## Product profile

The third-generation KQDP/KQDQ light vertical multi-stage centrifugal pump is based on the concept of energy saving, environmental protection, safety and reliability, adopting a new industrial and hydraulic design method, and the latest independent research and development of a new generation of products. The product is suitable for different temperature, flow and pressure ranges. It can transport various media from tap water to industrial liquid. It is widely used in water supply, industrial pressurization, industrial liquid transportation, heating supply, irrigation and water treatment, The KQDQ can also be used in the fields of beverages, medicine and etc.. KQDP is suitable for non-corrosive liquids and KQDQ is suitable for mildly corrosive liquids.

This product complies with GB/T 5657-2013 "Technical Conditions for Centrifugal Pumps (III)".

## Product feature

**High efficiency, energy saving, green and environmental protection:** the efficiency index has reached the international leading level, and the energy efficiency index has reached MEI $\geqslant$ 0.7.

**Compact, safe and reliable:** under the same flow head parameters, the pump has lower height, less vibration, lower noise, smaller footprint and lighter weight.

**Durable and easy to repair:** It adopts special configuration of cartridge mechanical seal to ensure smooth operation and no leakage in slight vibration and impact environment. At the same time, the machine seal position is designed with sufficient disassembly and assembly space, and the maintenance is convenient. When the machine seal is replaced, there is no need to disassemble the pump.

## Typical application

Water supply: secondary water supply for high-rise buildings, filtration, transportation, supercharged water
Industrial pressure: cleaning system, process water system, high pressure flushing system, fire fighting system
Industrial liquid transport: boiler feed water, condensing system, machine tool components
Heating supply: air conditioning system
Irrigation: farmland irrigation, sprinkler irrigation, drip irrigation
Water treatment: swimming pool, distillation system, etc.

## Working conditions

Liquid: Clean, thin, non-flammable, explosive and free of particles and fibers or liquids with physicochemical properties similar to water
Liquid temperature: -20 °C to +105 °C
Ambient temperature: max. +40°C
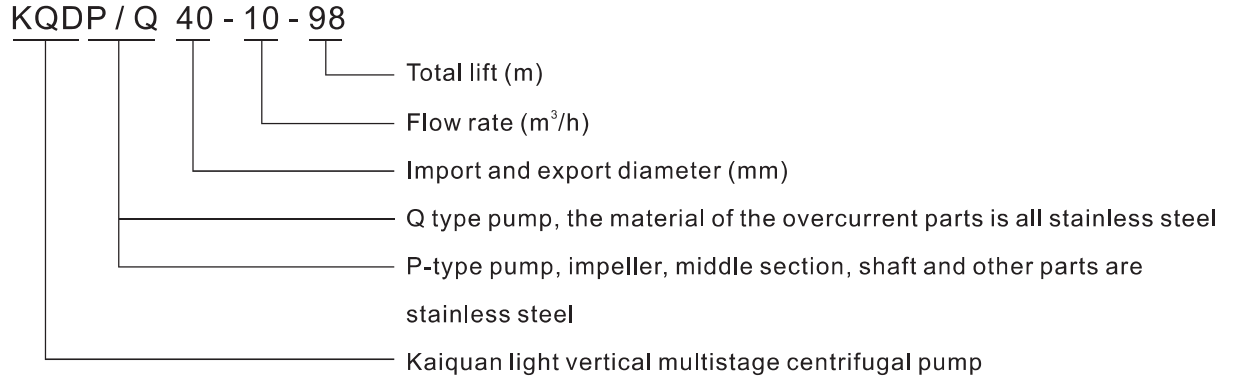Altitude: height less than 1000m
Maximum operating pressure: KQDP, KQDQ type suction pressure + pump maximum pressure $\leqslant$ 2.5Mpa and inlet pressure $\leqslant$ 1.0Mpa
Note: Please consult the technical department of the company if the temperature is higher than 70 °C or other special conditions.

需翻译

前盖板

叶片

后盖板

## Specification

KQDP / Q 40 - 10 - 98

- Total lift (m)
- Flow rate (m³/h)
- Import and export diameter (mm)
- Q type pump, the material of the overcurrent parts is all stainless steel
- P-type pump, impeller, middle section, shaft and other parts are stainless steel
- Kaiquan light vertical multistage centrifugal pump

### Motor

Fully enclosed self-cooling squirrel-cage high-efficiency three-phase asynchronous motor, which is 2%~10% more efficient than ordinary motors. Motor bearings are equipped with SKF or NSK bearings.

Standard voltage: 3×380-415V Frequency: 50Hz

Protection level: Ip55

Insulation class: F

Installation form: B14 or V1

Note: Outdoor type, plateau type, explosion-proof motor, thermal protection and other special motor, the order will be explained separately

The matching motor is the national standard energy efficiency level 2 or 3, and is configured according to customer requirements.

### Suction and ischarge flange

The KQDP32 and 40 are equipped with an oval flange as standard. The factory is equipped with a pair of cast iron elliptical flanges (thread joints) and optional round flange connection.

KQDQ32 comes standard with external pipe thread connection, optional bayonet type and flange connection.

The KQDQ40 comes standard with a round flange and an optional bayonet coupling.

KQDP/Q50 and 65 are equipped with round flanges, of which KQDQ50 can be connected by bayonet.

