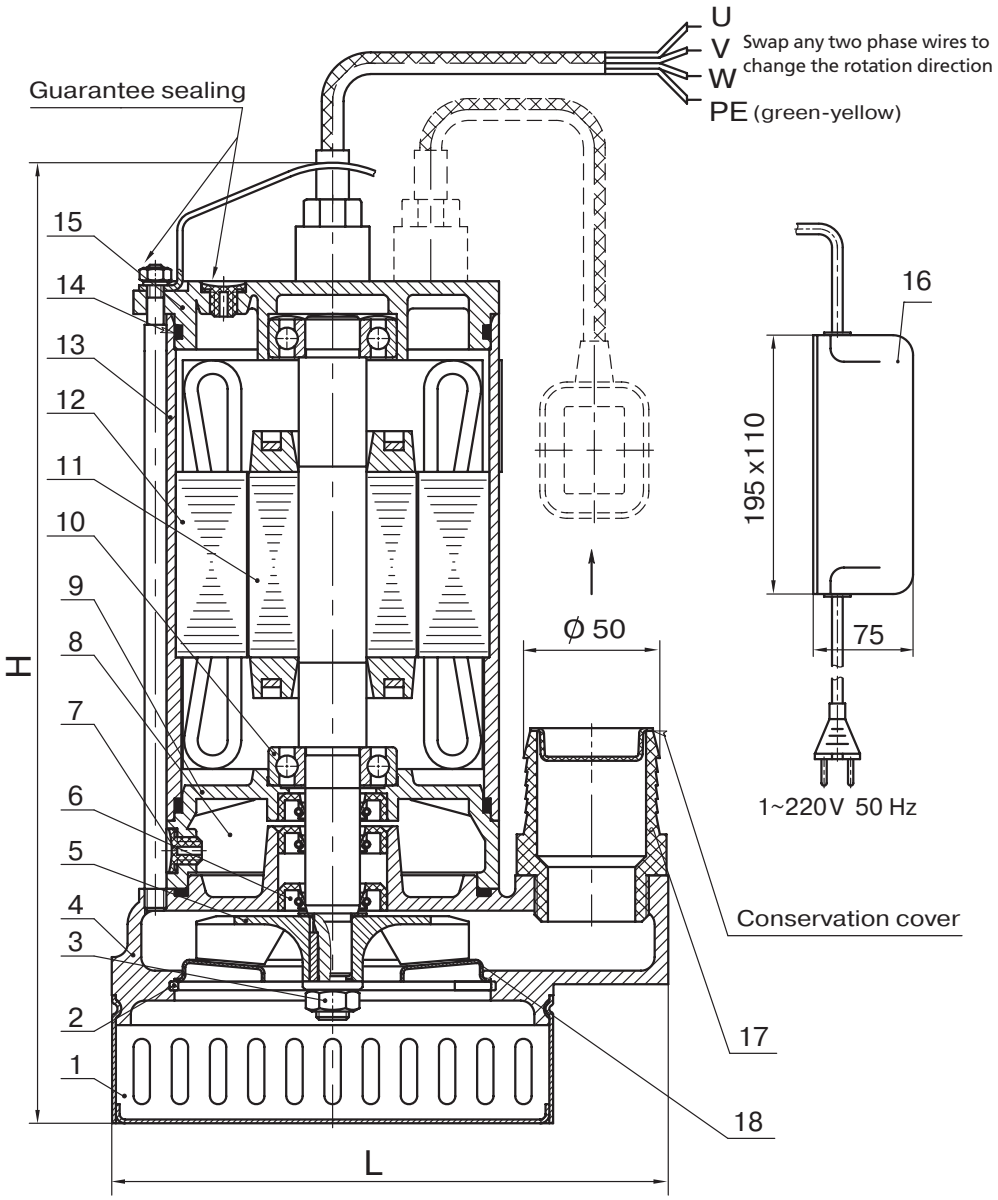
## TECHNICAL DATA

| Pump | Max rated capacity, $m^3/h$ | Max rated head, m | Power, kW | Voltage, V | Current, A | Discharge nozzle diameter, mm | Overall dimensions, mm | Weight*, kg |
|---|---|---|---|---|---|---|---|---|
| GNOM 10-6<br>GNOM 10-6 D | 10-14 | 6-10 | 0.6 | 220 | 3 | 50 | 200x360 | 15 |
| GNOM 6-10<br>GNOM 6-10 D | 6-14 | 10-12 | 0.6 | 220 | 3 | 50 | 200x360 | 15 |
| GNOM 10-10<br>GNOM 10-10 D | 10-18 | 10-13 | 1.1 | 220 | 8 | 50 | 200x380 | 16 |
| GNOM 10-10 | 10-18 | 10-13 | 0.75 | 380 | 2 | 50 | 200x360 | 15 |
| GNOM 10-10 Tr | 10-18 | 10-13 | 1.1 | 380 | 2 | 50 | 200x360 | 16 |
| GNOM 16-16 | 16-24 | 16-20 | 2.2 | 220 | 11 | 50 | 235x450 | 28 |
| GNOM 16-16 | 16-24 | 16-20 | 2.2 | 380 | 3.5 | 50 | 235x410 | 24 |
| GNOM 16-16 Tr | 16-24 | 16-20 | 2.2 | 380 | 3.5 | 50 | 235x410 | 24 |
| GNOM 25-20 | 25-45 | 20-25 | 3 | 380 | 6.1 | 80 | 300x485 | 31.8 |
| GNOM 25-20 Tr | 25-45 | 20-25 | 3 | 380 | 6.1 | 80 | 300x485 | 31.8 |
| GNOM 40-25 | 40-68 | 25-34 | 5.5 | 380 | 11 | 78 | 300x600 | 59 |
| GNOM 40-25 Tr | 40-68 | 25-34 | 5.5 | 380 | 11 | 78 | 300x600 | 59 |
| GNOM 53-10 | 53-80 | 10-15 | 4 | 380 | 8.5 | 100 | 370x600 | 63 |
| GNOM 53-10 Tr | 53-80 | 10-15 | 4 | 380 | 8.5 | 100 | 370x600 | 63 |
| GNOM 50-25 | 50-85 | 25-27 | 7.5 | 380 | 16 | 100 | 430x665 | 72 |
| GNOM 50-25 Tr | 50-85 | 25-27 | 7.5 | 380 | 16 | 100 | 430x665 | 76 |
| GNOM 100-25 | 100-125 | 25-28 | 11 | 380 | 21 | 100 | 490x730 | 112 |
| GNOM 100-25 Tr | 100-125 | 25-28 | 11 | 380 | 21 | 100 | 490x730 | 120 |

* The weight is given without power cable. The power cable standard length is 10 meters

## OVERALL DIMENSIONS AND CROSS-SECTION

**GNOM 10-6, GNOM 10-6 D, GNOM 6-10, GNOM 6-10 D, GNOM 10-10, GNOM 10-10 D, GNOM 16-16, GNOM 16-16 D, GNOM 10-10 Tr, GNOM 16-16 Tr**

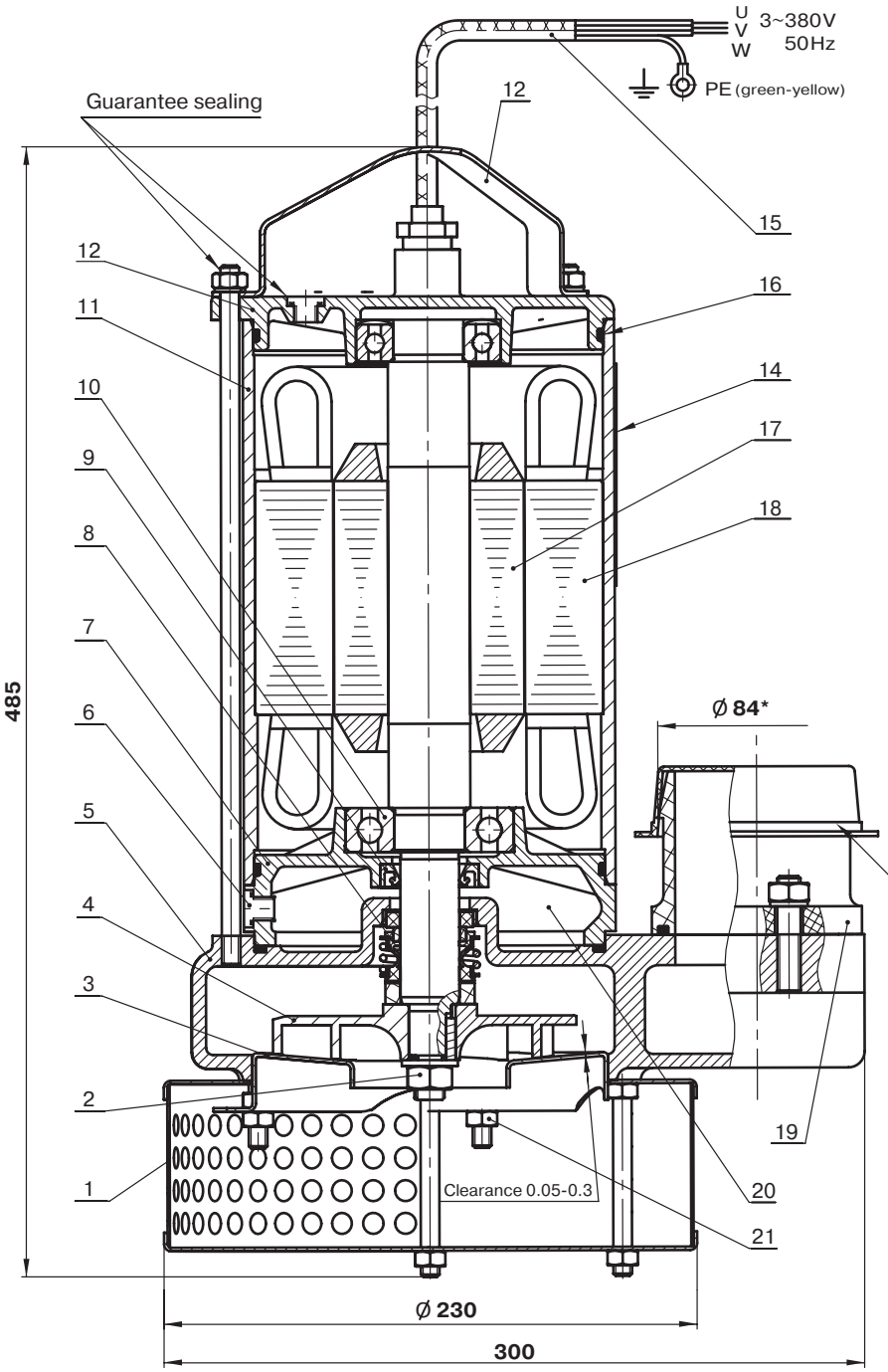



1 - Filter
2 - Lock ring
3 - Nut
4 - Pump Case
5 - Impeller
6 - Collar
7 - Plug
8 - Oil chamber
9 - End shield
10 - Bearing
11 - Rotor
12 - Stator
13 - Pipe
14 - O-ring
15 - Cover
16 - Starting device
17 - Fitting
18 - Diaphragm

| Pump | Power supply | H, mm | L, mm |
|---|---|---|---|
| GNOM 10-6, GNOM 10-6 D | 1~220 V | 360 | 210 |
| GNOM 6-10, GNOM 6-10 D | | 360 | 210 |
| GNOM 10-10, GNOM 10-10 D | | 380 | 210 |
| GNOM 16-16, GNOM 16-16 D | | 450 | 245 |
| GNOM 10-10 | 3~380 V | 360 | 210 |
| GNOM 10-10 Tr | | 380 | 210 |
| GNOM 16-16 | | 420 | 245 |
| GNOM 16-16 Tr | | 420 | 245 |

## OVERALL DIMENSIONS AND CROSS-SECTION

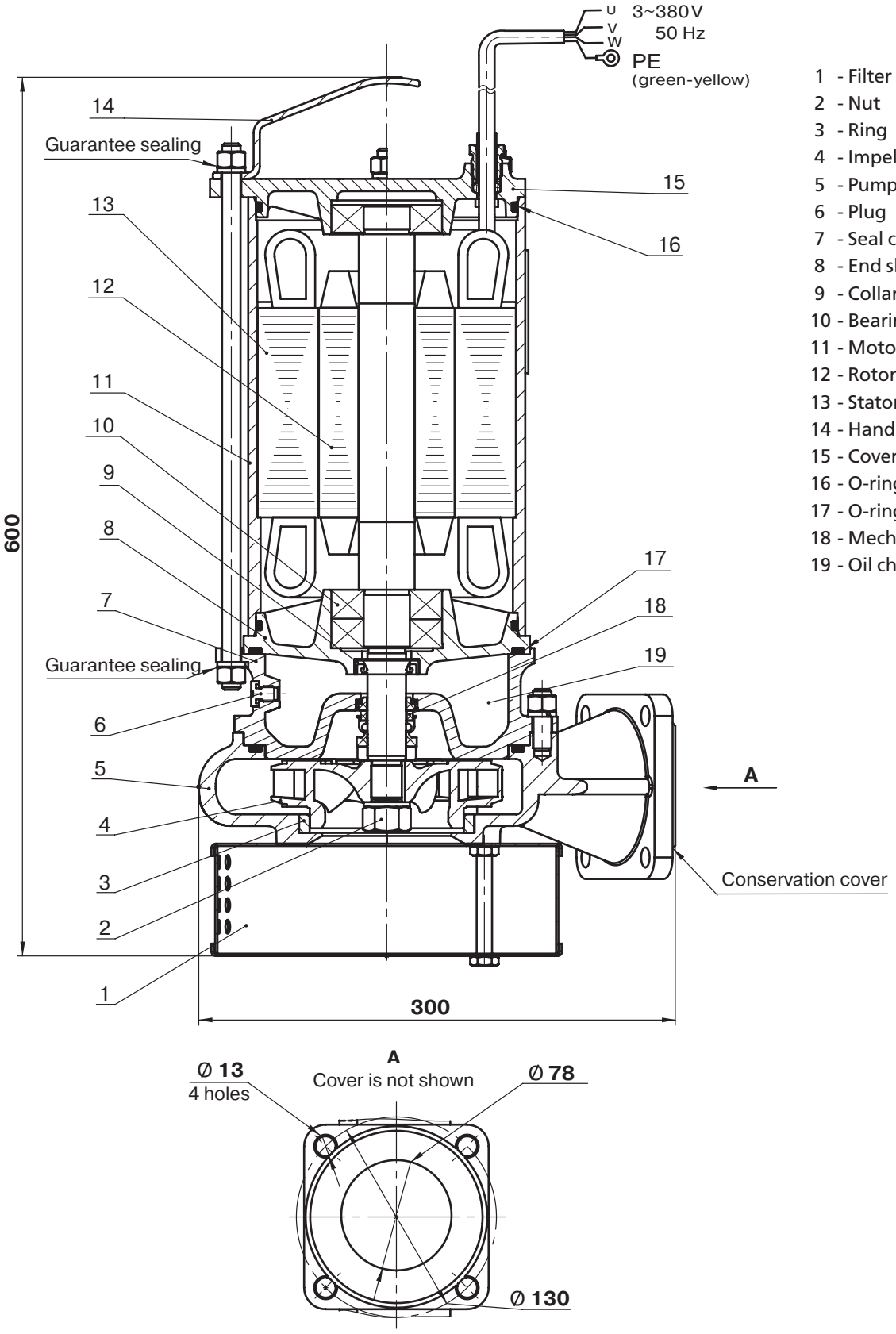
**GNOM 25-20, GNOM 25-20 Tr**




1 - Filter
2 - Nut
3 - Diaphragm
4 - Impeller
5 - Pump case
6 - Plug
7 - End shield
8 - Mechanical seal
9 - Collar
10 - Bearing
11 - Pipe
12 - Cover
13 - Handle
14 - Plate
15 - Power cord
16 - Ribber ring
17 - Rotor
18 - Stator
19 - Fitting
20 - Oil chambel
21 - Nut

## OVERALL DIMENSIONS AND CROSS-SECTION

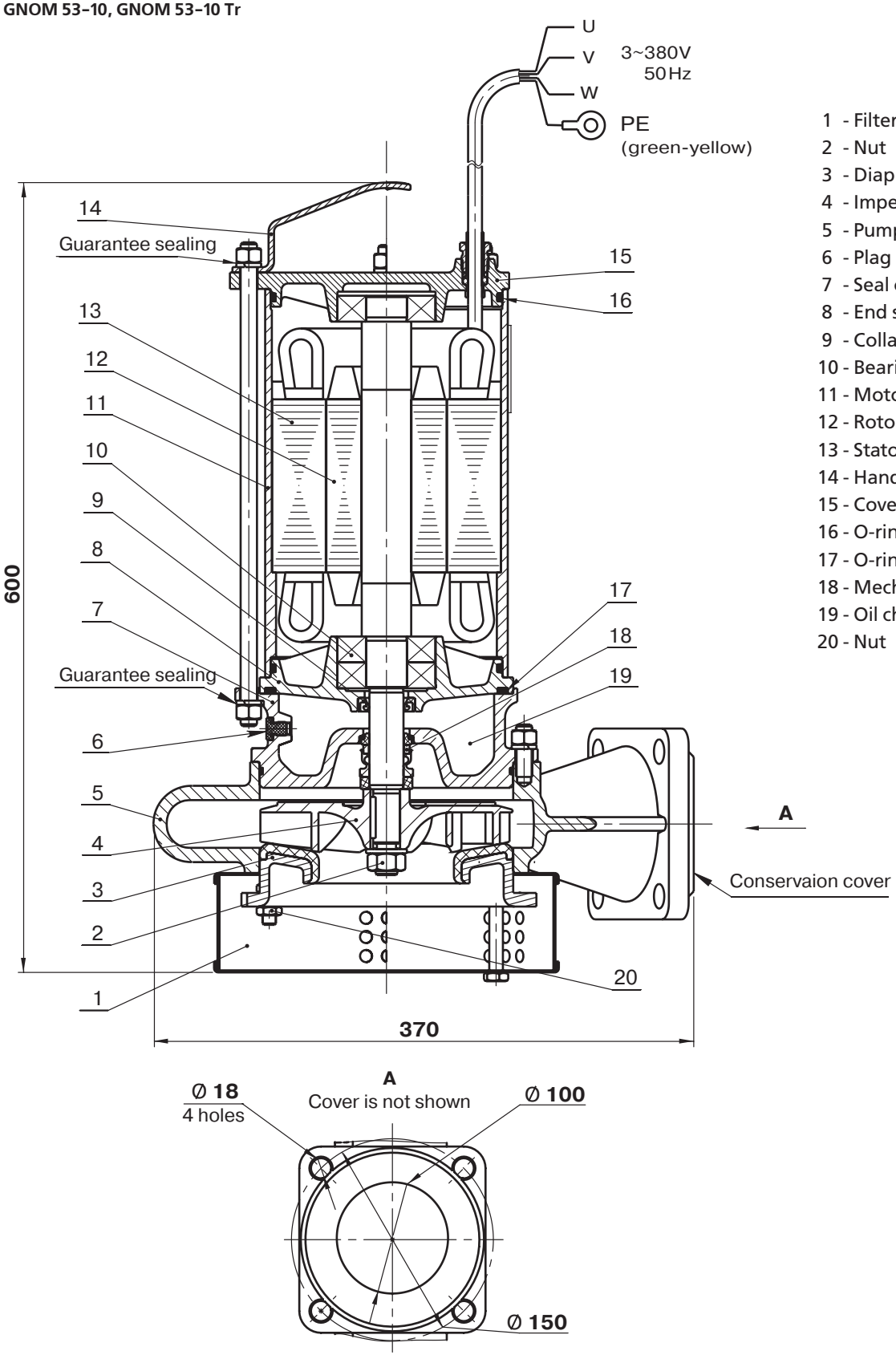
**GNOM 40-25, GNOM 40-25 Tr**




1 - Filter
2 - Nut
3 - Ring
4 - Impeller
5 - Pump case
6 - Plug
7 - Seal case
8 - End shield
9 - Collar
10 - Bearing
11 - Motor Case
12 - Rotor
13 - Stator
14 - Handle
15 - Cover
16 - O-ring
17 - O-ring
18 - Mechanical seal
19 - Oil chamber

## OVERALL DIMENSIONS AND CROSS-SECTION

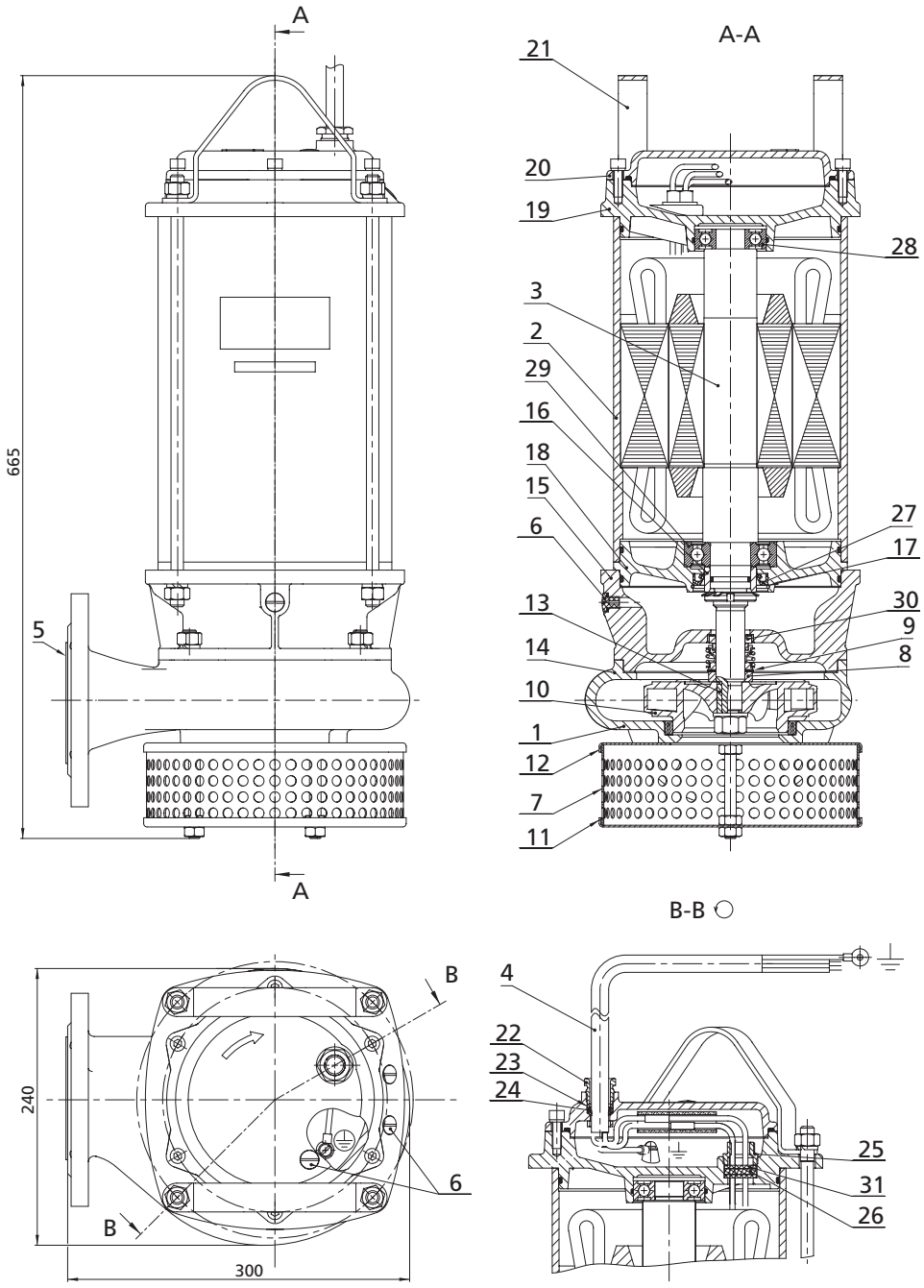
**GNOM 53-10, GNOM 53-10 Tr**




1 - Filter
2 - Nut
3 - Diaphragm
4 - Impeller
5 - Pump case
6 - Plag
7 - Seal case
8 - End shield
9 - Collar
10 - Bearing
11 - Motor case
12 - Rotor
13 - Stator
14 - Handle
15 - Cover
16 - O-ring
17 - O-ring
18 - Mechanical seal
19 - Oil chamber
20 - Nut

## OVERALL DIMENSIONS AND CROSS-SECTION

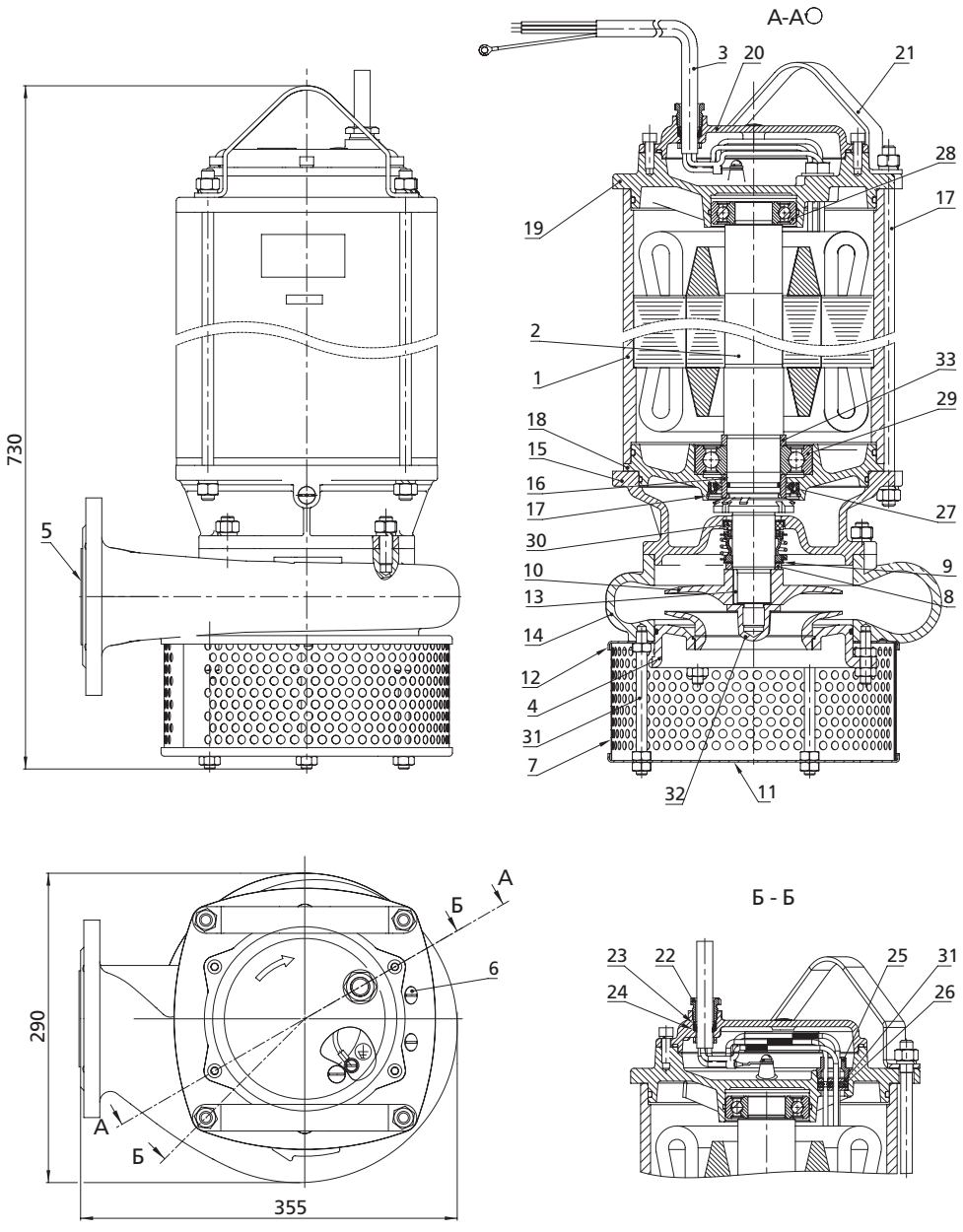
**GNOM 50–25, GNOM 50–25 Tr**




1 - O-ring
2 - Stator
3 - Rotor
4 - Power cord
5 - Cover
6 - Plug
7 - Filter
8 - O-ring
9 - Gasket
10 - Impeller
11 - Strainer bottom
12 - Strainer cover
13 - Key
14 - Pump case
15 - Sealing casing
16 - Protective bushing
17 - Lock ring
18 - Bearing shield
19 - Bearing upper shield
20 - Cover
21 - Handle
22 - Nut
23 - Pressure washer
24 - Gasket
25 - Output nut
26 - Output gasket
27 - Collar
28 - Bearing
29 - Bearing
30 - Mechanical seal
31 - Output disk

## OVERALL DIMENSIONS AND CROSS-SECTION

**GNOM 100–25, GNOM 100–25 Tr**




1 - Stator
2 - Rotor
3 - Power cord
4 - Diaphragm
5 - Cover
6 - Plug
7 - Filter
8 - O-ring
9 - Gasket
10 - Impeller
11 - Strainer bottom
12 - Strainer cover
13 - Key
14 - Pump case
15 - Sealing casing
16 - Protective bushing
17 - Lock ring
18 - Bearing shield
19 - Bearing upper shield
20 - Cover
21 - Handle
22 - Nut
23 - Pressure washer
24 - Gasket
25 - Output nut
26 - Output gasket
27 - Collar
28 - Bearing
29 - Bearing
30 - Mechanical seal
31 - Output disk
32 - Nut
33 - Trust bushing

# N1V SERIES
## SINGLE-SCREW PUMPS

### APPLICATION

The single-screw pumps of the N1V series are intended for pumping of clean and contaminated liquids, chemically active liquids in processes at chemical plants, oil-contained water (as marine pumps on sea and river vessels), mine water disposal, and for general industry applications.

- Max temperature: 53K (80 °C)
- Max kinematic viscosity: 4600 cSt
- Max solids content: 5 %
- Max solids size: 2.0 mm

Depending on the pumped media the N1V type pumps can be made of:

a) Standard carbon steel
(A284Gr.D, Fe37-3FN or 1020, 1.1151)

b) Corrosion resistant steel
(AISI 321 or X10CrNiTi18-9)

c) Austenitic steel
(AISI 316Ti or X10CrNiMoTi18-12)

Available shaft sealing:

a) Gland seal (default); a barrier liquid supply may be required if underpressure in the pump casing is necessary

b) Single mechanical seal

c) Double mechanical seal (a barrier liquid supply is required with pressure by 0.5 bar higher than the operation pressure in the pump).

### Advantages

- Simple design
- Pumping of liquid without pulsation
- A wide capacity range
- Good suction ability

### PUMP SERIES DESIGNATION

N1V 80/5-6.3/5 E - Rp 1

- Pump series
- Pump capacity, liters per 100 rotations of screw
- Pressure, bar
- Pump capacity in the unit, $m^3/h$
- Pump pressure in the units, bar
- Pump material*
  **E** – Corrosion resistant steel; **K** – Austenitic steel
- Adjustable capacity
- Drive version

* Shall be specified upon order placement

## TECHNICAL DATA

| Unit | Capacity $m^3/h$ | Pressure, bar | Max suction lift, m | Rotation speed, rpm | Liquid type, viscosity cSt (°relative viscosity), temperature | Power, kW | Weight, kg |
|---|---|---|---|---|---|---|---|
| N1V 1.6/5-0.1/1.6 | 0.1 | 1.6 | 0.5 -2.5* | 140 | spinning solution 4600 (620) 45 °C | 1.1 | 180 |
| N1V 6/5-1/2.5-1 | 1.0 | 2.5 | 0-2.5* | 360 | suspension and paste of titanium dioxide 20 (3) 45 °C | 2.2 | 210 |
| N1V 6/5-2.5/1.6 | 2.5 | 1.6 | 0-2.5* | 720 | paste of titanium dioxide 20 (3) 45 °C | 2.2 | 110 |
| N1V 6/10-4/6.3-Rp-1 | 1.0 - 4.0 | 6.3 | 0-2.5* | 230 -880 | mixture of chemicals 10 (1.86) 45 °C | 4 | 225 |
| N1V 20/5-10/5-1 | 10 | 5.0 | 0-2.5* | 960 | suspension and sulfuric acid 2 (1.1) 80 °C | 4 | 185 |
| N1V 80/5-6.3/5 | 6.3 | 5.0 | 0.5 -2.5* | 150 | spinning solution 4600 (621) 45 °C | 3 | 324 |
| N1V 80/5-6.3/5-Rp-1 | 1.3 - 6.3 | 5.0 | 0.5 -2.5* | 30 -150 | | 4 | 530 |
| N1V 80/5-32/4-1 | 32 | 4.0 | 0-2.5* | 730 | 30% phosphorous acid 2 (1.1) 70 °C | 15 | 395 |
| N1V 12/5-10/5-Rp | 3 -10 | 5.0 | 6 | 485 - 1450 | various chemically active liquids 300 (40.5) 60 °C | 5.5 | 270 |
| N1V 12/10-10/10-Rp | 3 -10 | 10 | 6 | 485 - 1450 | | 7.5 | 276 |
| N1V 50/5-25/5-Rp | 8 - 25 | 5.0 | 6 | 325 - 980 | | 11 | 710 |
| N1V 50/10-25/10-Rp | 8 - 25 | 10 | 6 | 325 - 980 | | 18.5 | 1147 |

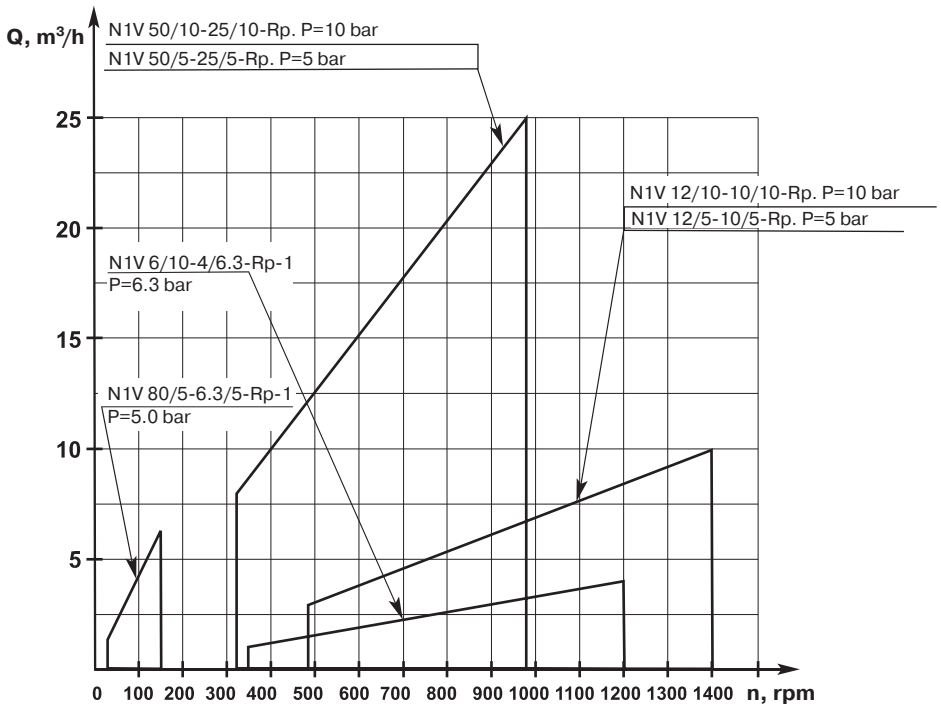
* Specified as suction pressure, bar

| Unit | Auxiliary equipment | | | |
|---|---|---|---|---|
| | Fig. # | Electric motor type | Speed variator type | Gearbox type |
| N1V 1.6/5-0.1/1.6 | 2 | AIR 80V6 | - | 1CU160-6,3-21 |
| N1V 6/5-1/2.5-1 | 2 | AIM 90L4 | - | 1CU160-4-21 |
| N1V 6/5-2.5/1.6 | 1 | AIR 112MA8 | - | - |
| N1V 6/10-4/6.3-Rp-1 | 3 | - | MK50B5 | - |
| N1V 20/5-10/5-1 | 1 | AIM 112MV6 | - | - |
| N1V 80/5-6.3/5 | 2 | AIR 112MV8 | - | 1CU160-5-21 |
| N1V 80/5-6.3/5-Rp-1 | 3 | - | MK50/2 | - |
| N1V 80/5-32/4-1 | 1 | AIM 180M8 | - | - |
| N1V 12/5-10/5-Rp | 1 | AIR112M4 | - | - |
| | 3 | - | RX77D36DV132S2 | - |
| N1V 12/10-10/10-Rp | 1 | A132S4 | - | - |
| | 3 | - | RX77D36DV132S2 | - |
| N1V 50/5-25/5-Rp | 1 | VA160M6 | - | - |
| | 3 | - | RX77D36DV132S2 | |
| N1V 50/10-25/10-Rp | 1 | VA180M6 | - | - |
| | 3 | - | RX77D36DV132S2 | - |

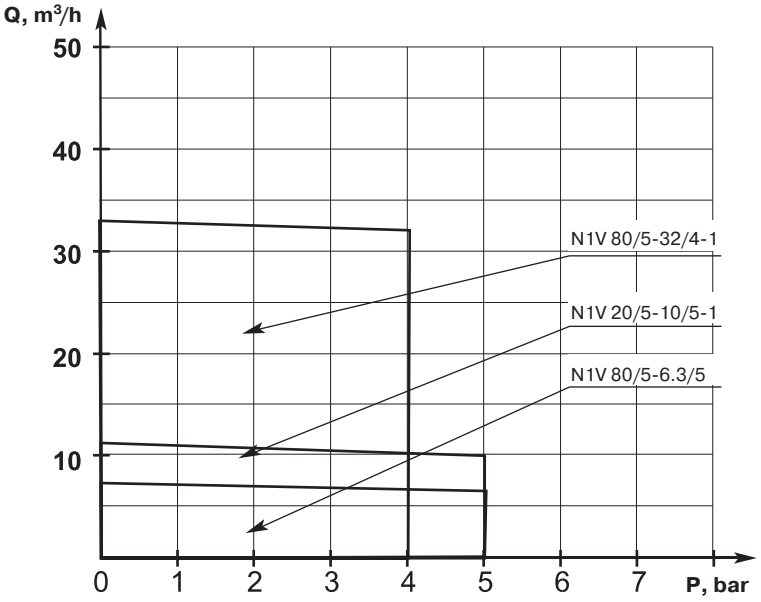
The pumping units design may differ from images given in the catalogue depending on types of auxiliary equipment (electric motors, speed variators, gearboxes) available at the manufacturer facilities.