Special note: 1. Elliptical flange connection withstand voltage rating of 1.6Mpa and below, greater than 1.6Mpa, please use round flange connection;

2. All standard flanges are designed according to GB/T17241.6-2008, and the pressure rating is PN 2.5 Mpa;

3. Paired flanges and pipe clamps for pipe connection, which must be ordered separately.

### Maximum suction height

When using the user, the influence of various factors on the use should be considered. The maximum suction height H should be lower than the calculated value (negative value is reversed). Otherwise, the pump will not work properly.

$H = Pb \times 10.2 - NPSH - Hf - Hv - Hs$

Pb = local atmospheric pressure bar (sea level 1 bar) In a closed system, Pb is the system pressure bar

NPSH = NPSH m Hf = inlet line loss m

Hv = liquid saturated vapor pressure m Hs = safety margin $\geqslant 0.5$ m

Example: Assume atmospheric pressure Pb=1bar, pump NPSH NPSH=2m, suction line loss Hf=2.2m

(1) When the liquid temperature is 20 °C, the saturated vapor pressure Hv = 0.23 m

$H = 1 \times 10.2 - 2 - 2.2 - 0.23 - 0.5 = 5.27m$ (the larger the positive value, the less likely it is to cavitation)

(2) When the liquid temperature is 85 °C, the saturated vapor pressure Hv = 5.89 m

$H = 1 \times 10.2 - 2 - 2.2 - 5.89 - 0.5 = -0.39m$ (negative value means the pump needs to be poured, the inlet is pressurized)

The temperature of the liquid delivered by the pump is inconsistent. When the other conditions of use of the pump are the same, the suction height is also different.

| Water physical properties | | | |
|---|---|---|---|
| water temperature T/°C | Saturated vapor pressure Hv/m | Water temperature T/°C | saturated vapor pressure Hv/m |
| 5 | 0.09 | 90 | 7.15 |
| 10 | 0.13 | 95 | 8.62 |
| 20 | 0.23 | 100 | 10.33 |
| 30 | 0.43 | 105 | 12.32 |
| 40 | 0.75 | 110 | 14.61 |
| 50 | 1.26 | 115 | 17.24 |
| 60 | 2.03 | 120 | 20.25 |
| 70 | 3.18 | 125 | 23.67 |
| 80 | 4.83 | 130 | 27.55 |
| 85 | 5.89 | 135 | 31.92 |
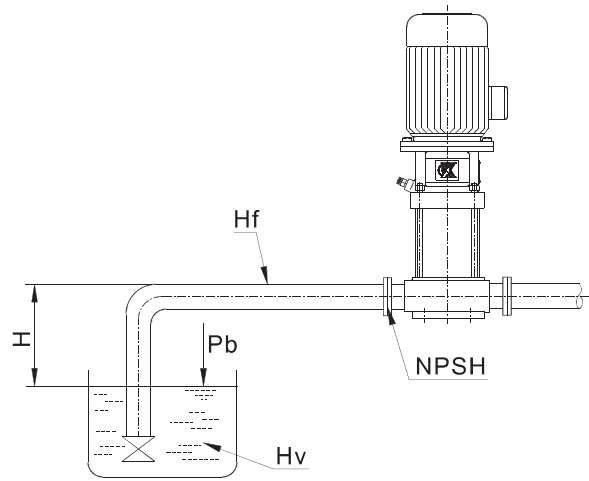
## Maximum ambient temperature and altitude

When the pump is operated under ambient temperature higher than 40 °C or altitude more than 1000 m, the motor output power P2 will be reduced due to low air density and poor cooling effect. Therefore, the power of the pump with the motor needs to be increased (see the following figure for details).

Influence of temperature and altitude on motor output power
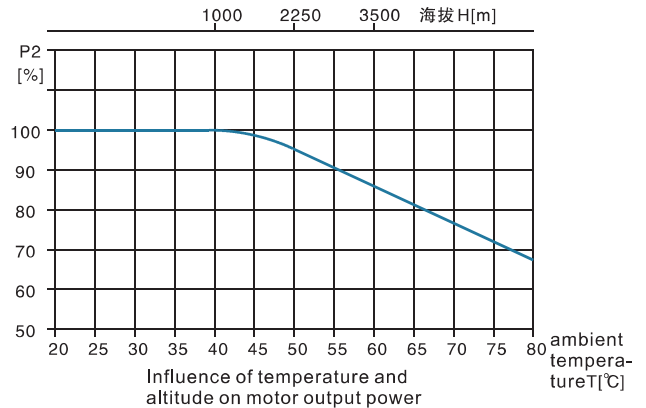
## Shaft seal

Mechanical seal: Cartridge-style maintenance-free mechanical seal for easy maintenance
Basic configuration: The rubber material is fluoro rubber, and the dynamic and static rings are made of hard alloy. The graphite is resistant to slight vibration and impact, which is more reliable.