## PERFORMANCE RANGE

**Units N1V with adjustable capacity**




**Units N1V with capacity over 5 m³/h**



## OVERALL DIMENSIONS

**Fig. 1. Unit N1V**

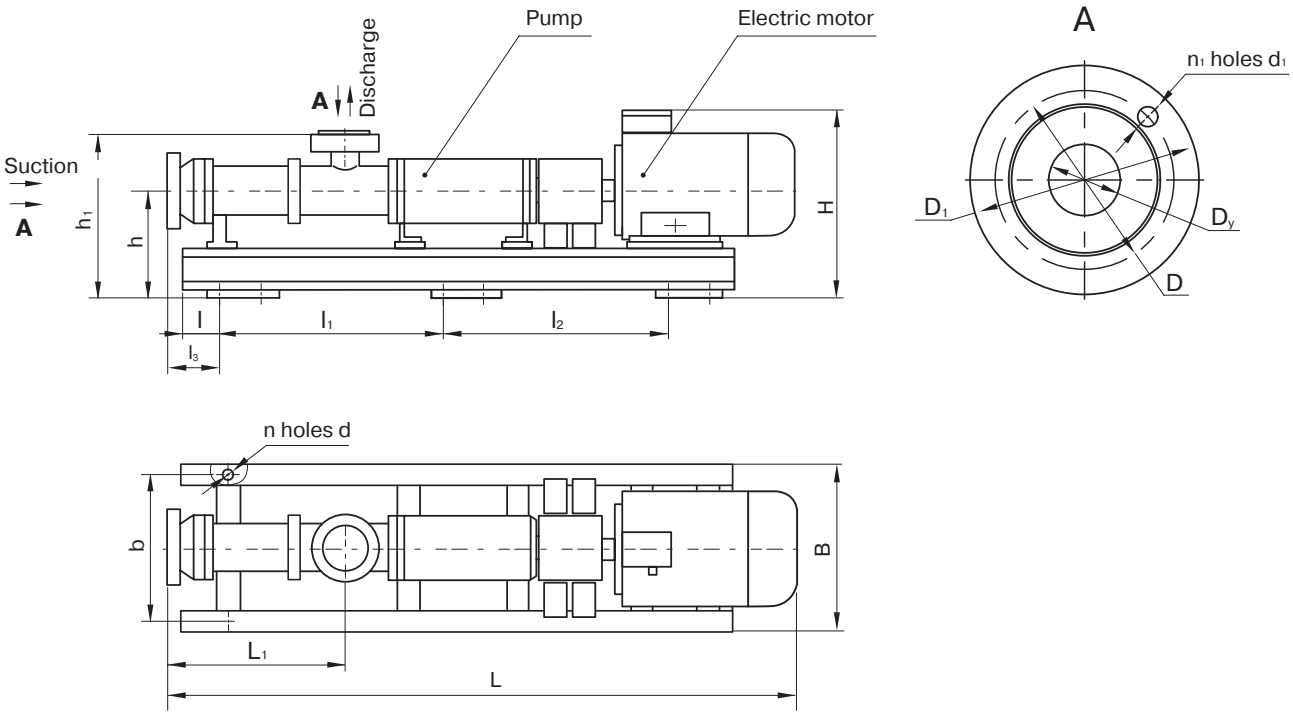
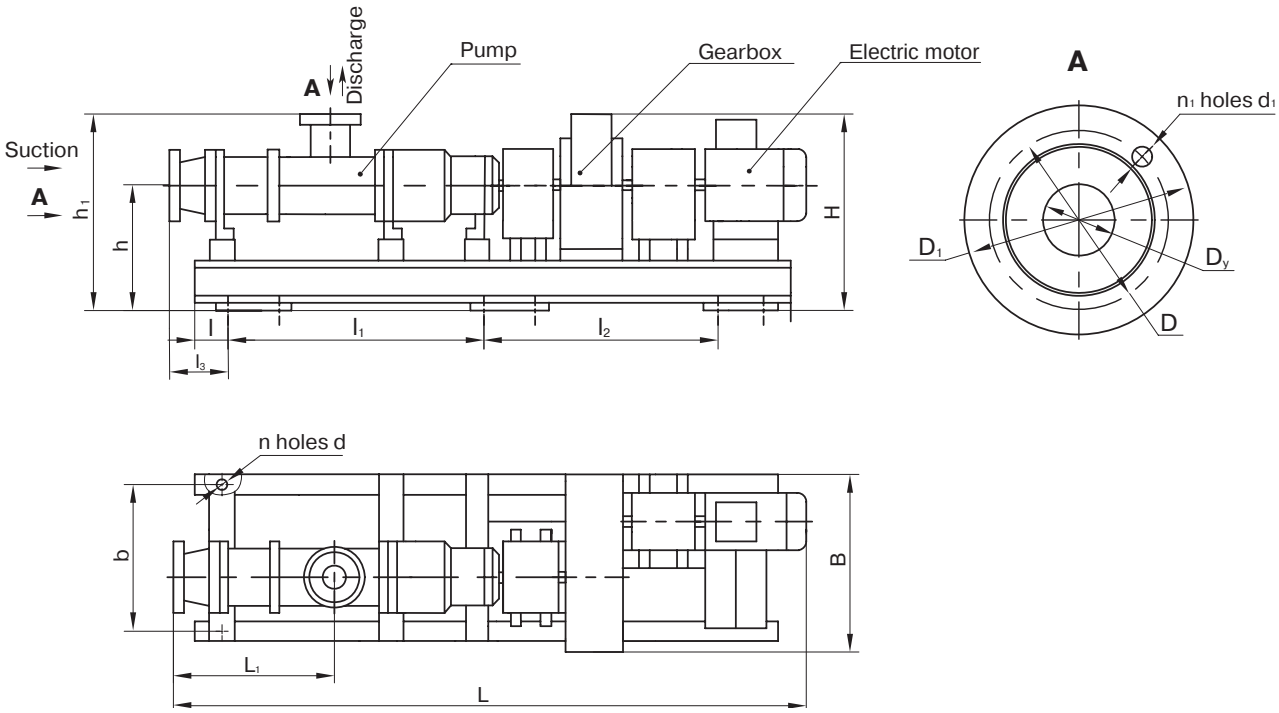
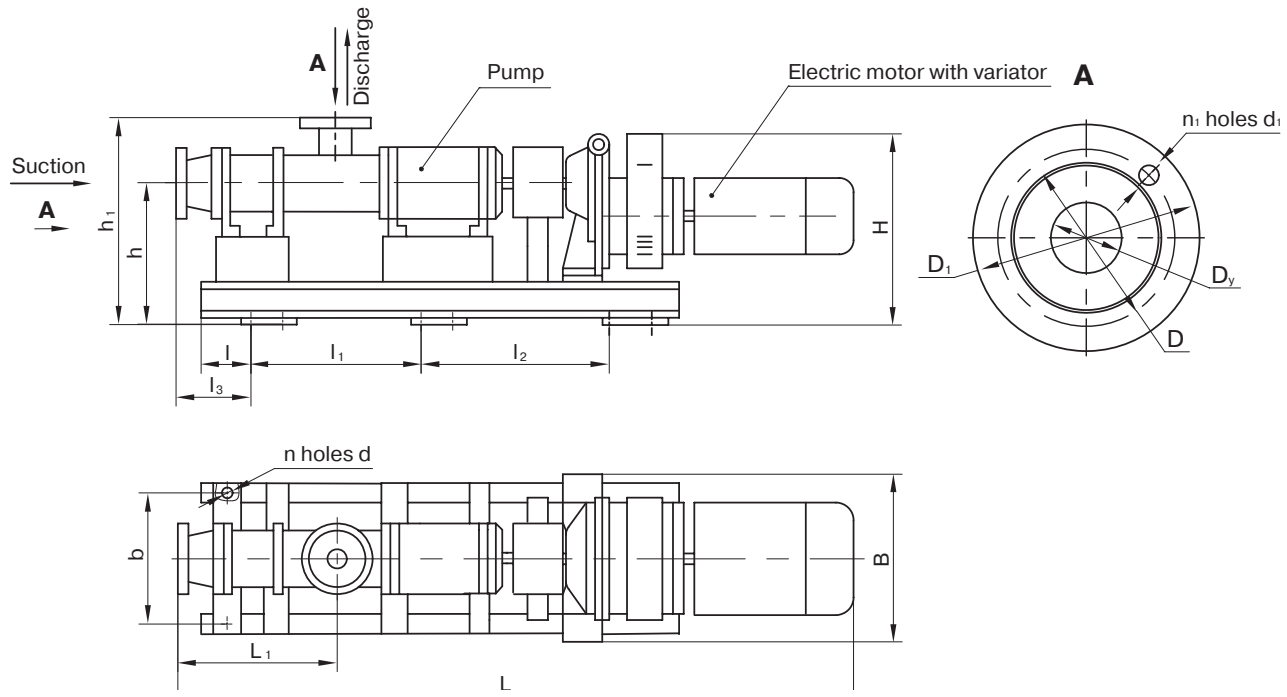



**Fig. 2. Unit N1V (with gearbox)**



## OVERALL DIMENSIONS

**Fig. 3 Unit N1V with electric motor and variator**




| Unit | Fig. # | L | B | H | l | $l_1$ | $l_2$ | $l_3$ | $L_1$ | b | h | $h_1$ | d | n | $D_y$ | D | $D_1$ | $d_1$ | $n_1$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N1V 1.6/5-0.1/1.6 | 2 | 1478 | 470 | 455 | 30 | 550 | 550 | 95 | 285 | 190 | 280 | 350 | 18 | 6 | 32 | 83 | 115 | 14 | 6 |
| N1V 6/5-1/2.5-1 | 2 | 1706 | 475 | 512 | 45 | 700 | 700 | 112 | 342 | 190 | 280 | 384 | 18 | 6 | 40 | 93 | 125 | 14 | 6 |
| N1V 6/5-2.5/1.6 | 1 | 1285 | 230 | 385 | 45 | 860 | - | 112 | 342 | 190 | 212 | 316 | 18 | 4 | 40 | 93 | 125 | 14 | 6 |
| N1V 6/10-4/6.3-Rp-1 | 3 | 1670 | 280 | 445 | 80 | 400 | 400 | 160 | 490 | 240 | 270 | 370 | 18 | 6 | 40 | 93 | 125 | 14 | 6 |
| N1V 20/5-10/5-1 | 1 | 1630 | 310 | 530 | 65 | 1010 | - | 172 | 440 | 270 | 225 | 345 | 18 | 4 | 80 | 160 | 195 | 18 | 4 |
| N1V 80/5-6.3/5 | 2 | 2200 | 495 | 535 | 35 | 880 | 880 | 177 | 685 | 410 | 356 | 510 | 18 | 6 | 100 | 180 | 215 | 18 | 8 |
| N1V 80/5-6.3/5-Rp-1 | 3 | 2405 | 320 | 565 | 50 | 745 | 745 | 257 | 685 | 250 | 310 | 455 | 18 | 6 | 100 | 180 | 215 | 18 | 8 |
| N1V 80/5-32/4-1 | 1 | 2300 | 410 | 715 | 50 | 800 | 800 | 192 | 685 | 300 | 360 | 505 | 18 | 6 | 100 | 180 | 215 | 18 | 8 |
| N1V 12/5-10/5-Rp | 1 | 1760 | 312 | 540 | 150 | 700 | 700 | 240 | 365 | 270 | 235 | 345 | 18 | 6 | 50 | 125 | 160 | 14 | 4 |
| N1V 12/5-10/5-Rp* | 3 | 1310 | 372 | 405 | 70 | 500 | 500 | 65 | 365 | 330 | 240 | 405 | 18 | 6 | 50 | 125 | 160 | 14 | 4 |
| N1V 12/10-10/10-Rp | 1 | 2035 | 380 | 585 | 150 | 700 | 700 | 240 | 540 | 334 | 235 | 345 | 18 | 6 | 50 | 125 | 160 | 14 | 4 |
| N1V 12/10-10/10-Rp* | 3 | 1549 | 412 | 436 | 70 | 400 | 400 | 65 | 540 | 370 | 252 | 436 | 18 | 6 | 50 | 125 | 160 | 14 | 4 |
| N1V 50/5-25/5-Rp | 1 | 2200 | 500 | 945 | 175 | 720 | 720 | 225 | 536 | 396 | 418 | 565 | 18 | 6 | 80 | 160 | 195 | 18 | 8 |
| N1V 50/5-25/5-Rp* | 3 | 1900 | 355 | 675 | 175 | 650 | 650 | 295 | 535 | 254 | 315 | 455 | 18 | 6 | 80 | 160 | 195 | 18 | 8 |
| N1V 50/10-25/10-Rp | 1 | 2465 | 400 | 1096 | 175 | 800 | 800 | 295 | 795 | 250 | 323 | 463 | 18 | 6 | 80 | 160 | 195 | 18 | 8 |
| N1V 50/10-25/10-Rp* | 3 | 2210 | 370 | 665 | 175 | 800 | 800 | 295 | 795 | 280 | 335 | 475 | 18 | 6 | 80 | 160 | 195 | 18 | 8 |

* - Units with variators

# VVN SERIES
## LIQUID RING VACUUM PUMPS

### APPLICATION

The liquid ring vacuum pumps of the VVN series are intended for pumping of air, nonaggressive gases, and vapor-gas mixtures prepurified from the main volume of condensed moisture in processes of oil & gas, chemical, food, paper-pulp, and other industries.

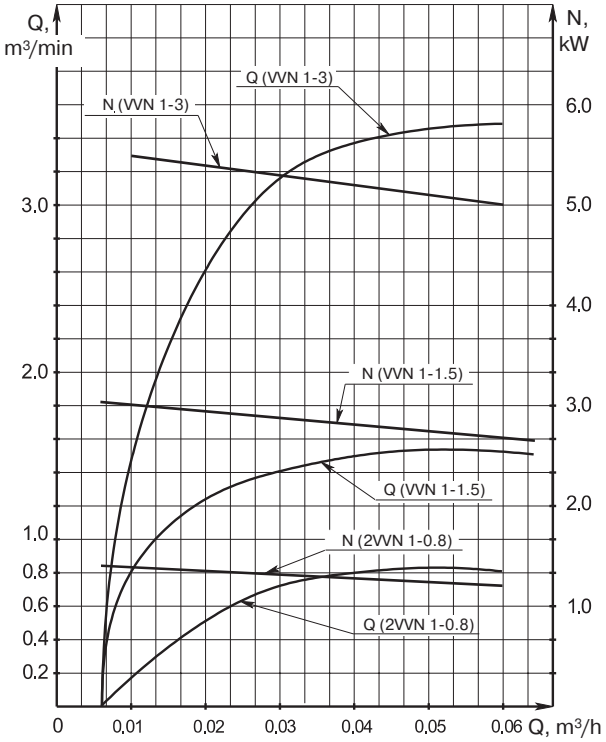
The pumps do not require prior purification of incoming gas and allow liquid ingress into the pump with incoming gas.

The pump model VVN 1-1.5 can also be used at agricultural farms (for milking units).

The pump model 2 VVN 1-0.8 can be use in explosion and fire hazardous premises being equipped with explosion-proof motor AIM80V2U2.5.

The pump models VVN 1-1.5 and 2 VVN 1-0.8 are manufactured in a close-coupled version.

### PERFORMANCE RANGE



## PUMP SERIES DESIGNATION

**2 VVN 1 – 0.8**

X VVN1 - XX

**2** - Model version

Pump series

Capacity, $m^3$/min

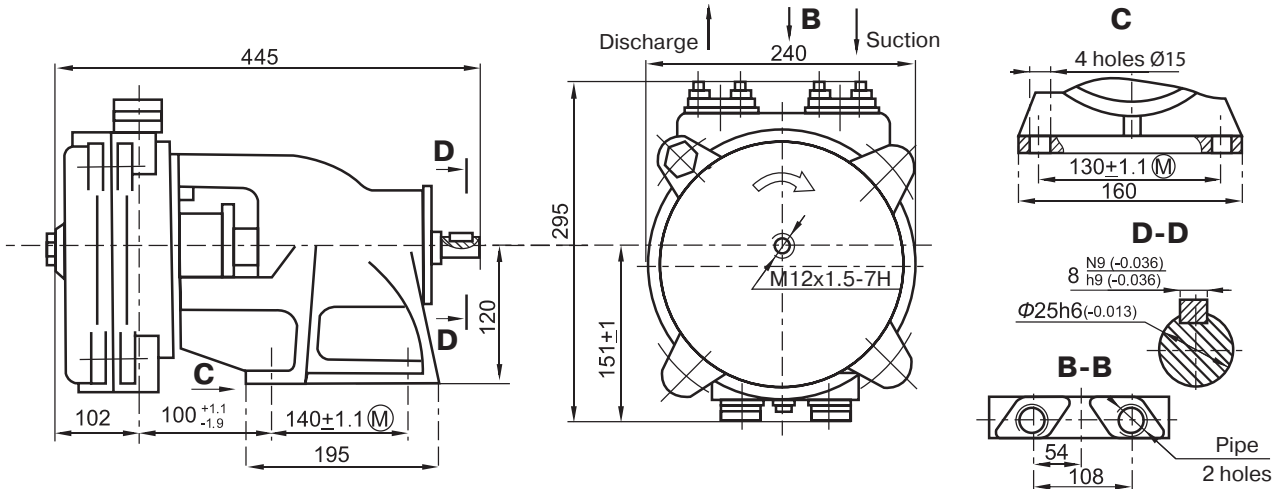
## TECHNICAL DATA

| | Close–coupled pumps | | Overhung pumps (units) | |
|---|---|---|---|---|
| | **2VVN 1–0.8** | **VVN 1–1.5** | **VVN 1–3** | **VVN 1–0.75** |
| Rated capacity, normalized to initial conditions at 0.4 bar (0.4 kgf/$cm^2$)* rated suction pressure, $m^3$/s ($m^3$/min) | 0.014 (0.8) ±10% | 0.026 (1.57) +20% / -5% | 0.056 (3.33) ±10% | 0.0125 (0.75) ±10% |
| Max decrease of rated capacity at 0.2 bar (0.2 kgf/$cm^2$) suction pressure, % | 40 | - | 20 | 40 |
| Max power consumed at the rated capacity*, kW | 1.3 ± 0.13 | 3.0 ± 0.30 | 6.15 ± 10% | |
| Max specific power, kW/$m^3$ min. | 1.6 | 4.4 | | 2.0 |
| Max water consumption, $dm^3$/s ($m^3$/h) | 0.056 (0.2) | 0.083 (0.3) | 0.116 (0.42) | 0.056 (0.2) |
| Rotation speed, $s^{-1}$ (rpm) | 48.3 ± 0.833 (2900 ± 50) | 25 ± 0.833 (1500 ± 50) | | 24 ± 0.833 (1450 ± 50) |
| Power supply | ~ 380, 220 / 380 V, 50 Hz | | | |
| Electric motor power, kW | 2.2 | 5.5 | 7.5 | 2.2 |
| Max pump weight (close-coupled), kg | 42.5 | 110 | | |
| Max pump weight (overhung), kg | - | - | 110 | 38 |
| Pumping unit weight, kg | - | - | 210 | 90 |
| Max leakage through the gland seal, $cm^3$/h | - | 100 | 100 | 100 |

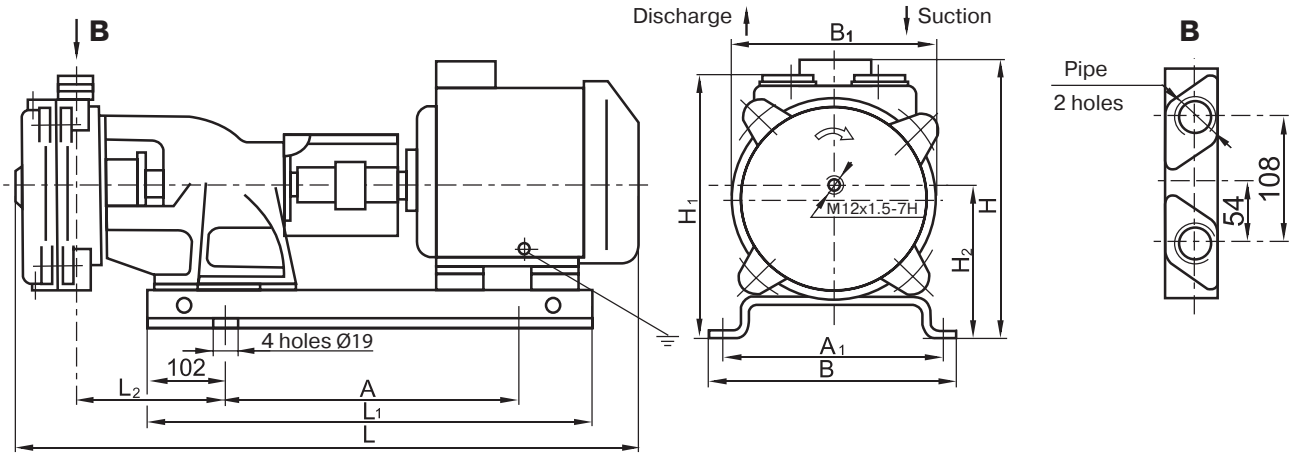
The parameters are given at max pumped gas temperature of 293K (20 °C) and max service water temperature of 288K (15 °C)

## OVERALL DIMENSIONS

Pump **VVN 1–0.75**



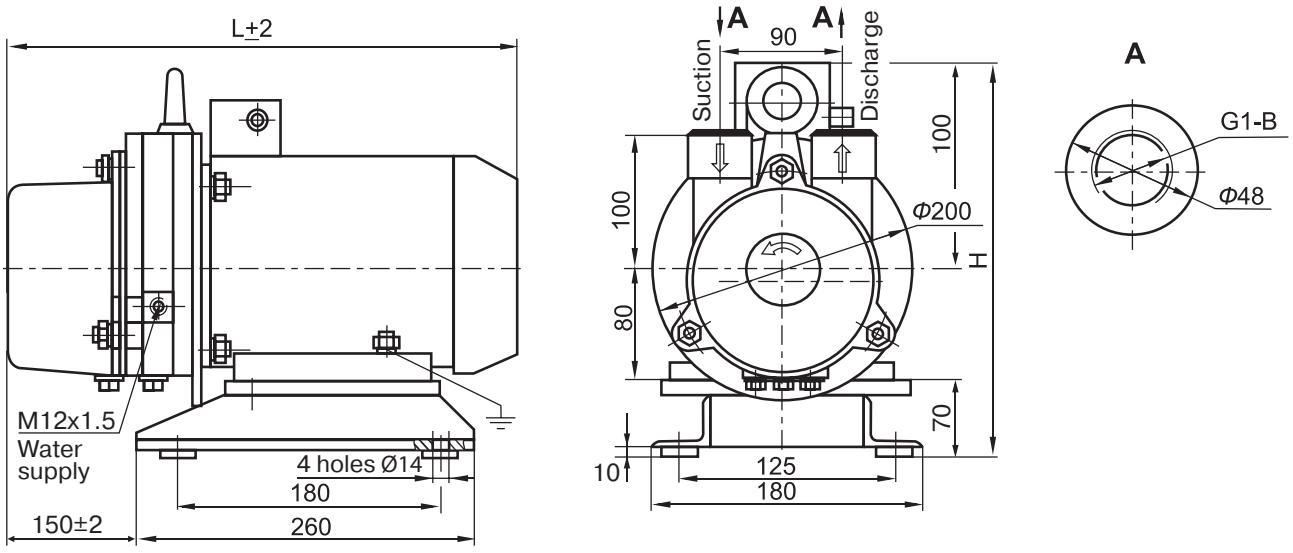

Pumping unit **VVN 1–0.75**




| Electric motor | Power, kW | Dimensions, mm | | | | | | | | | | Weight, kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | $L_1$ | $L_2$ | A | $A_1$ | B | $B_1$ | H | $H_1$ | $H_2$ | |
| AIR 90 L4 | 2.2 | 820 | 575 | 170 | 369+1.1Ⓜ | 285±1.1Ⓜ | 332 | 240 | 315 | 312 | 180 | 72 |
| A90L4 | 2.2 | 870 | 575 | 170 | 369+1.1Ⓜ | 285±1.1Ⓜ | 332 | 240 | 307 | 312 | 180 | 80 |

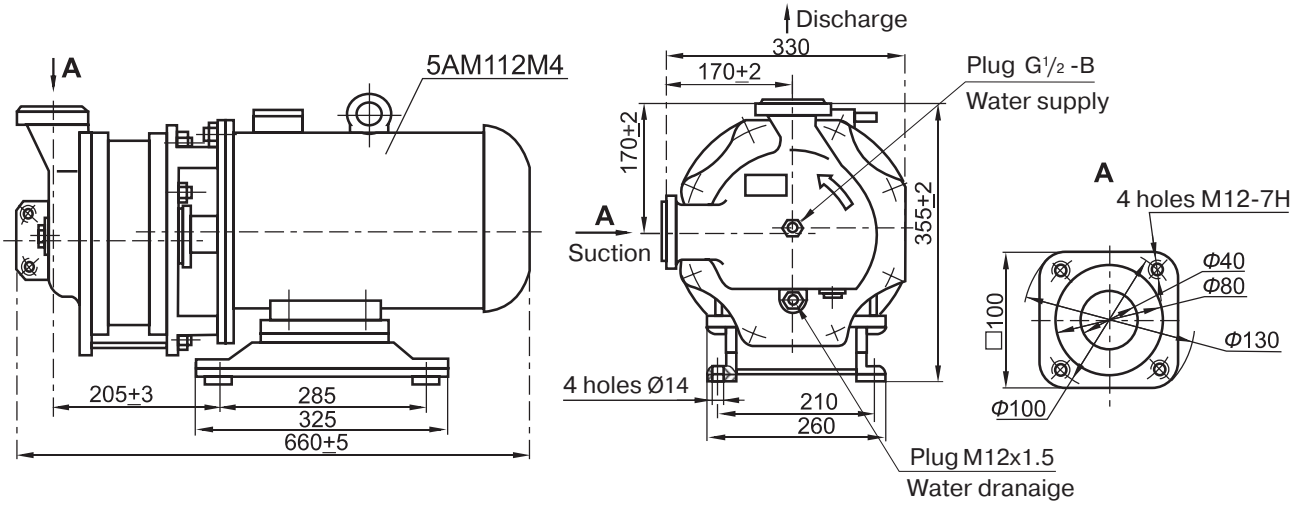
## OVERALL DIMENSIONS

Close-coupled pump 2VVN 1-0.8



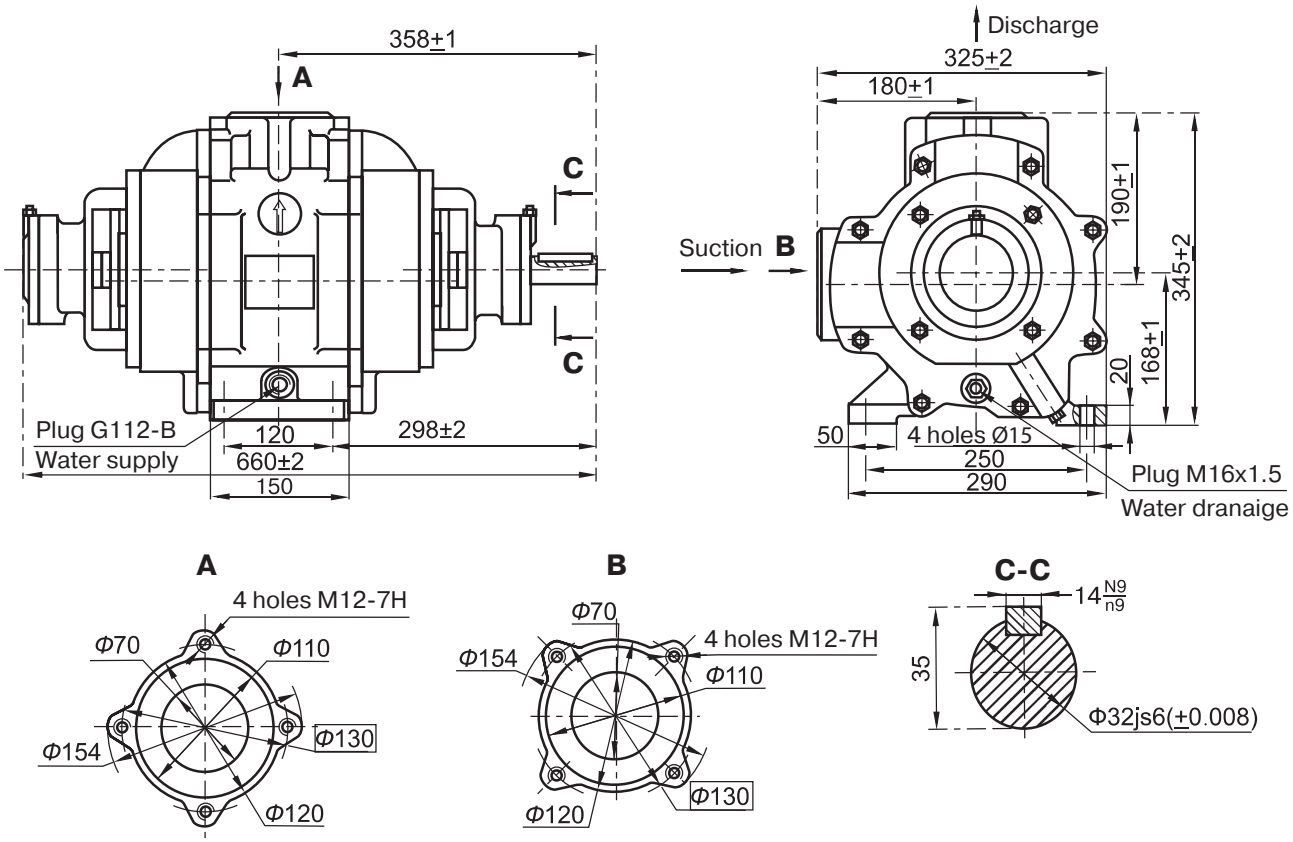

| Electric motor | L, mm | H, mm | Weight, kg |
|---|---|---|---|
| AIM 80B2 U2.5 | 456 | 315 | 42.5 |
| AIR 80V2 U2 | 416 | 266 | 30.5 |
| 5A 80MV2 U2 | 416 | 266 | 30.5 |

**Close-coupled pump VVN 1-1.5**

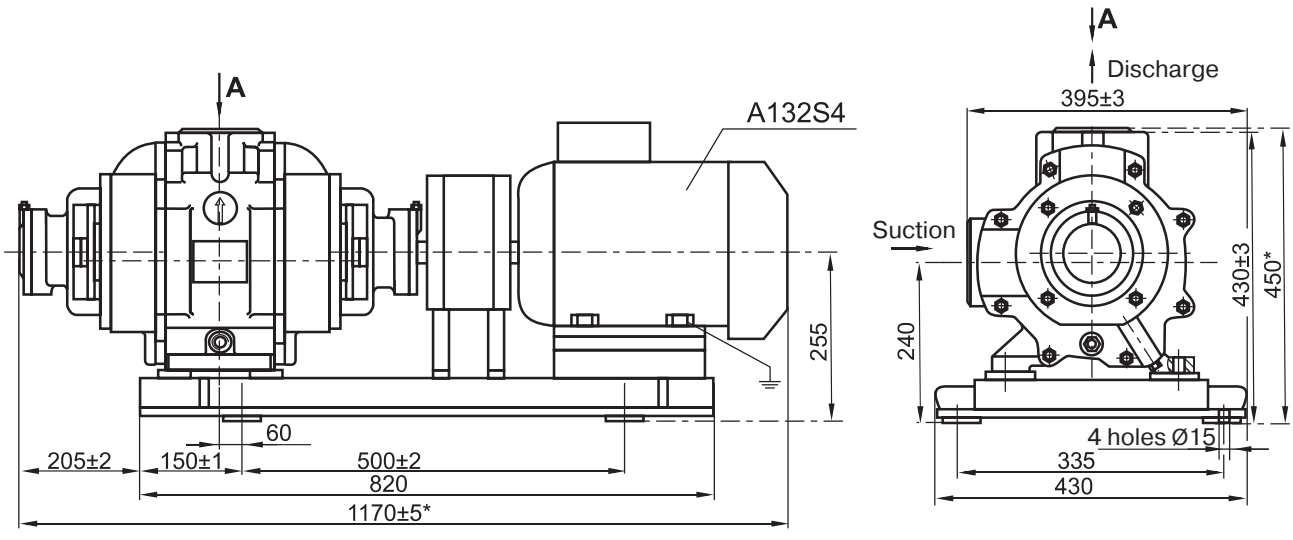


## OVERALL DIMENSIONS

Pump **VVN 1–3**




Pumping unit **VVN 1–3**




* The unit dimensions depend on the motor type and its size

# BURUN® SERIES
## SINGLE-SCREW SELF-PRIMING CLOSE-COUPLED PUMPS

### APPLICATION

The single-screw self-priming close-coupled pumps of the BURUN® series are intended for pumping of clear water, various liquids and suspensions up to 1000 CP in applications requiring steady non-pulsatile flow (without mixing) and preservation of the pumped liquid structure.

The pumps operate with liquids with temperature up to 35 °C (in continuous mode) and up to 70 °C in intermittent mode.

Depending on required pump capacity or liquid viscosity the pumps are equipped with three-phase motors with rotating speed 3000, 1500, 1000 and 750 rpm for voltage 380V or single-phase motors with the rotating speeds 3000 and 1500 rpm.

### ADVANTAGES

- High self-priming ability
- Simple design and easy maintenance
- Pump capacity is proportional to rotation speed (a variable frequency drive is required)
- High discharge pressure with small dimensions due to self-regulating guide tube

### PUMP SERIES DESIGNATION

Burun® X X/X - X X/X

- Trade mark
- Model version:
  **N1V** - self-priming, drainage pump
  **SH** - self-priming pump for slightly aggressive liquids
  **PF** - sewage pump
- Max capacity, $m^3/h$
- Pressure, $kgf/cm^3$, max
- Motor version: **M** – multi-phase, 220 V
  no mark – three-phase, 380 V
- Electric motor power, kW
- Rotation speed index:
  **2** – 3000 rpm; **4** – 1500 rpm; **6** – 1000 rpm; **8** – 750 rpm

# BURUN® N1V SERIES
## SINGLE-SCREW SELF-PRIMING DRAINAGE PUMPS

### APPLICATION

The single-screw self-priming drainage pumps of the BURUN N1V series are intended for pumping of water and dissimilar non-corrosive liquids with mechanical impurities and viscosity up to 1000 cP in industry and household (cesspools cleaning, watering and irrigation of gardens) applications.

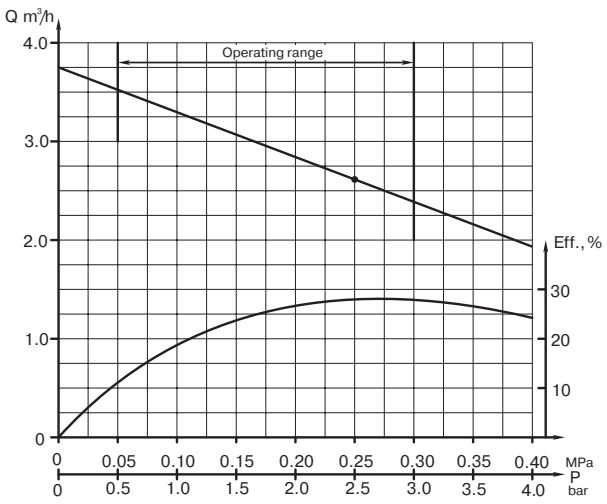
The pump casing is made of aluminum and high-strength plastic. The shaft is sealed by reinforced easy-replaceable sleeve gasket.