KQDP、KQDQ

## Material

KQDQ type overcurrent parts are all 304, motor bracket is QT
KQDP type impeller, middle section over-current part is 304, inlet and outlet section, bracket is HT
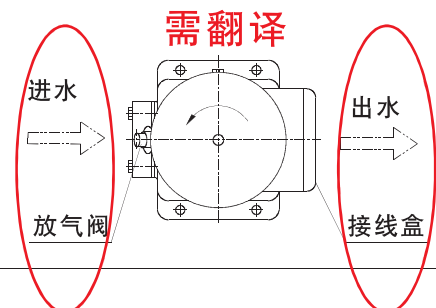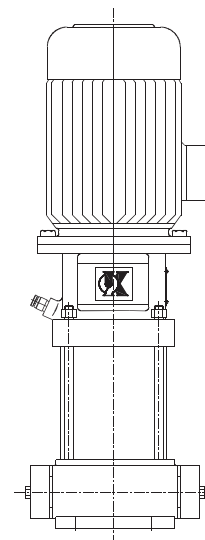
## Water pump steering

KQDP and KQDQ are rotated counterclockwise from the driver side (see the figure on the right)
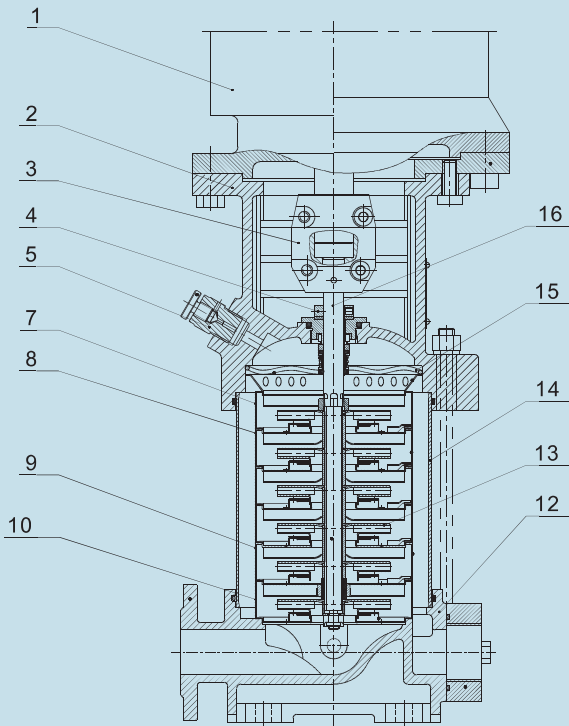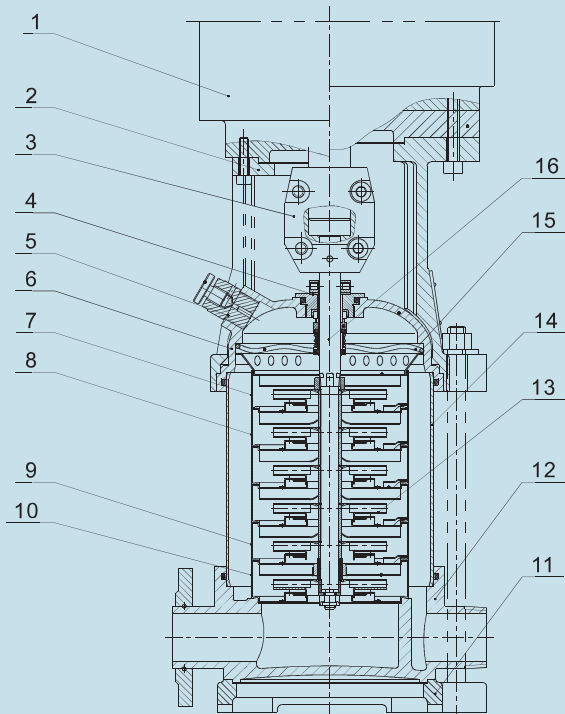
## Motor junction box

KQDP, KQDQ See from the motor end, the junction box is on the water outlet side
Remark: The installation position of the junction box can be replaced. If there is any demand, please indicate in the order information.

需翻译

进水　出水
放气阀　接线盒

## Structure chart

### Structure chart
### KQDP32-4、32-5



### KQDQ32-4、32-5



### Materiallist
### KQDP/Q32-4、32-5

| No. | Name | Material | AISI/ASTM |
|---|---|---|---|
| 1 | Motor | | |
| 2 | Support | Castiron | ASTM25B |
| 3 | Clamped coupling | Powder metallurgy | |
| 4 | Modular mechanical seals | SIC/C/FPM | |
| 5 | Deflation valve | | |
| 7 | Discharge middle-stage | Stainless steel | AISI304 |
| 8 | Middle-stage | Stainless steel | AISI304 |
| 9 | Bearing middle-stage | Stainless steel | AISI304 |
| 10 | Inflow middle-stage | Stainless steel | AISI304 |
| 13 | Impeller | Stainless steel | AISI304 |
| 14 | Outer shell | Stainless steel | AISI304 |
| 15 | Elastic ring | Stainless steel | AISI304 |
| 16 | Shaft | Stainless steel | AISI304 |
| KQDP | | | |
| 12 | Inflow discharge stage | Cast iron | ASTM25B |
| KQDQ | | | |
| 6 | Pump cover | Stainless steel | AISI304 |
| 11 | Baseboard | Cast iron | ASTM25B |
| 12 | Inflow discharge stage | Stainless steel | AISI304 |