### TECHNICAL DATA

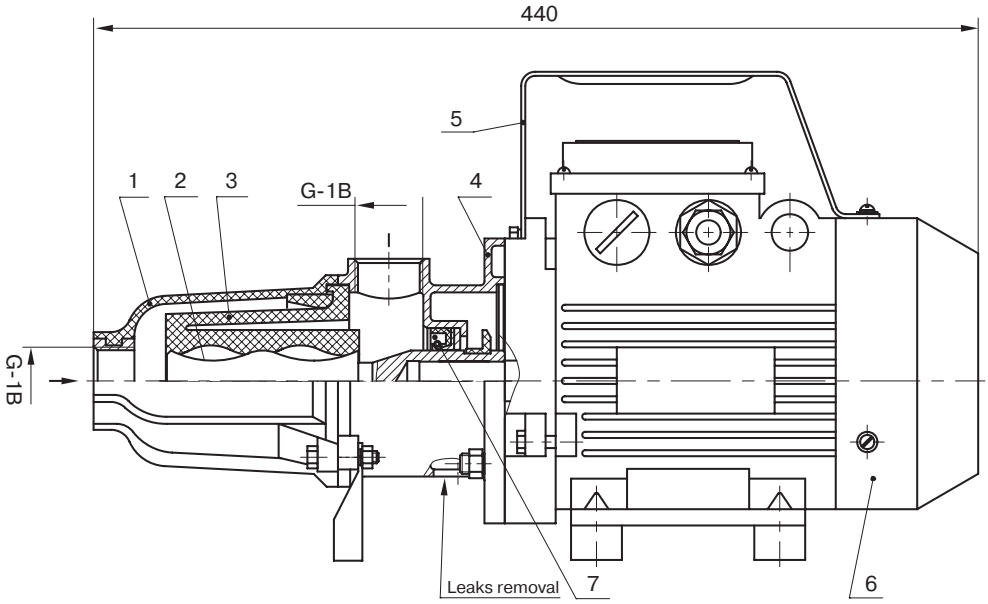
| Pump | Max pump pressure, bar | Capacity at "0" bar pressure, $m^3/h$ | Capacity at max pressure, bar | Max viscosity, CP |
|---|---|---|---|---|
| N1V 2.5/2-220 BURUN | 2.5 | 3.6 | 1.2 | 1000 |
| N1V 2.5/2-380 BURUN | 2.5 | 3.6 | 1.2 | 1000 |

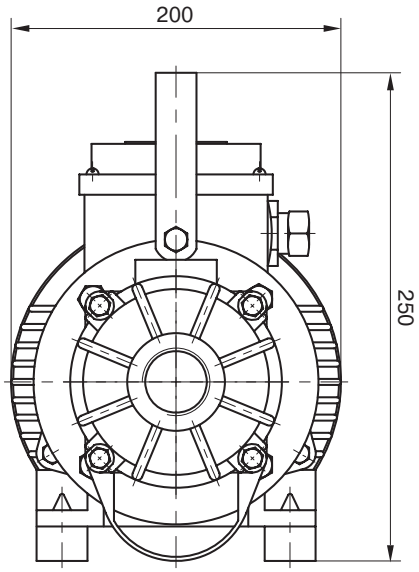
| Pump | Electric motor | | | | Weight, kg |
|---|---|---|---|---|---|
| | Power supply | Current, A | Power, kW | Rotation speed, $s^{-1}$ (rpm) | |
| N1V 2.5/2-220 BURUN | 1~ 220 V, 50 Hz | 3.7 | 0.55 | 50 (3000) | 12.5 |
| N1V 2.5/2-380 BURUN | 3~ 380 V, 50 Hz | 1.8 | 0.75 | 50 (3000) | 12.2 |

### PERFORMANCE CURVE



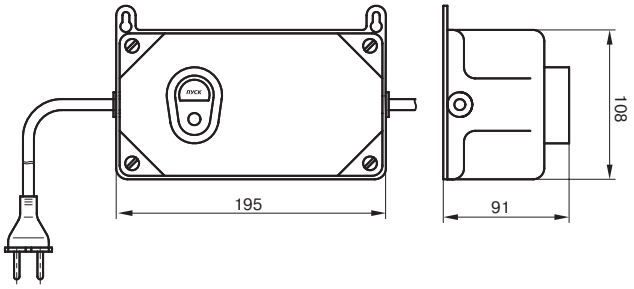
## OVERALL DIMENSIONS



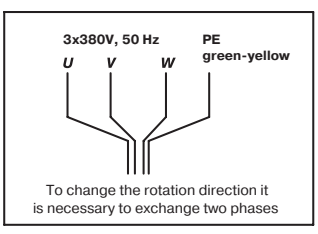




1 - Case
2 - Pumping screw
3 - Guiding tube block
4 - Light
5 - Handle
6 - Electric motor
7 - Sleeve gasket

Starting device for single-phase version




Connection diagram for three-phase version



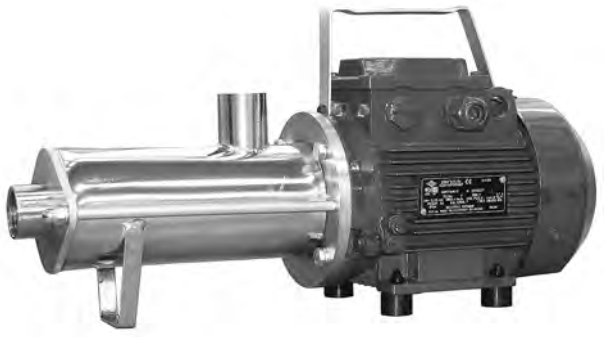
# BURUN® SH SERIES
## SINGLE-SCREW SELF-PRIMING ALIMENTARY PUMPS

### APPLICATION

The single-screw self-priming alimentary pumps of the Burun® of SH series are intended for pumping of food products (dough, sour cream, oils, food creams and fillers, jams, honey, preserved food, etc.), paints, cosmetic fluids and creams, detergents, suspended substances and chemically active liquids, which demand no mixing and foaming.

The pumps of this series are distinguished by simple design, installation, and maintenance. The casing and screw are made of stainless steel. The shaft bears the mechanical seal.

Depending on the pumped liquid the pump can be equipped with a screw guiding block corresponding to requirements of operation with food products and cosmetics that is confirmed by appropriate certificate.

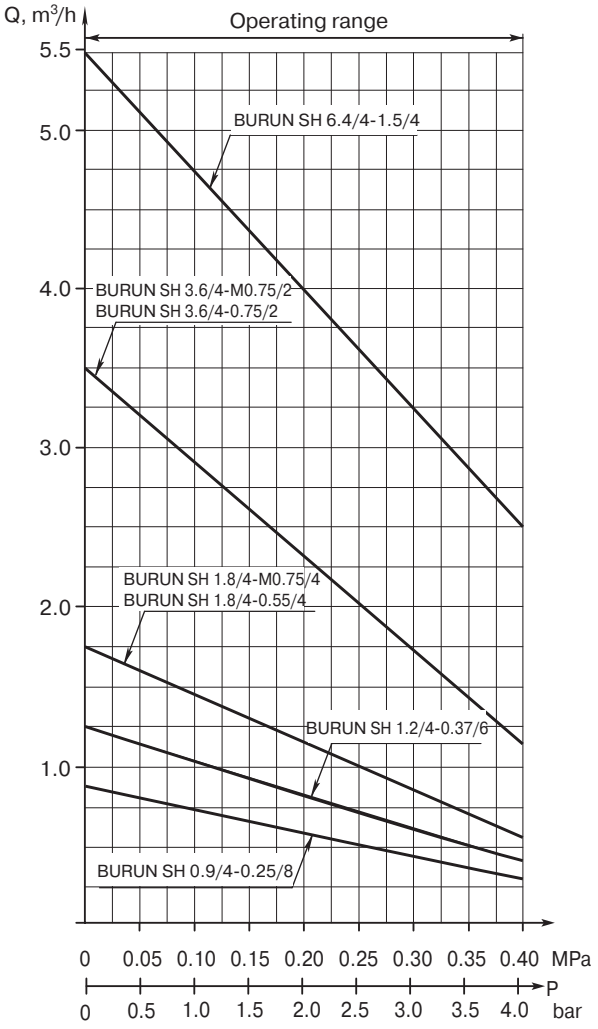


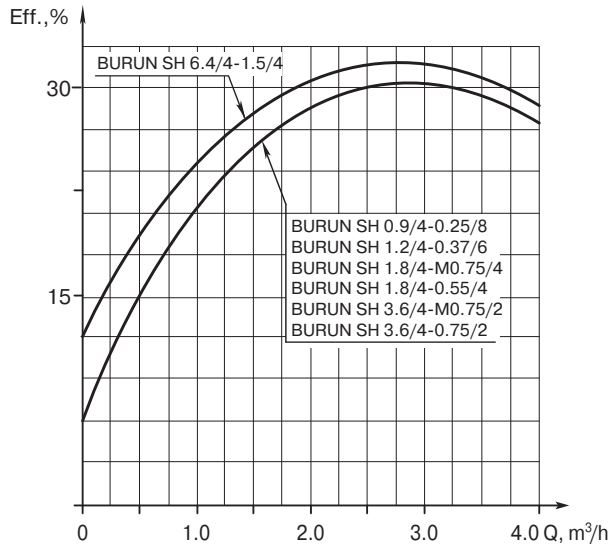
### TECHNICAL DATA

| Pump | Max pump pressure, bar | Capacity at "0" bar pressure, $m^3/h$ | Capacity at max pressure, bar | Max viscosity, CP |
|---|---|---|---|---|
| BURUN SH 0.9/4-0.25/8 | 4 | 0.9 | 0.4 | 3000 |
| BURUN SH 1.2/4-0.37/6 | 4 | 1.2 | 0.5 | 3000 |
| BURUN SH 1.8/4-M0.75/4 | 4 | 1.8 | 0.8 | 2000 |
| BURUN SH 1.8/4-0.55/4 | 4 | 1.8 | 0.8 | 2000 |
| BURUN SH 3.6/4-M0.75/2 | 4 | 3.2 | 1.2 | 1000 |
| BURUN SH 3.6/4-0.75/2 | 4 | 3.2 | 1.2 | 1000 |
| BURUN SH 6.4/4-1.5/4 | 4 | 5.5 | 2.5 | 2000 |

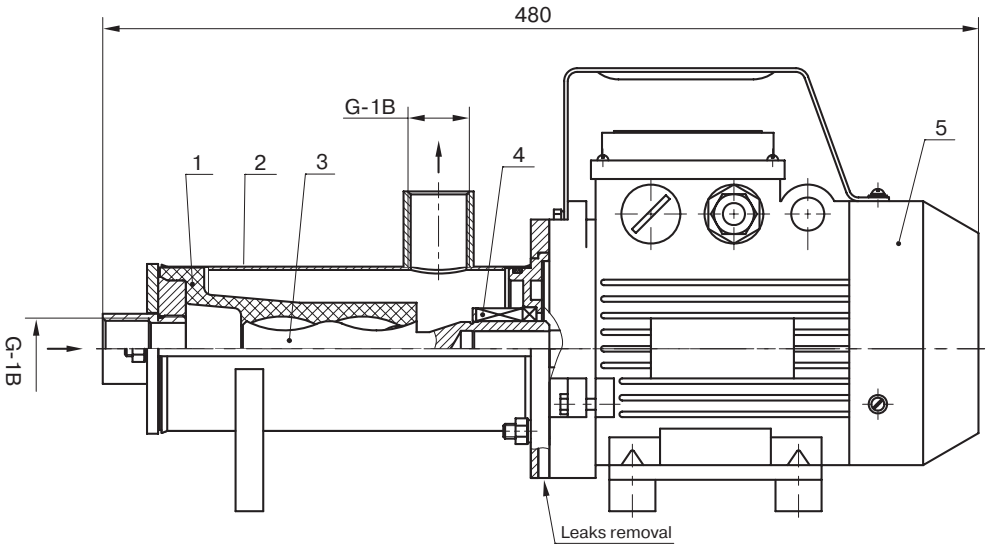
| Pump | Electric motor | | | | Weight, kg |
|---|---|---|---|---|---|
| | Power supply | Current, A | Power, kW | Rotation speed, $s^{-1}$ (rpm) | |
| BURUN SH 0.9/4-0.25/8 | 3~ 380 V, 50 HZ | 1.1 | 0.25 | 12.5 (750) | 14.0 |
| BURUN SH 1.2/4-0.37/6 | 3~ 380 V, 50 HZ | 1.4 | 0.37 | 18.5 (1000) | 12.5 |
| BURUN SH 1.8/4-M0.75/4 | 1 ~220 V, 50 HZ | 6.0 | 0.75 | 25 (1500) | 15.7 |
| BURUN SH 1.8/4-0.55/4 | 3~ 380 V, 50 HZ | 1.7 | 0.55 | 25 (1500) | 12.5 |
| BURUN SH 3.6/4-M0.75/2 | 1 ~220 V, 50 Hz | 5.7 | 0.75 | 50 (3000) | 15.2 |
| BURUN SH 3.6/4-0.75/2 | 3~ 380 V, 50 HZ | 1.8 | 0.75 | 50 (3000) | 13.0 |
| BURUN SH 6.4/4-1.5/4 | 3~ 380 V, 50 HZ | 3.6 | 1.5 | 25 (1500) | 21.5 |

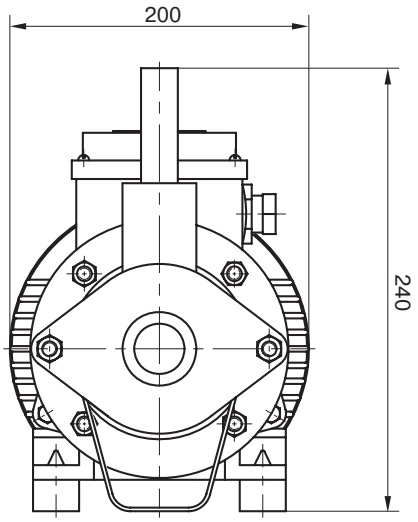
## PERFORMANCE CURVE



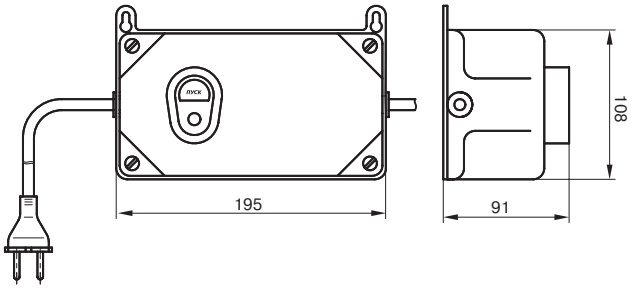
## OVERALL DIMENSIONS



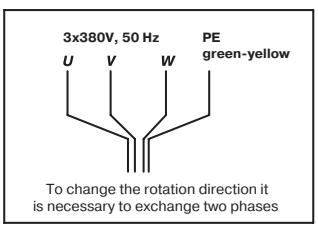




1 - Screw guiding block
2 - Case
3 - Pumping screw
4 - Mechanical seal
5 - Electric motor

Starting device for single-phase version




Connection diagram for three-phase version



# BURUN® PF SERIES
## SINGLE-SCREW SELF-PRIMING SEWAGE PUMPS

### APPLICATION

The single-screw self-priming sewage pumps of the BURUN PF series are intended for pumping of liquids with high concentration of mechanical and viscous impurities, i.e. in conditions when GNOM series pumps cannot be used.

The pump casing parts are made of stainless steel.

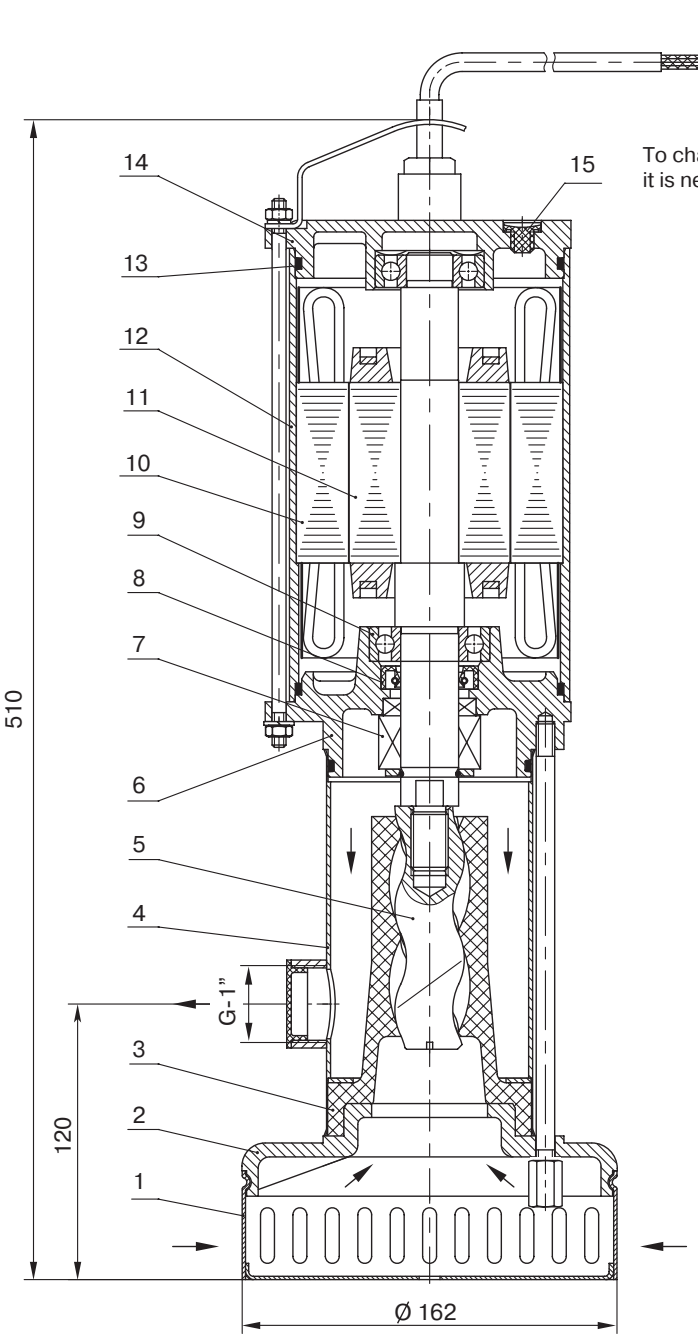
The pump is not intended for operation in explosion and fire hazardous premises.

### TECHNICAL DATA

| Pump | Max pump pressure, bar | Capacity at "0" bar pressure, $m^3/h$ | Capacity at max pressure, bar | Max viscosity, CP |
|---|---|---|---|---|
| BURUN PF 1.8/4-M0.55/4 | 4 | 1.8 | 0.75 | 2000 |
| BURUN PF 1.8/4-0.55/4 | 4 | 1.8 | 0.75 | 2000 |

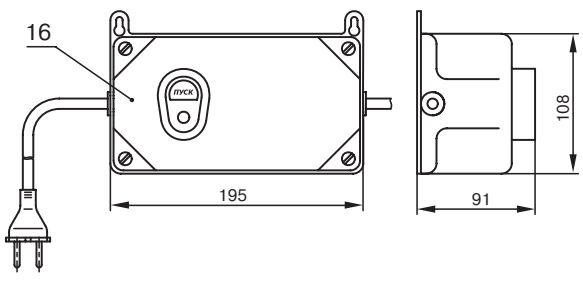
| Pump | Electric motor | | | | Weight, kg |
|---|---|---|---|---|---|
| | Power supply | Current, A | Power, kW | Rotation speed, $s^{-1}$ (rpm) | |
| BURUN PF 1.8/4-M0.55/4 | 1~ 220 V, 50 Hz | 4.0 | 0.55 | 25 (1500) | 16.5 |
| BURUN PF 1.8/4-0.55/4 | 3 ~380 V, 50 Hz | 1.7 | 0.55 | 25 (1500) | 16 |

## OVERALL DIMENSIONS




1 - Filter
2 - Support
3 - Rubber block
4 - Pump case
5 - Pumping screw
6 - End shield
7 - Mechanical seal
8 - Collar
9 - Bottom bearing
10 - Electric motor stator
11 - Electric motor rotor
12 - Pipe
13 - Rubber rings
14 - Cover
15 - Plug
16 - Starting device

Starting device for single-phase version



# BV 0.12 (MALYSH) SERIES
## HOUSEHOLD SUBMERSIBLE VIBRATION PUMPS

### APPLICATION

The household submersible vibration pumps of BV 0.12 (MALYSH) series are intended to supply water with temperatures below 35 °C from wells, boreholes, open reservoirs for small farms, field mills, for water disposal from ditches, trenches, basements, storage tanks, for watering gardens, and individual water supply applications.

Serviceable wells/boreholes (internal diameter):

- over 100 mm: MALYSH and MALYSH-M
- over 80 mm: MALYSH-3

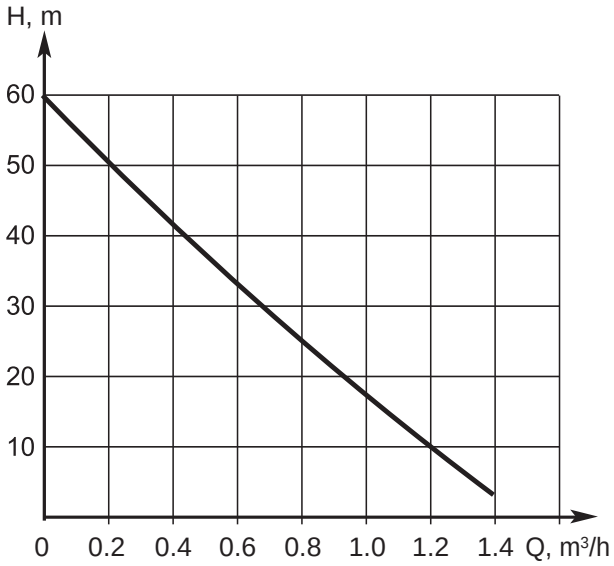
The pump models MALYSH and MALYSH-M are equipped with the upper water intake for constant cooling of electromagnetic system and its prevention from overheating. The upper intake also excludes the water turbidity and suction of silt from the bottom of the water source.

Pump with lower water intake

Pump with upper water intake

### ADVANTAGES

- High capacity (up to 1.8 m³/h) at operation without delivery head, light weight and energy efficiency
- Powered by the electric power generators, solar panels, and diesel-driven generators of appropriate power
- High reliability and durability
- Compliance with safety standards
- No maintenance required




### PUMP SERIES DESIGNATION

**BBV 0.12–20 (MALYSH), BV 0.12–40 (MALYSH–M), BV 0.12–20 (MALYSH–3)**

BV-0.12-XX

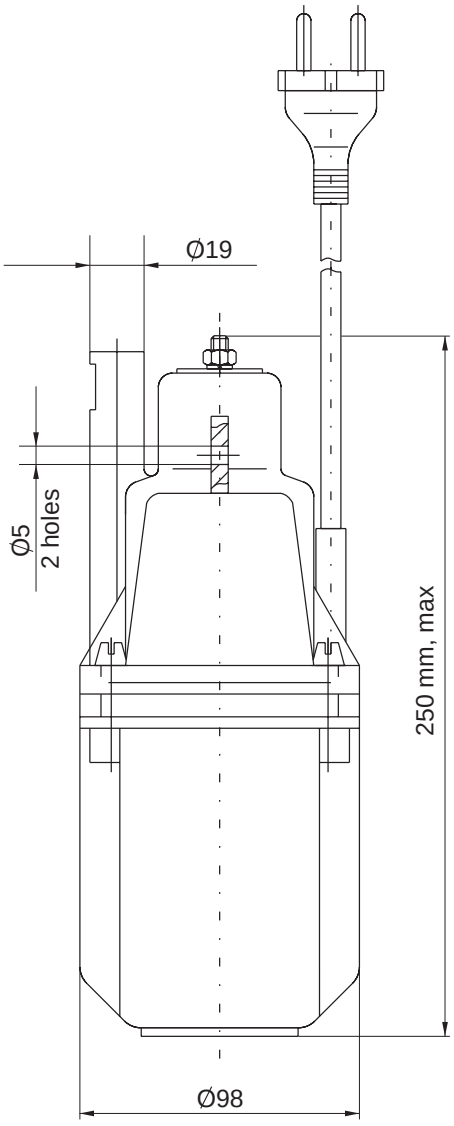
Pump series

Rated volume capacity, liters per second

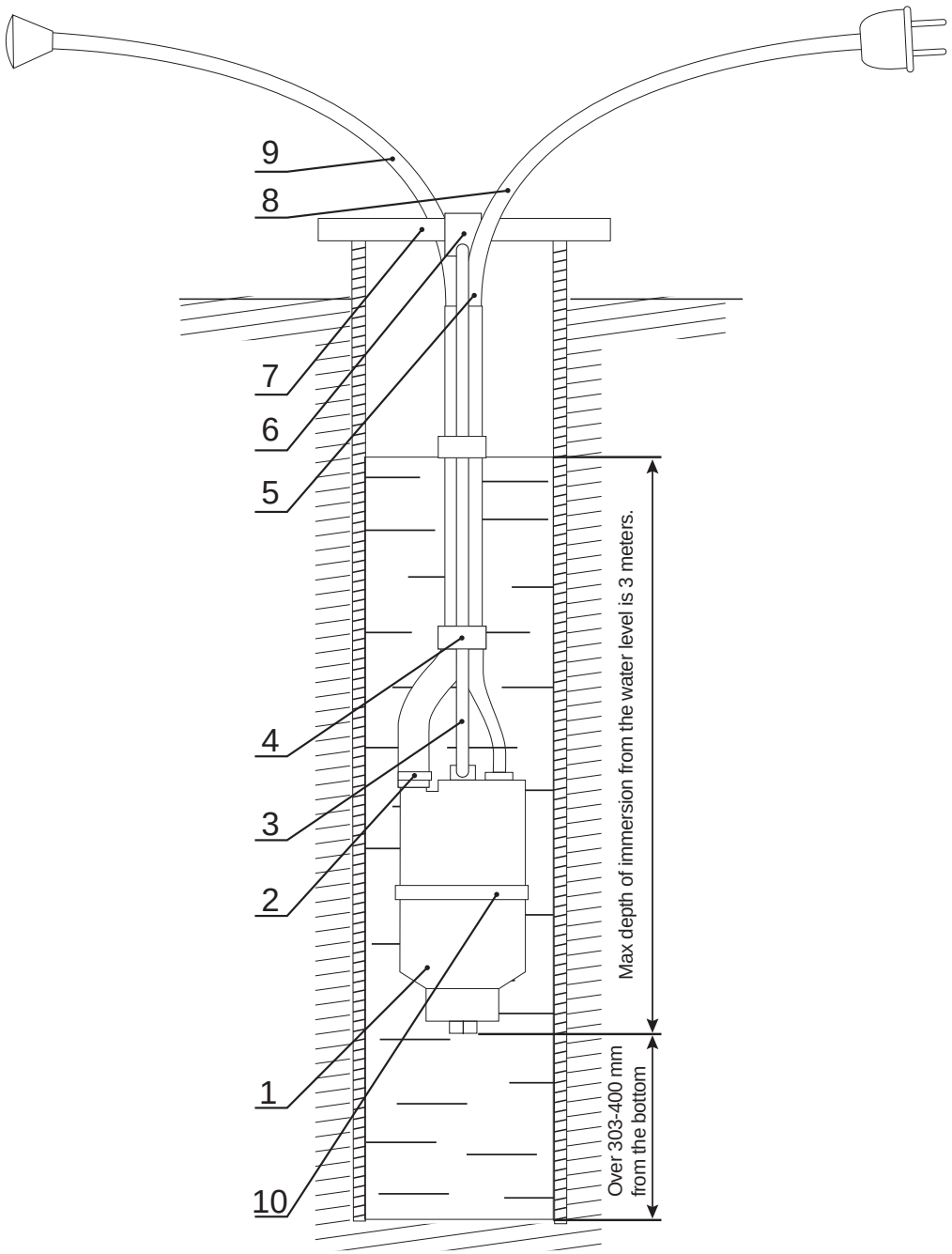
Head, m

| TECHNICAL DATA | | | |
|---|---|---|---|
| | **«Malysh»** | **«Malysh-M»** | **«Malysh-3»** |
| Voltage, V | 220 | 220 | 220 |
| Frequency, Hz | 50 | 50 | 50 |
| Max power, W | 245 | 245 | 165 |
| Max current, A | 3.7 | 3.7 | 3.5 |
| Water intake depth at 432 liters/hour volume capacity, m | 40 | 40 | 20 |
| Max weight, kg (without power cord) | 3.5 | 3.5 | 3.2 |
| Power cord lenght, m | 10, 16, 25, 32, 40, 50 | | |

## OVERALL DIMENSIONS



## INSTALLATION IN A WELL




1 - Electric pump
2 - Clip
3 - Suspension
4 - Cord and hose connection
5 - Cord
6 - Rubber spring suspension
7 - Cross bar
8 - Male plug
9 - Hose
10 - Rubber ring (optional)

# BCP® SERIES
## HOUSEHOLD CENTRIFUGAL BOREHOLE PUMPS

### APPLICATION

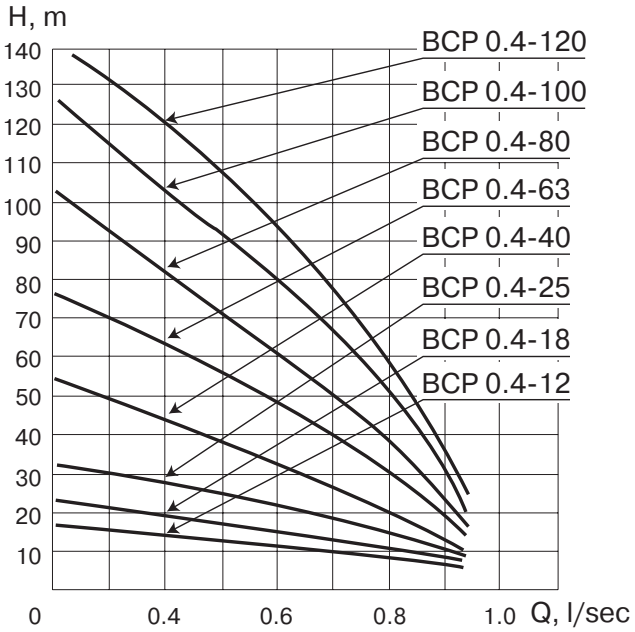
The household centrifugal borehole pumps of the BCP series are intended for supply of water from boreholes and wells with minimal internal diameter of 100 mm and from the open water sources as well.

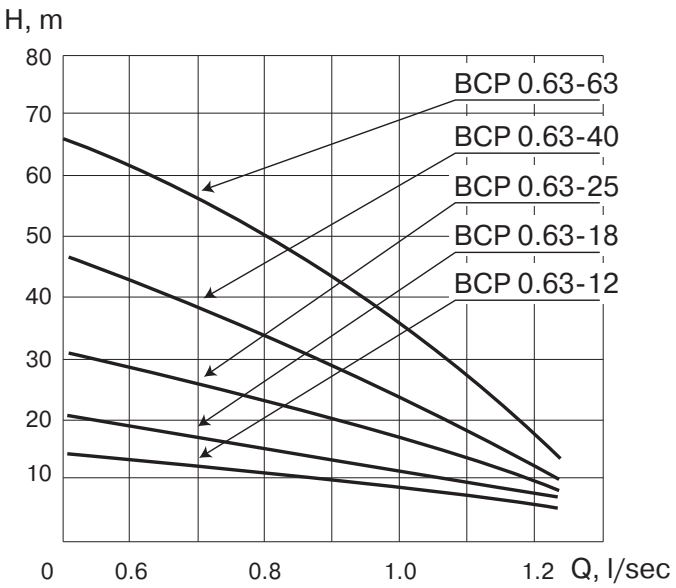
- Max dry residue: 1500 g/m$^3$
- Hydrogen index: pH=6.5 -9.5
- Max temperature: 308 K (38 °C)
- Max solids content: 0.01%
- Max chloride content: 1.5 g/m

### DESIGN FEATURES

- Mechanical seal for protection of electric motor against ingress of sand, improved reliability and durability of bearings, and protection of electromagnetic components of stator / rotor from corrosion
- The cavity of stator is filled with compound for operation safety and cooling of electric motor
- A thermal switch installation in the stator winding for protection of electric motor from overheating in case of pump blocking, slow start, low voltage, etc.

### PERFORMANCE RANGE



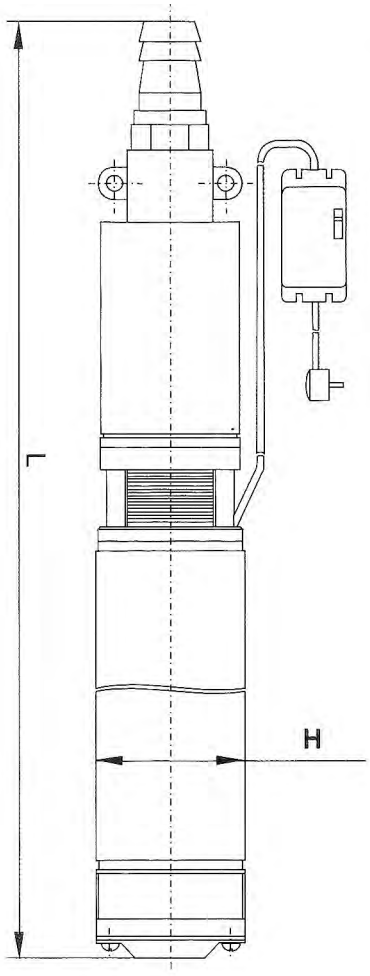



## TECHNICAL DATA

| Pump | Capacity, l/sec ($m^3/h$) | Head, m | Voltage, V | Power, kW | Max current, A |
|---|---|---|---|---|---|
| BCP-0.4-12 | 0.4 (1.44) | 12 | 220 | 0.4 | 1.8 |
| BCP-0.4-18 | 0.4 (1.44) | 18 | 220 | 0.5 | 2.0 |
| BCP-0.4-25 | 0.4 (1.44) | 25 | 220 | 0.7 | 3.2 |
| BCP-0.4-40 | 0.4 (1.44) | 40 | 220 | 0.9 | 3.85 |
| BCP-0.4-63 | 0.4 (1.44) | 63 | 220 | 1.35 | 6.05 |
| BCP-0.4-80 | 0.4 (1.44) | 80 | 220 | 1.8 | 8.5 |
| BCP-0.4-100 | 0.4 (1.44) | 100 | 220 | 2.4 | 11.0 |
| BCP-0.4-120 | 0.4 (1.44) | 120 | 220 | 2.6 | 12.4 |
| BCP-0.63-12 | 0.63 (2.26) | 12 | 220 | 0.5 | 1.7 |
| BCP-0.63-18 | 0.63 (2.26) | 18 | 220 | 0.6 | 2.25 |
| BCP-0.63-25 | 0.63 (2.26) | 25 | 220 | 0.75 | 3.2 |
| BCP-0.63-40 | 0.63 (2.26) | 40 | 220 | 1.2 | 5.45 |
| BCP-0.63-63 | 0.63 (2.26) | 63 | 220 | 1.9 | 9.3 |

## OVERALL DIMENSIONS

| Pump | Max diameter (H), mm | Max length (L), mm | Max weight, kg |
|---|---|---|---|
| BCP-0.4-12 | 96 | 490 | 15 |
| BCP-0.4-18 | 96 | 510 | 16 |
| BCP-0.4-25 | 96 | 570 | 18 |
| BCP-0.4-40 | 96 | 670 | 21 |
| BCP-0.4-63 | 96 | 770 | 27 |
| BCP-0.4-80 | 96 | 960 | 43 |
| BCP-0.4-100 | 96 | 1055 | 49 |
| BCP-0.4-120 | 96 | 1125 | 55 |
| BCP-0.63-12 | 96 | 485 | 15 |
| BCP-0.63-18 | 96 | 545 | 16 |
| BCP-0.63-25 | 96 | 580 | 18 |
| BCP-0.63-40 | 96 | 690 | 23 |
| BCP-0.63-63 | 96 | 900 | 40 |



# HMS CONTROL ST SERIES
# CONTROL PANELS

## APPLICATION

The HMS Control ST panels are intended for control and protection of one or up to 4 surface installation centrifugal pumps of the DeLium, DeSum, K and CNS series and their analogues at the water supply systems, pressure boosting stations, and water lifting stations of the second or third lift.

The panel provides operation of the pumping unit in the following modes:

- manual (local)
- automatic, by signal from a feedback sensor
- automatic, with a preset performance value
- by remote signal

## REGULATION METHODS

The panel maintains automatically the preset parameters of the water supply system by the following regulation methods:

- cascade regulation: a certain number of pumps with fixed rotation speed is switched on/off to maintain operation pressure in the system
- cascade/frequency regulation: a single frequency inverter regulates the rotation speed of one pump and depending on the required performance a certain number of additional pumps with fixed rotation speed is switched on /off
- frequency regulation: a frequency inverter on each pump allows the panel to maintain the system parameters by independent regulation of each pump rotation speed

## MAIN FUNCTIONS

- Coordinated operation of pumps to maintain the water supply system parameters, increase pumping units efficiency, operational lifetime and reliability of the pumping system in general
- Energy saving by 10-40% in comparison with systems regulated by the valves
- Automatic start of the standby pump in the event of the main pump failure
- Uniform total running time provided by periodical switching between main and standby pumps
- Automatic switching to reserve power supply (option)
- Valves drives control (option). In automatic mode before switching on of appropriate pump the panel opens the suction valve and in a certain period of time opens the discharge valve
- User-configurable analog/digital input/output signal lines provides easy adaptation of the panel to a specific control system (see the options listed in the «Technical parameters» section)

## PUMP AND MOTOR PROTECTION FEATURES

- Pump shutdown at absence of water in the suction pipeline or a storage tank (dry running)
- Thermal and maximum current protection of the electric motor
- Pump shutdown at low power supply voltage quality, phase break, distortion, wrong sequence
- Motor shutdown by the temperature cut-off switch (option)
- Motor and pump parts temperature control (option, RT100/RTS sensor required)
- Pump shutdown in case of external accident
- Emergency shutdown at an excessive value of adjustable parameter
- Pumping station shutdown at rapid pressure drop in the suction pipeline (e.g. pipeline breakthrough)
- Limiting the number of starts per hour

## INTERFACE

Items located on the control panel door:

- operation mode selector of each pump (Manual -0-Automatic )
- buttons of electric motors manual start/stop
- «Network» , «In operation» pump indicators
- emergency indicator for each h pump
- voltmeter displaying values of supply voltage (option)
- ammeter displaying the current value consumed by each pump (option)

Controller display menu items:

- current value of the adjustable parameter and preset value
- status of connected sensors
- alarms and emergency signals
- total running time of each pump
- total number of starts for each motor
- failures log

## PANEL DESIGNATION

**HMS Control ST–25–3–KFS–AVR.T.A–IP54**

**HMS Control ST** - XXX - X - XXX - X.X.X - IP54

Panel series

Pump maximum rated current, A

Number of connected pumps

Regulation type and pump starting method (for unregulated pumps):
**K** – cascade regulation, **KS** – cascade regulation + soft start
**KF** – cascade-frequency regulation, **KFS** – cascade-frequency regulation + soft start
**F** – frequency regulation

Options (if applicable):
**AVR** – double power feed with automatic reserve switching device
**T** – Motor winding temperature sensor, **M** – Voltage surges protection
**V** – Voltmeter at the panel's input feed, **A** – Amperemeter for each pump
**C** – Connection by Modbus protocol
**1E, 2E** – valve drive control (a digit means number of operated drives)
**P** – User-configurable digital input/output

**IP54** – Panel casing protection

| TECHNICAL DATA | |
|---|---|
| Supply voltage | 3x380 V (+10%, -15%), 50 Hz, N, PE |
| Number of connected pumps | 1...4 |
| Motor rated current | 1...320 A |
| Motor power | up to 160 KW |
| Regulation method | cascade, cascade-frequency, frequency |
| Starting method for unregulated motors (without frequency inverters) | direct-on-line or soft start |
| Rated current for a valve drive (optional) | up to 9 A |
| Ambient temperature range | +1...+40°C |
| Air humidity | 80% at 25°C |
| Cables inlet | bottom |
| Analogous signal input (4…20 mA) | pressure sensor |