## Performance curve



KQDP/KQDQ32–4(50Hz)
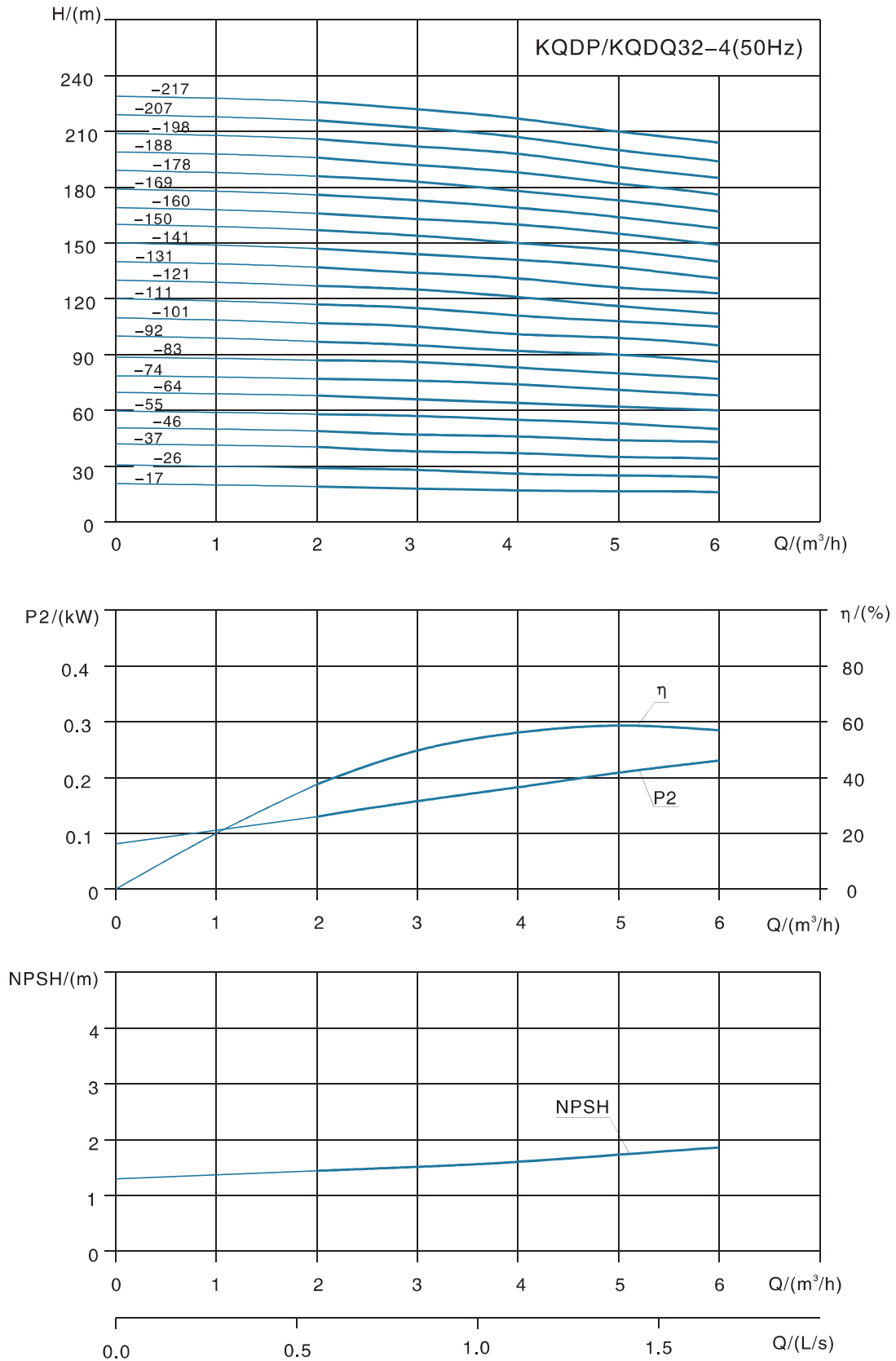
| No. | Type | Motor power (kW) | Q (m³/h) | 2 | 3 | 4 | 5 | 6 |
|-----|------|------------------|----------|---|---|---|---|---|
| | | | KQDP/KQDQ32-4 Performance table | | | | | |
| 1 | 32-4-17 | 0.55 | | 19 | 18 | 17 | 16.5 | 16 |
| 2 | 32-4-26 | 0.75 | | 29 | 28 | 26 | 25 | 23 |
| 3 | 32-4-37 | 1.1 | | 39 | 38 | 37 | 35 | 34 |
| 4 | 32-4-46 | | | 49 | 47 | 46 | 44 | 42 |
| 5 | 32-4-55 | 1.5 | | 58 | 57 | 55 | 53 | 50 |
| 6 | 32-4-64 | | | 68 | 66 | 64 | 62 | 59 |
| 7 | 32-4-74 | 2.2 | | 77 | 76 | 74 | 71 | 68 |
| 8 | 32-4-83 | | | 87 | 86 | 83 | 80 | 75 |
| 9 | 32-4-92 | | | 97 | 95 | 92 | 90 | 86 |
| 10 | 32-4-101 | 3 | H (m) | 107 | 105 | 101 | 99 | 95 |
| 11 | 32-4-111 | | | 117 | 115 | 111 | 108 | 105 |
| 12 | 32-4-121 | | | 127 | 125 | 121 | 117 | 114 |
| 13 | 32-4-131 | 4 | | 137 | 134 | 131 | 126 | 123 |
| 14 | 32-4-141 | | | 147 | 144 | 141 | 137 | 131 |
| 15 | 32-4-150 | | | 157 | 154 | 150 | 146 | 140 |
| 16 | 32-4-160 | | | 166 | 163 | 160 | 155 | 149 |
| 17 | 32-4-169 | 5.5 | | 176 | 173 | 169 | 164 | 158 |
| 18 | 32-4-178 | | | 186 | 183 | 178 | 173 | 167 |
| 19 | 32-4-188 | | | 196 | 192 | 188 | 182 | 176 |
| 20 | 32-4-198 | | | 206 | 202 | 198 | 191 | 185 |
| 21 | 32-4-207 | | | 216 | 212 | 207 | 200 | 194 |
| 22 | 32-4-217 | | | 226 | 222 | 217 | 210 | 202 |

## Installation drawing

### KQDP32-4
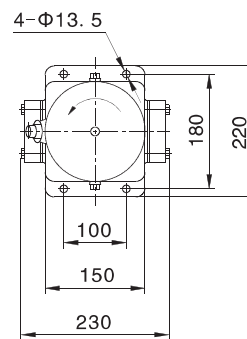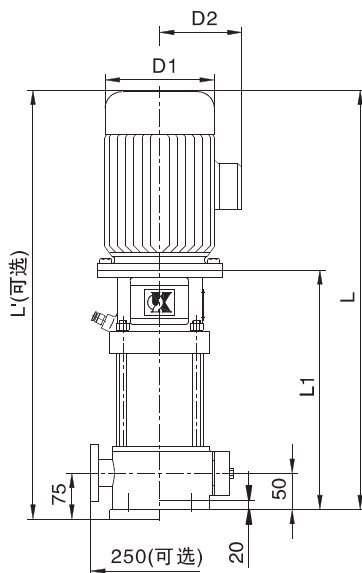


Dimensions for connection of inlet and outlet oval flanges standard configuration PN1.6Mpa

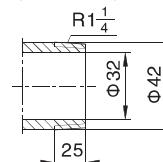Dimensions of inlet and outlet flanges (optional) GB/T17241.6-2008 PN2.5Mpa
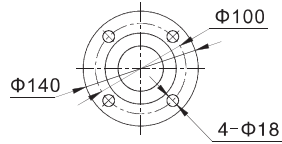
KQ PUMPS
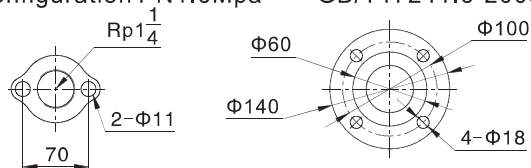
| No. | Type | L1 | L | L' | D1 | D2 | Weight |
|-----|------|-----|-----|-----|-----|-----|--------|
| | Style | (mm) | (mm) | (mm) | (mm) | (mm) | (kg) |
| 1 | 32–4–17 | 283 | 503 | 528 | 135 | 86 | 21 |
| 2 | 32–4–26 | 310 | 565 | 590 | | | 25 |
| 3 | 32–4–37 | 337 | 592 | 617 | 148 | 96 | 26 |
| 4 | 32–4–46 | 364 | 619 | 644 | | | 27 |
| 5 | 32–4–55 | 391 | 691 | 716 | | | 32 |
| 6 | 32–4–64 | 418 | 718 | 743 | | | 33 |
| 7 | 32–4–74 | 445 | 745 | 770 | 166 | 115 | 34 |
| 8 | 32–4–83 | 472 | 772 | 797 | | | 36 |
| 9 | 32–4–92 | 499 | 799 | 824 | | | 37 |
| 10 | 32–4–101 | 536 | 861 | 886 | | | 47 |
| 11 | 32–4–111 | 563 | 888 | 913 | 191 | 128 | 48 |
| 12 | 32–4–121 | 590 | 915 | 940 | | | 49 |
| 13 | 32–4–131 | 617 | 972 | 997 | | | 51 |
| 14 | 32–4–141 | 644 | 999 | 1024 | 212 | 140 | 52 |
| 15 | 32–4–150 | 671 | 1026 | 1051 | | | 53 |
| 16 | 32–4–160 | 698 | 1053 | 1078 | | | 54 |
| 17 | 32–4–169 | 745 | 1175 | 1200 | | | 64 |
| 18 | 32–4–178 | 772 | 1202 | 1227 | | | 65 |
| 19 | 32–4–188 | 799 | 1229 | 1254 | 258 | 163 | 66 |
| 20 | 32–4–198 | 826 | 1256 | 1281 | | | 67 |
| 21 | 32–4–207 | 853 | 1283 | 1308 | | | 68 |
| 22 | 32–4–217 | 880 | 1310 | 1335 | | | 69 |