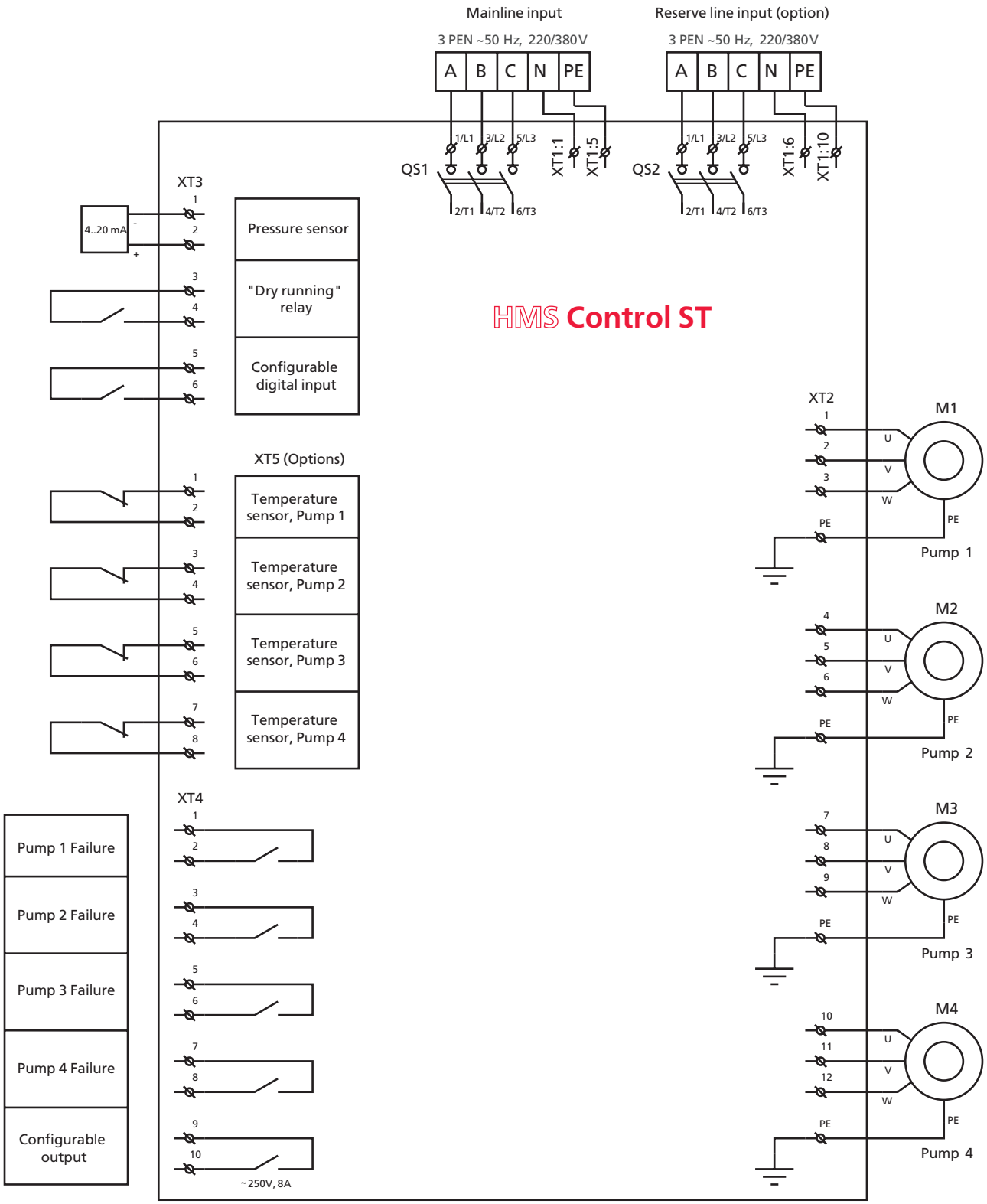
| Digital input signals | Digital output signals |
|---|---|
| **1. Dry running sensor**<br>**2. Built–in motor winding temperature sensor (option)**<br>**3. Configurable inputs:**<br>— Panel remote start/stop — Remote reset of alarm<br>— «External failure» — Liquid flow meter relay<br>— Customized function (option) | **1. «Pump failure» (for each pump)**<br>**2. Configurable outputs:**<br>— «General failure» — «Panel in operation»<br>— «Automatic mode» — «Dry running»<br>— Customized function |
| Sensors circuit voltage: 24 V, DC | NO-contact relay (250 V, 8 A) |

## STANDARD VERSIONS

| | DOL start | Soft start | Motor rated current, A | Motor rated power, kW |
|---|---|---|---|---|
| Panels with cascade regulation | HMS Control ST-4-...-K -IP54* | | 2.5...4 | 1.5 |
| | HMS Control ST-6-...-K -IP54 | | 4...6.3 | 2.2 |
| | HMS Control ST-10-...-K -IP54 | | 6...10 | 3; 4 |
| | HMS Control ST-14-...-K -IP54 | HMS Control ST-14-...-KS -IP54 | 9...14 | 5.5 |
| | HMS Control ST-18-...-K -IP54 | HMS Control ST-18-...-KS -IP54 | 13...18 | 7.5 |
| | HMS Control ST-23-...-K -IP54 | HMS Control ST-23-...-KS -IP54 | 17...23 | 9 |
| | | HMS Control ST-25-...-KS -IP54 | 20...25 | 11 |
| | | HMS Control ST-32-...-KS -IP54 | 24...32 | 15 |
| | | HMS Control ST-40-...-KS -IP54 | 30...40 | 18.5 |
| | | HMS Control ST-50-...-KS -IP54 | 37...50 | 22 |
| | | HMS Control ST-65-...-KS -IP54 | 48...65 | 30 |
| | | HMS Control ST-80-...-KS -IP54 | 63...80 | 37 |
| | | HMS Control ST-100-...-KS -IP54 | 80...100 | 45 |
| | | HMS Control ST-120-...-KS -IP54 | 95...120 | 55 |
| | | HMS Control ST-140-...-KS -IP54 | 110...140 | 75 |
| Panels with cascade–frequency regulation | HMS Control ST-4-...-KF -IP54 | | 2.5...4 | 1.5 |
| | HMS Control ST-6-...-KF -IP54 | | 4...6.3 | 2.2 |
| | HMS Control ST-10-...-KF -IP54 | | 6...10 | 3; 4 |
| | HMS Control ST-14-...-KF -IP54 | HMS Control ST-14-...-KFS -IP54 | 9...14 | 5.5 |
| | HMS Control ST-18-...-KF -IP54 | HMS Control ST-18-...-KFS -IP54 | 13...18 | 7.5 |
| | HMS Control ST-23-...-KF -IP54 | HMS Control ST-23-...-KFS -IP54 | 17...23 | 9 |
| | | HMS Control ST-25-...-KFS -IP54 | 20...25 | 11 |
| | | HMS Control ST-32-...-KFS -IP54 | 24...32 | 15 |
| | | HMS Control ST-40-...-KFS -IP54 | 30...40 | 18.5 |
| | | HMS Control ST-50-...-KFS -IP54 | 37...50 | 22 |
| | | HMS Control ST-65-...-KFS -IP54 | 48...65 | 30 |
| | | HMS Control ST-80-...-KFS -IP54 | 63...80 | 37 |
| | | HMS Control ST-100-...-KFS -IP54 | 80...100 | 45 |
| | | HMS Control ST-120-...-KFS -IP54 | 95...120 | 55 |
| | | HMS Control ST-140-...-KFS -IP54 | 110...140 | 75 |
| Panels with frequency regulation | HMS Control ST-4-...-F -IP54 | | 2.5...4 | 1.5 |
| | HMS Control ST-6-...-F -IP54 | | 4...6.3 | 2.2 |
| | HMS Control ST-10-...-F -IP54 | | 6...10 | 3; 4 |
| | HMS Control ST-14-...-F -IP54 | | 9...14 | 5.5 |
| | HMS Control ST-18-...-F -IP54 | | 13...18 | 7.5 |
| | HMS Control ST-23-...-F -IP54 | | 17...23 | 9 |
| | HMS Control ST-25-...-F -IP54 | | 20...25 | 11 |
| | HMS Control ST-32-...-F -IP54 | | 24...32 | 15 |
| | HMS Control ST-40-...-F -IP54 | | 30...40 | 18.5 |
| | HMS Control ST-50-...-F -IP54 | | 37...50 | 22 |
| | HMS Control ST-65-...-F -IP54 | | 48...65 | 30 |
| | HMS Control ST-80-...-F -IP54 | | 63...80 | 37 |
| | HMS Control ST-100-...-F -IP54 | | 80...100 | 45 |
| | HMS Control ST-120-...-F -IP54 | | 95...120 | 55 |
| | HMS Control ST-140-...-F -IP54 | | 110...140 | 75 |

* a digit in place of ellipsis (...) shows number of pumps to be connected to the panel

## CONNECTION SCHEME



# HMS CONTROL L3 SERIES
## CONTROL PANELS

### APPLICATION

The panels of the HMS Control L3 series are intended for control and protection of a single submersible borehole pump of the Ciris (CRS) and Fortis series, submersible drainage pump of the GNOM series, surface installation pump of the SM, D, K series and similar pumps in manual, automatic or remote control modes.


### MAIN FUNCTIONS

The panel is generally applied in automatic mode to control the pump for pressure retention in a water supply system or filling of reservoir and water supply from it using the level sensor or timer.

### APPLICABLE SENSORS

- Pressure relay
- Electric-contact manometer
- Floating sensors of level
- Electrode sensors of level

The panel provides a complex protection of electric motor, pump, and power supply system:

- pump switching off at overload/underload (protection from «dry running», without sensors)
- water level control in a borehole using the «dry running» sensor
- control of mains voltage
- phase rotation
- phase failure
- resistance check of the motor winding before a pump start
- motor winding temperature control (optional, sensor is required)
- fault control of connected sensors
- pump shutdown in case of external accident signal
- short circuit protection
- surge voltage protection.

### USER INTERFACE PANEL


Display items on the user interface panel:

- condition of connected sensors
- current consumption
- voltage on each phase
- total hours of pump operation (hours/minutes)
- total number of motor starts
- list of recent failures.

## PANEL DESIGNATION

**HMS Control L3–120–M.T–IP54**

**HMS Control L3** - XXX - X - X.X.X - IP54

Panel series

Pump maximum current, A

Pump starting method:

no mark – DOL starting
**P** – soft start

Available options:

**H** – Overvoltage protection
**M** – Surge voltage protection
**P** – Switch-disconnector at the panel cover
**T** – Motor winding temperature sensor

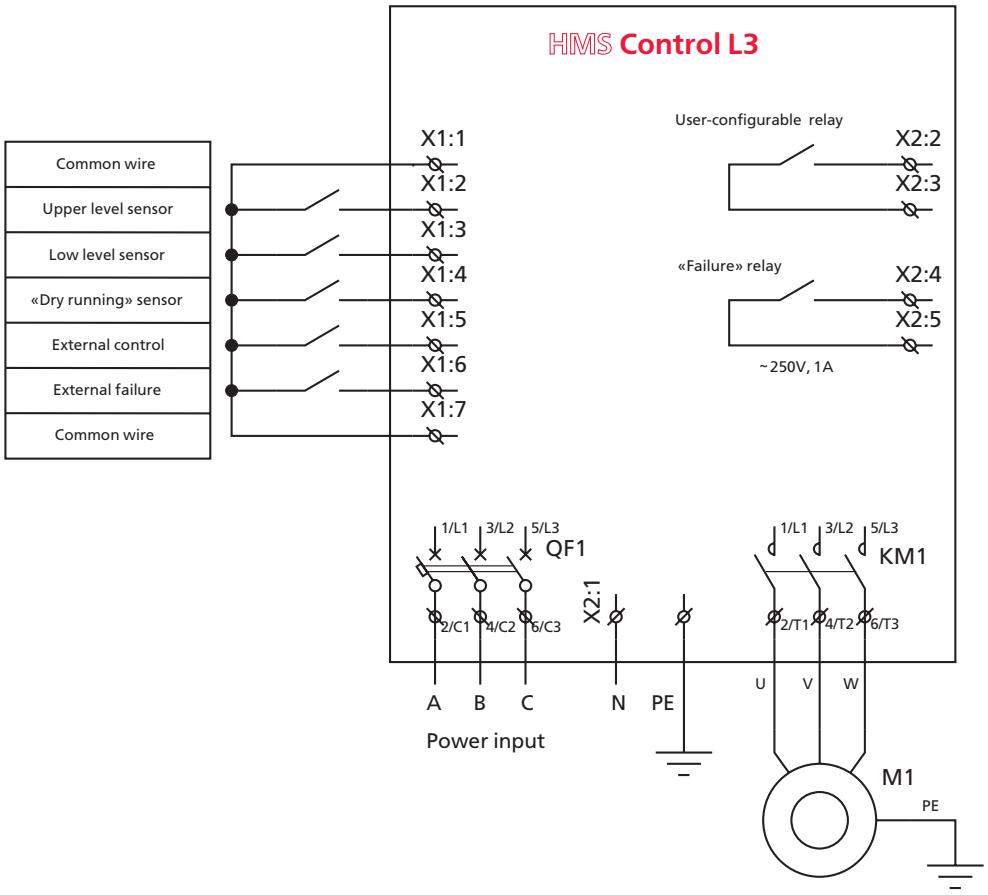
**IP54** – Panel casing protection

| TECHNICAL DATA | | |
|---|---|---|
| Supply voltage | 3x380 V (+10%, -15%), 50 Hz, N, PE | |
| Number of connected motors (pumps) | 1 | |
| Motor rated current | 1...300 A* | |
| Motor power | до 132 kW * | |
| Motor starting method | DOL or soft-start | |
| Ambient temperature range | +1...+40°C | -40...+40°C |
| Relative humidity | 80% at 25°C | 100% at 25°C |
| Casing protection | IP54 | |

| Input signals (connected sensors) | Output signals |
|---|---|
| — «Dry running» sensor<br>— Pressure relay or electric-contact manometer<br>— Upper level sensor<br>— Low level sensor<br>— Input «External control»<br>— Input «External Failure»<br>— PT100 / PTC temperature sensor** | — Relay «Failure»<br>— User-configurable relay:<br>— «Panel in operation» (power is on, no signals of failure)<br>— «Failure»<br>— «Motor is on»<br>— «External failure»<br>— «External control»<br>— «Upper level sensor activated»<br>— «Low level sensor activated»<br>— «Dry running» |
| Sensors circuit voltage: 15 V, DC | Relay commutation capacity: ~250 V, 1 A |

* Panels with power over 132 kW are available by request
** Option; shall be specified on the order placement

## CONNECTION SCHEME




## STANDARD VERSIONS

| Direct-on-line start | Soft start | Rated current, A | Motor power, kW* |
|---|---|---|---|
| HMS Control L3–25-IP54 | HMS Control L3–25-P-IP54 | 1…25 | 1.1…9 |
| HMS Control L3–40-IP54 | HMS Control L3–40-P-IP54 | 20…40 | 11...17 |
| HMS Control L3–60-IP54 | HMS Control L3–60-P-IP54 | 35…60 | 18.5…22 |
| HMS Control L3–80-IP54 | HMS Control L3–80-P-IP54 | 55…80 | 27...37 |
| HMS Control L3–100-IP54 | HMS Control L3–100-P-IP54 | 75…100 | 45 |
| HMS Control L3–120-IP54 | HMS Control L3–120-P-IP54 | 95…120 | 50, 55 |
| HMS Control L3–160-IP54 | HMS Control L3–160-P-IP54 | 115…160 | 65, 75 |
| HMS Control L3–200-IP54 | HMS Control L3–200-P-IP54 | 155…200 | 90 |
| HMS Control L3–250-IP54 | HMS Control L3–250-P-IP54 | 195…250 | 110 |
| HMS Control L3–300-IP54 | HMS Control L3–300-P-IP54 | 245…300 | 132 |

Available options:

**H** - overvoltage protection: the panel is switched off the mainline

**M** - surge protection (lightning and connection surges)

**P** - switch-disconnector at the panel cover

**T** - motor winding temperature sensor (PT100/PTC)

* Approximate values are given. Some pump units may have different rated current values at given power. Please refer the manual.

# HMS CONTROL L4 SERIES
## CONTROL PANELS

### APPLICATION

The HMS Control L4 panels are intended for protection of the electric motors driving single borehole, submersibe, or surface installation pump (overhung, double suction, etc.).

- Water supply form borehole wells
- Level control in storage tanks
- Pressure maintenance in water supply systems
- Dewatering systems, drainage of reservoirs, open pits, etc.

### FEATURES

- Quick mode selection and simple adjustment («Quick start»)
- Applicable sensors types: contact, electrode, analog 4..20 / 0..20 mA
- A wide range of panels for up to 132 kW electric motors (panels over 132 kW are optionally available)
- Pump compartment burglar alarm
- RS-485/RS-232 interface, Modbus RTU protocol
- GSM/GPRS modem or 433 MHz radio band data transmission (option)
- Pump control and status reports by by Short Messaging Service (SMS) available as option

### PROTECTION

- Short circuit
- Electric motor underload / overload
- Dry running, including sensor-free protection
- Motor winding insulation pre-start check
- Phase sequence monitoring for correct rotation direction
- Phase break, phase distortion by current and voltage
- Number of pump starts per hour
- Voltage surge/lightning protection (option)

### PARAMETERS INDICATION

- Average current and voltage on each phase
- Sensors status
- Pressure in discharge pipeline or water level in storage tank (analog sensor is required)
- Motor winding temperature (sensor is required)
- Alarm log (with time and equipment status recording)
- Number of starts and total operation time

**All parameters can be transmitted via RS–485 (RS–232), Modbus RTU protocol.**

### CONTROL MODES

- Manual
- Automatic by commands from pressure/level sensor or timer
- Remote by RS-485/RS-232 or digital inputs

## PANEL DESIGNATION

**HMS Control L4–120–SS–M.GPRS–IP54** — **HMS Control L4 – XXX – SS – X.X.X – IP54**

Panel series

Max rated current, A

Starting method: (Direct-on-line – no mark; **SS** – soft start

Options:

**P** – Main switch/disconnector
**M** – Surge/ lightning protection
**GPRS** – Data transmission via GSM cell network
**RDM** – 433 MHz radio band data transmission
**SMS** – Control and status reports by Short Messaging Service (SMS)
**2T** – Pump bearings temperature control (2 sensors)
**4T** – Pump and motor bearings temperature control (4 sensors)

**IP54** – Panel casing protection

## TECHNICAL DATA

| | |
|---|---|
| Supply voltage | ~3x380V / 50 Hz, N, PE |
| Number of connected pumps | 1 |
| Starting method | soft / direct-on-line |
| Sensors | - digital (contact or electrode) - 2 units<br>- analog (4..20 mA, 0..20 mA) - 1 unit<br>- «dry running» - 2 units<br>- temperature (thermoswitch, PTC or PT100) - 1 unit (up to 5) |
| Relay output (~ 250V/1A) | 3 |
| Ambient conditions | indoor installation (+1…+40°C, relative humidity 80% at 25°C) |
| | outdoor installation (-40…+40°C, relative humidity 100% at 25°C) |

## STANDARD VERSIONS

| Direct-on-line start | Soft start | Rated current, A | Motor power, kW* |
|---|---|---|---|
| HMS Control L4-25-IP54 | HMS Control L4-25-P-IP54 | 1…25 | 1.1…9 |
| HMS Control L4-40-IP54 | HMS Control L4-40-P-IP54 | 20…40 | 11...17 |
| HMS Control L4-60-IP54 | HMS Control L4-60-P-IP54 | 35…60 | 18.5…22 |
| HMS Control L4-80-IP54 | HMS Control L4-80-P-IP54 | 55…80 | 27...37 |
| HMS Control L4-100-IP54 | HMS Control L4-100-P-IP54 | 75…100 | 45 |
| HMS Control L4-120-IP54 | HMS Control L4-120-P-IP54 | 95…120 | 50, 55 |
| HMS Control L4-160-IP54 | HMS Control L4-160-P-IP54 | 115…160 | 65, 75 |
| HMS Control L4-200-IP54 | HMS Control L4-200-P-IP54 | 155…200 | 90 |
| HMS Control L4-250-IP54 | HMS Control L4-250-P-IP54 | 195…250 | 110 |
| | HMS Control L4-300-P-IP54 | 240…300 | 132 |

* Approximate values are given. Some pump units may have different rated current values at given power. Please refer the manual.

# LOTSMAN+ SERIES
## CONTROL PANELS

### APPLICATION

The control panels of the «Lotsman+» series are intended for control and protection of any mechanisms and equipment comprising three-phase asynchronous electric motors, including the pumping units.

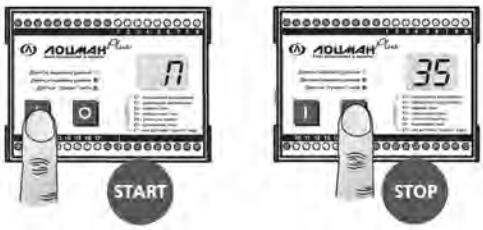
The operation mode parameters of the panel are easily set within a minute without any instruments for adjustment. Both automatic and manual operation modes are available.

### FEATURES

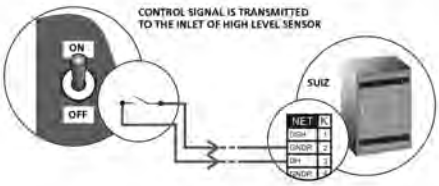
- Operation modes: manual /automatic / external signal / timer / sensor
- Operaton with electric-contact manometer (ECM) or level contact sensors
- Setting of maximum/minimum protection current (depending on applicable motor): 1...250 A
- Motor switching off at preset current increase /decrease within 1-15 seconds
- Motor start lock at contact-to-frame fault
- Panel lock at phase brake
- Motor switching off at phase shift
- Start current measurement lock for 1...10 seconds
- Motor switch off at voltage rise /drop within 15 seconds
- Electric motor operation current indicator
- Motor restart after protection event in 1-15 seconds
- Sensors status indicator
- Sound and LED indication of operation modes and failures

| TECHNICAL DATA | |
|---|---|
| Number of connected sensors | 3 |
| Number of mainlines | 1 |
| Actuation time, s | 1-15 |
| Delay of restart after emergency situation shutdown, min | 1-15 |
| Min/max protection current, A (depend on the panel version) | 1-250 |
| Mainline rated voltage, V | ~380 (+10...-15%) |
| Panel operation voltage, V | ~220 |
| Sensor circuit voltage, V | =15 |
| Current frequency, Hz | 50+2 |
| Max consumed power, VA | 22 |
| Casing protection | IP20 (IP31) |
| Operating temperature, °C | -40 ... + 40 |

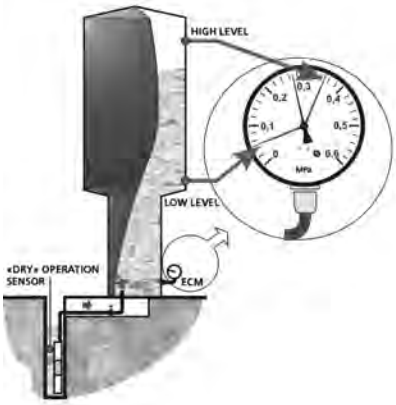
MANUAL CONTROL



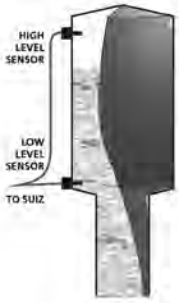

OPERATION BY EXTERNAL SIGNAL



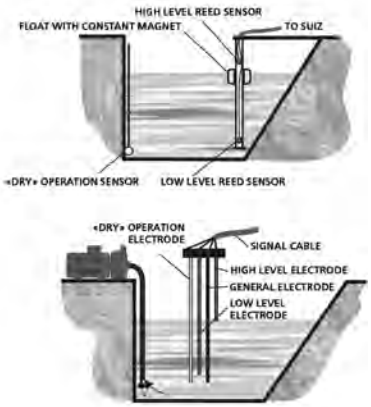

OPERATION USING ELECTRIC CONTACT MANOMETER



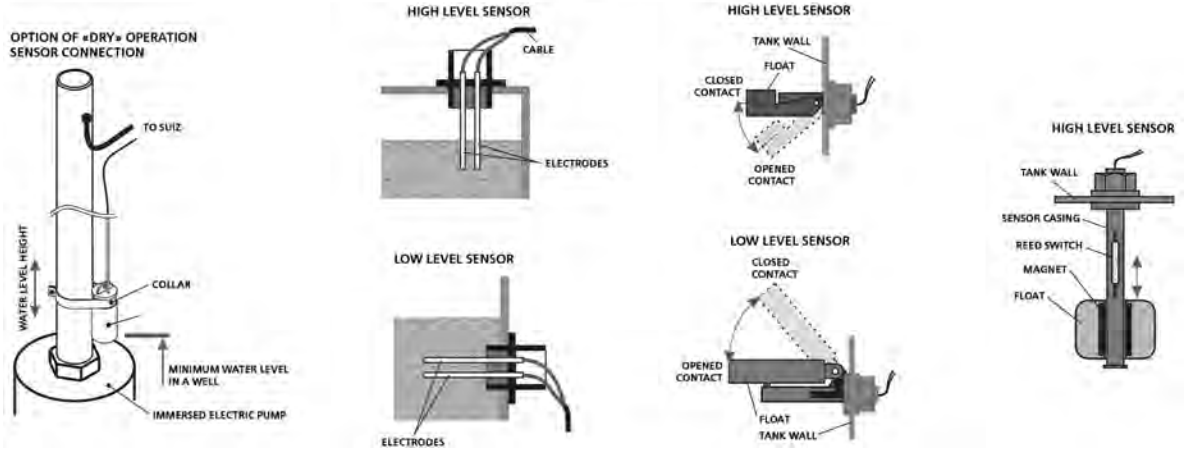

OPERATION USING LEVEL SENSORS




DRAINAGE OPTIONS




SENSORS APPLICATION




## VERSIONS

| | Electric motor current, A | Overall dimensions, mm | Weight, kg |
|---|---|---|---|
| «Lotsman+» -20 | 0 - 20.0 | 300x400x160 | 8.0 |
| «Lotsman+» -40 | 2.0 - 40.0 | | |
| «Lotsman+» -80 | 4.0 - 80.0 | | |
| «Lotsman+» -100 | 14.0 - 110.0 | 400x500x220 | 16.0 |
| «Lotsman+» -160 | 25.0 - 160.0 | 500x650x220 | 22.0 |
| «Lotsman+» -250 | 30.0 - 250.0 | | |

# SUZ SERIES
## CONTROL PANELS

### APPLICATION

The control panels of the SUZ series are generally applied for manual, remote or automatic operation (by water level or pressure sensors in the water supply or drainage systems) of the three-phase electric motors in submersible pumps.

The panel provides protection from overload by current, short circuit, open-phase mode and «dry running».

### OPERATION MODES

- Automatic: by signals of the level sensors installed in a storage tank, electric contact manometer (contacts type 3, 4, 5, 6) or a pressure switch
- Remote: by a double-wire line (up to 2 km)
- Manual: as on/off switch

The panel is supplied with a built-in current overload simulator to adjust the panel to applicable electric motor without any auxiliary instruments. For a period of hydraulic impact an adjustable interlock of the panel is possible.

A signal of emergency situation may be transferred outside the unit.

All control circuits are galvanically separated.

### FEATURES

- Motor switch off at any phase break
- Motor switch off at overload by current (in one or three phases)

- Motor switch off at «dry running» (absence of water in the well)
- Alarm light for current overload, open-phase, «dry running», voltage drop, indication of water level using the sensors in tank/reservoir
- Automatic restart of operation mode after emergency event (start delay is adjustable)
- Indication of electric motor consumed current (one phase only)

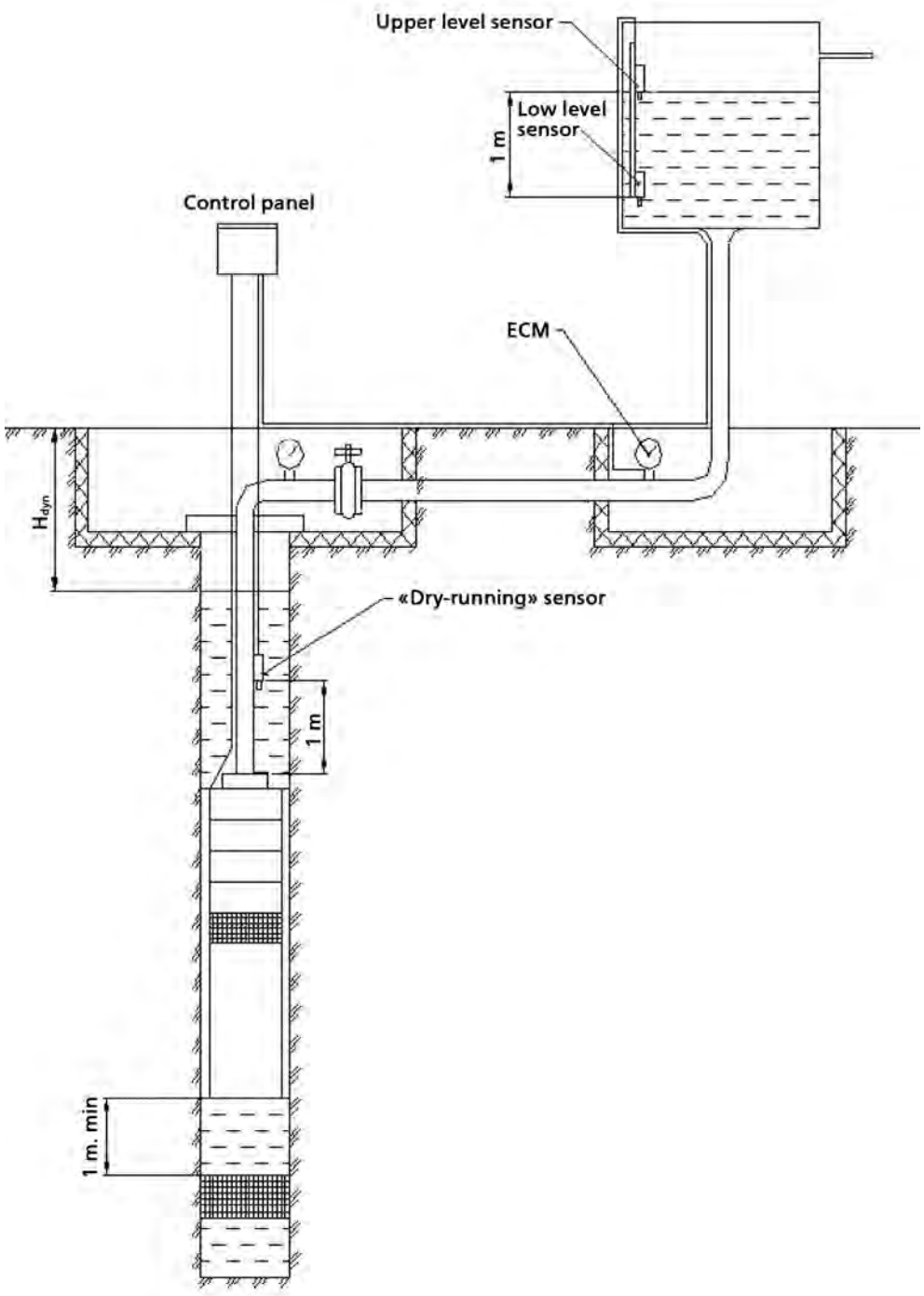
The panel is for indoor use only without artificially controlled environmental conditions:

- ambient temperature: - 45 °C to + 40 °C
- relative humidity: up to 98% at + 25 °C
- altitude: up to 1000 m above sea level
- environment shall be non-explosive, without current-conducting dust, agressive gases and vapors.

### TECHNICAL DATA

| | SUZ-10<br>1-3 kW | SUZ-40<br>3-13 kW | SUZ-100<br>13-45 kW | SUZ-200<br>45-90 kW |
|---|---|---|---|---|
| Mainline rated voltage, V | ~3x380 | ~3x380 | ~3x380 | ~3x380 |
| Power of connected electric motor, kW | 1-3 | 3-13 | 13-45 | 45-90 |
| Mainline max current, A | 10 | 40 | 100 | 200 |
| Panel operation voltage, V | 220±22 | 220±22 | 220±22 | 220±22 |
| Sensors circuit voltage, V | 12 | 12 | 12 | 12 |
| Overall dimensions, mm | 320x330x160 | 320x330x160 | 505x460x250 | 710x680x320 |
| Weight, kg | 10 | 10 | 24 | 55 |

## CONNECTION SCHEME



# REQUEST FOR QUOTATION (ORDER FORM)
## Pumps

Please forward the completed order form to **HYDROMASHSERVICE (HMS Group)**:
12, Aviakonstruktora Mikoyana str., Moscow, 125252, Russia. Tel: + 7 (495) 664-8171. Fax: +7 (495) 664-8172
E-mail: hydro@hms.ru www.hms.biz

| № | Parameter | Units | Customer requirements |
|---|---|---|---|
| **1** | **Functional** | | |
| 1.1 | Capacity | $m^3/h$ | |
| 1.2 | Head | m | |
| 1.3 | Maximum discharge pressure | bar | |
| 1.4 | NPSHR | m | |
| **2** | **Pumped media** | | |
| 2.1 | Pumped liquid name and description | | |
| 2.2 | Solids volume concentration | % | |
| 2.3 | pH factor | | |
| 2.4 | Total mineralization | mg/l | |
| 2.5 | Solids size (abrasive/non-abrasive) | mm | |
| 2.6 | Temperature of pumped liquid | °C | |
| 2.7 | Cinematic viscosity at operation temperature | cSт | |
| 2.8 | Density at operation temperature | $kg/m^3$ | |
| 2.9 | Absolute pressure of saturated steam | bar | |
| **3** | **Materials of main components** | | |
| | Casing/Cover<br>Impeller<br>Shaft | | |
| **4** | **Shaft sealing** | | |
| 4.1 | Single/double gland sealing | | |
| 4.2 | Single/double mechanical sealing | | |
| **5** | **SITE INSTALLATION CONDITIONS** | | |
| 5.1 | Outside temperature | °C | |
| 5.2 | Explosion proof demand | | |
| 5.3 | Humidity | % | |
| **6** | **SENSORS** | | |
| | Bearing housing vibration | yes/no | |
| | Bearing housing temperature | yes/no | |
| **7** | **DRIVE** | | |
| 7.1 | Voltage, number of phases | | |
| 7.2 | Frequency | | |
| **8** | **Appendixes:** (installation scheme, other requirements) | | |
| | | | |
| | | | |

Name _____ Position _____ Company _____
Address _____
Phone _____ Fax _____

# REQUEST FOR QUOTATION (ORDER FORM)
# Pump Control Panel. Type: HMS CONTROL ST

Please forward the completed order form to **HYDROMASHSERVICE (HMS Group)**:
12, Aviakonstruktora Mikoyana str., Moscow, 125252, Russia. Tel: + 7 (495) 664-8171. Fax: +7 (495) 664-8172
E-mail: hydro@hms.ru www.hms.biz

| **Customer data** | | | |
|---|---|---|---|
| | | Date | |
| Company | | | |
| Address | | | |
| Scope of activity | | | |
| Project name and site | | | |
| **Contact details** | | | |
| Name | | | |
| Position | | | |
| Phone/Fax | | E-mail | |

**System data**

| | | | | | |
|---|---|---|---|---|---|
| | Pressure boosting | | Level maintenance | | Pressure differential maintenance |
| | Liquid temperature maintenance | | Flow rate maintenance | | |
| | Remote control | | | | |
| Other: | | | | | |

**Pump data**

| | | | | | |
|---|---|---|---|---|---|
| Number of pumps | | | | | |
| Pump brand name/Series | | | | Manufacturer | |
| Supply voltage, V | | | Motor type | | |
| Motor rated power, kW | | | Rated current, A | | |
| **Pumping system control** | | **Cascade** | | **Cascade–Frequency** | **Frequency** |
| | Starting method for motors without frequency control | | | | |
| | | Direct-on-line (DOL) | | Soft starting | |

| **Additional sensors** | | | |
|---|---|---|---|
| Motor winding temperature | | Type: | Quantity: |
| Motor bearing temperature | | Type: | Quantity: |
| Pump bearing temperature | | Type: | Quantity: |
| Vibration | | Type: | Quantity: |

**Additional requirements**

| | | | | | |
|---|---|---|---|---|---|
| | Automatic switch to backup power supply | | | | Lightning protection |
| | Voltmeter on input | | Ammeters for each pump | | |
| | Additional inputs/outputs | Digital: / pcs | | Functions | |
| | | Analog: / psc | | Functions | |
| | Valve control connection | Number of valves: psc | | | |
| Valve operation description: | | | | | |
| Panel Communication | | Modbus RTU | | Ethernet | |

**Special requirements**

# REQUEST FOR QUOTATION (ORDER FORM)
# Pump Control Panel. Types: HMS CONTROL L3 or HMS CONTROL L4

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E-mail: hydro@hms.ru www.hms.biz

| **Type of Control Panel** | | HMS Control L3 | | HMS Control L4 |
|---|---|---|---|---|

| **Customer data** | | Date | |
|---|---|---|---|
| Company | | | |
| Address | | | |
| Scope of activity | | | |
| Project name and site | | | |
| **Contact details** | | | |
| Name | | | |
| Position | | | |
| Phone/Fax | | E-mail | |

**System data**

| | | | | | |
|---|---|---|---|---|---|
| **Application** | | Pressure boosting with pressure switch | | Pumping in / filling | |
| | | Pumping out / emptying | | Remote control | |
| | Other: | | | | |
| **Sensors** | | Pressure relay | | Floating | |
| | | Electric-contact manometer | | Electrode | |
| | | Analog 4..20 mA (HMS Control L4 only) | | | |

**Pump data**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Pump type** | | Borehole | | Sewage | | Other |
| Pump quantity | | | | | | |
| Pump brand name/Series | | | Manufacturer: | | | |
| Supply voltage, V | | | Motor type: | | | |
| Motor rated power, kW | | | Rated current, A | | | |
| **Built–in temperature sensor** | | | | PT100 | | Other |
| **Motor start** | | Direct-on-line | | Soft starting | | |

**Additional requirements**

| | | | | | |
|---|---|---|---|---|---|
| | Surge protection | | Lightning protection | | Main switch |
| | Modbus RTU interface support (HMS Control L4 only) | | | | |

| | | | |
|---|---|---|---|
| **Wireless control & Data transmission** | | GPRS-channel of cell network | (HMS Control L4 only) |
| | | 433 MHz radio band data transmission | |
| | | control and status reports by SMS | |
| **Pump bearings temperature control** | | 2 sensors | |
| | | 4 sensors | |

| | | |
|---|---|---|
| **Panel casing protection** | | IP54 |

| | | |
|---|---|---|
| **Ambient conditions** | | indoor installation (+1…+40°C, relative humidity 80% at 25°C) |
| | | outdoor installation (-40…+40°C, relative humidity 100% at 25°C) |

**Special requirements**

| |
|---|
| |

## NOTES

**HYDROMASHSERVICE is an integrated commercial and engineering company of HMS Group**

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