KQDP32–4 Dimension table
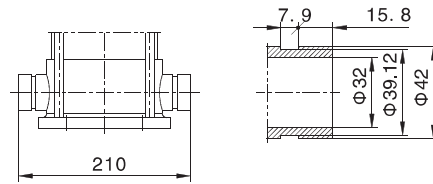
## Installation drawing
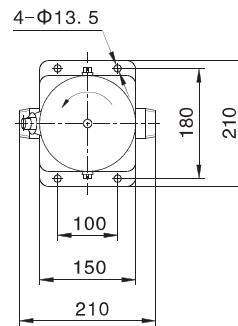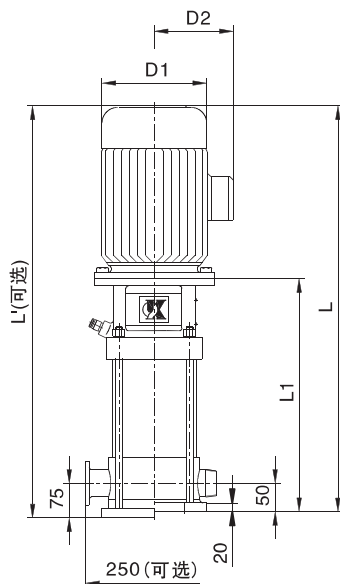
### KQDQ32–4

Connection dimensions for inlet and outlet threads
(standard configuration)

Dimensions of inlet and outlet flanges (optional)
GB/T17241.6-2008 PN2.5Mpa

Inlet and outlet bayonet coupling size (optional)



| No. | KQDQ32–4 Dimension table | | | | | | |
|-----|------|------|------|------|------|------|--------|
| | Type | L1 | L | L' | D1 | D2 | Weight |
| | Style | (mm) | (mm) | (mm) | (mm) | (mm) | (kg) |
| 1 | 32–4–17 | 290 | 510 | 535 | 135 | 86 | 21 |
| 2 | 32–4–26 | 317 | 572 | 597 | | | 25 |
| 3 | 32–4–37 | 344 | 599 | 624 | 148 | 96 | 26 |
| 4 | 32–4–46 | 371 | 626 | 651 | | | 27 |
| 5 | 32–4–55 | 398 | 698 | 723 | | | 32 |
| 6 | 32–4–64 | 425 | 725 | 750 | | | 33 |
| 7 | 32–4–74 | 452 | 752 | 777 | 166 | 115 | 34 |
| 8 | 32–4–83 | 479 | 779 | 804 | | | 36 |
| 9 | 32–4–92 | 506 | 806 | 831 | | | 37 |
| 10 | 32–4–101 | 543 | 868 | 893 | | | 47 |
| 11 | 32–4–111 | 570 | 895 | 920 | 191 | 128 | 48 |
| 12 | 32–4–121 | 597 | 922 | 947 | | | 49 |
| 13 | 32–4–131 | 624 | 979 | 1004 | | | 21 |
| 14 | 32–4–141 | 651 | 1006 | 1031 | 212 | 140 | 52 |
| 15 | 32–4–150 | 678 | 1033 | 1058 | | | 53 |
| 16 | 32–4–160 | 705 | 1060 | 1085 | | | 54 |
| 17 | 32–4–169 | 752 | 1182 | 1207 | | | 64 |
| 18 | 32–4–178 | 779 | 1209 | 1234 | | | 65 |
| 19 | 32–4–188 | 806 | 1236 | 1261 | 258 | 163 | 66 |
| 20 | 32–4–198 | 833 | 1263 | 1288 | | | 67 |
| 21 | 32–4–207 | 860 | 1290 | 1315 | | | 68 |
| 22 | 32–4–217 | 887 | 1317 | 1342 | | | 69 |

## Basic size installation

### KQDP、KQDQ Installation drawing

Filter

Expansion Bolt Hole
Resrved Anchor Bolts

80x80x150

~30

~100 (Around)
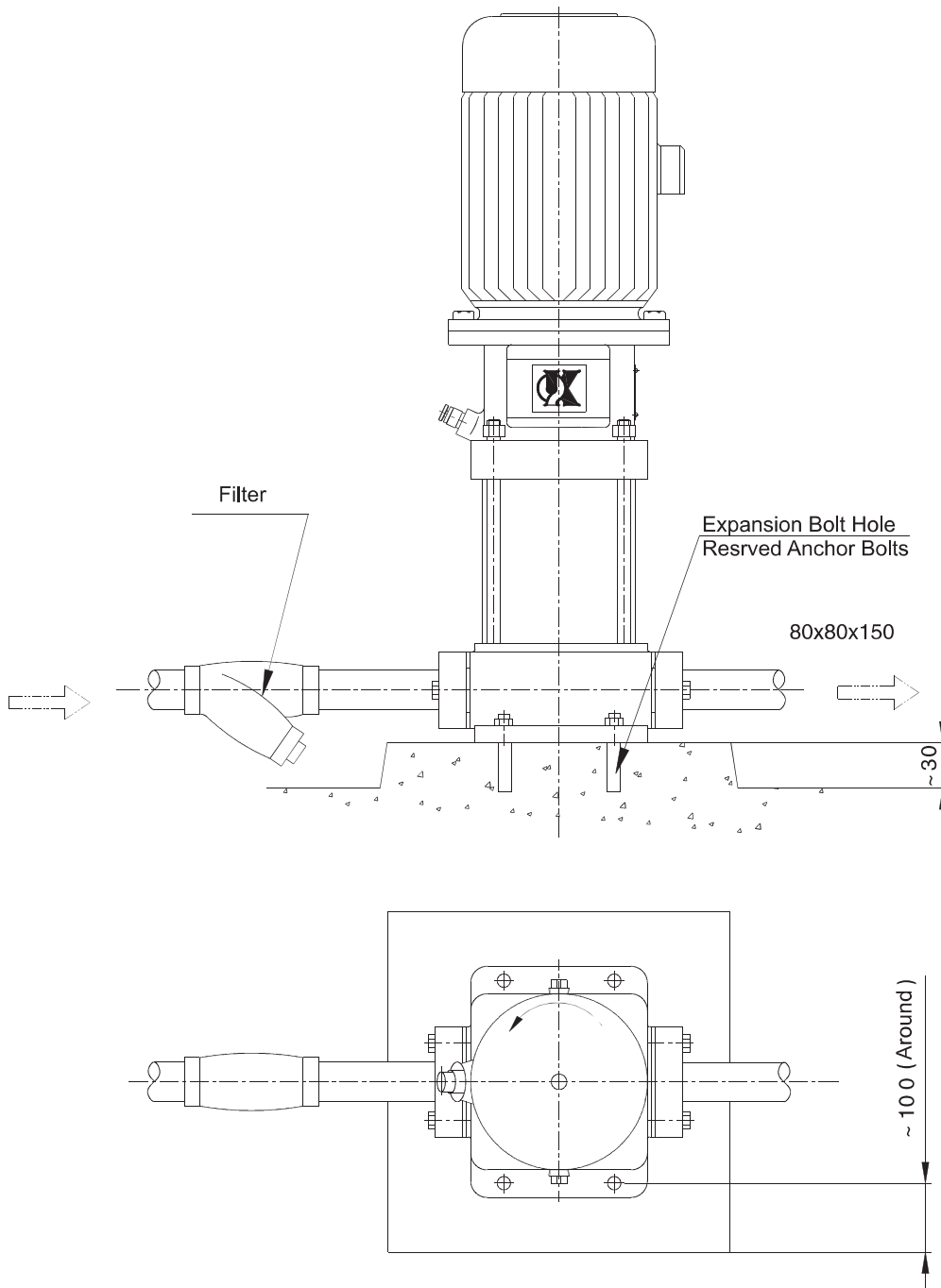
Optional Attachment:

### Flexible tube card

The relative dislocation and angle deviation are allowed, and the gap between the two ends can be adapted to the expansion and contraction of the pipeline.
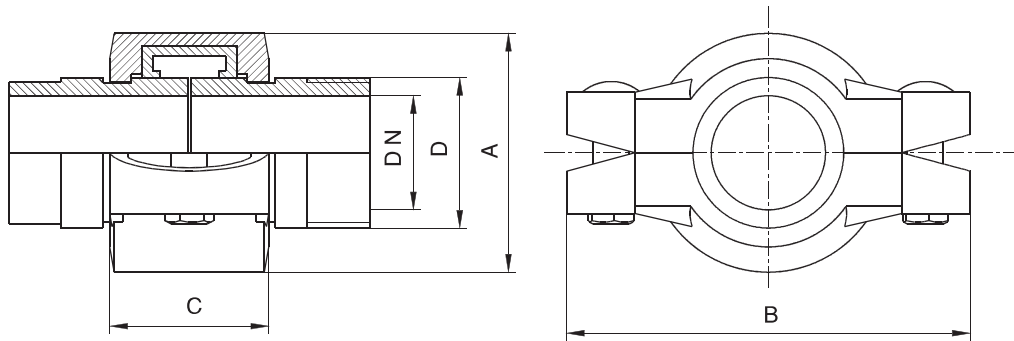
| Steel tube | | Pressure MPa | Allow maximum deflection angle | Shape Size mm | | |
|---|---|---|---|---|---|---|
| Caliber DN | Outer diameter D mm | | | A | B | C |
| 1 1/4" | 42.2 | 3.5 | 3° | 67 | 113 | 44.5 |
| 1 1/2" | 48.3 | 3.5 | 3° | 79 | 114 | 44.5 |
| 2" | 60.3 | 3.5 | 3° | 89 | 130 | 48 |

### Welding joint
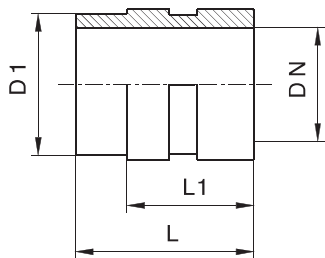
| Caliber DN | D1 | L | L1 |
|---|---|---|---|
| 1 1/4" | 38 | 40 | 30 |
| 1 1/2" | 45 | 40 | 32 |
| 2" | 57 | 45 | 35 |

### Thread pipe joint
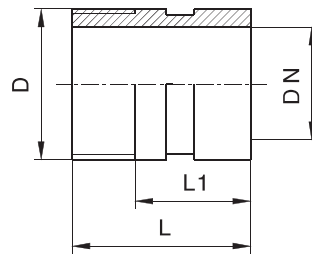
| Caliber DN | D1 | L | L1 |
|---|---|---|---|
| 1 1/4" | ZG1 1/4" | 53 | 30 |
| 1 1/2" | ZG1 1/2" | 55 | 32 |
| 2" | ZG2" | 58 | 35 |

## Flexible Installation Foundation Size Chart

KD type connection board

Flexible connection base diagram(Vibration Isolator)

Flexible connection base diagram(Vibration cushion)
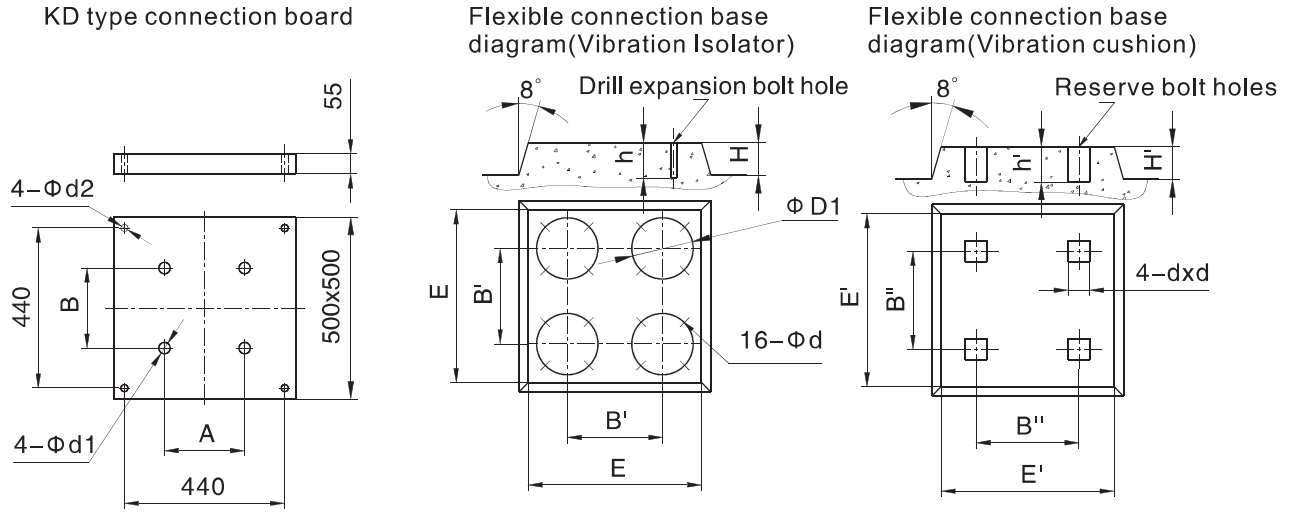
| KD type connection board size | | | | | Flexible connection base diagram (Vibration Isolator) | | | | | | Flexible connection base diagram (Vibration cushion) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 型 号 | A | B | Φd1 | Φd2 | H | E | B' | D1 | Φd | h | H' | E' | B'' | dxd | h' |
| KD−1/KQDP32 | 100 | 180 | 13 | 14 | | | | | | | | | | | |
| KD−1/KQDP40 | 130 | 215 | 13 | 14 | 150 | 750 | 440 | Vibration Isolator ΦD1 | 14 | 100 | 150 | 750 | 440 | 90 | 250 |
| KD−1/KQDP50 | 130 | 215 | 13 | 17.5 | | | | | | | | | | | |
| KD−1/KQDP65 | 170 | 240 | 14 | 17.5 | | | | | | | | | | | |

Example

Sd2 — 4-2 — 1.5

The number of basic blocks per floor is 1.5
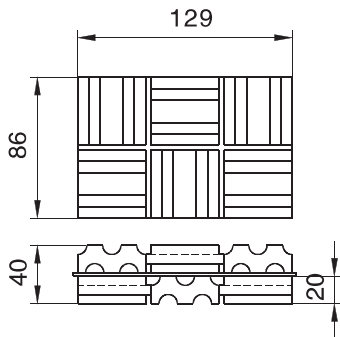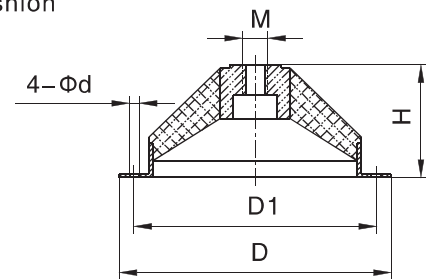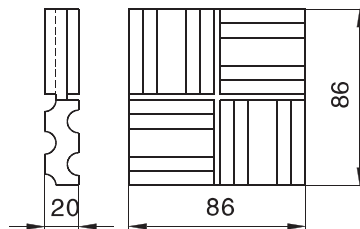2 floors
Rubber Shaw hardness 40°
Type
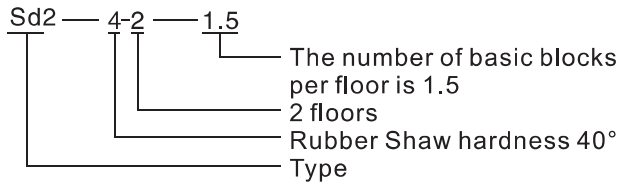
Type Descripition

Rubber hardness in type; 4 acts for 40° 、 6 acts for 60° 、 8 acts for 80° 。

JG type vibration Isolator mounting dimensions

| Type | M | D | D1 | H | d |
|---|---|---|---|---|---|
| JG1−1 JG1−2 | 10 | 100 | 80 | 43 | 8.5 |
| JG2−1 JG2−2 | 12 | 150 | 130 | 65 | 8.5 |
| JG3−1 JG3−2 | 16 | 200 | 170 | 87 | 12.5 |
| JG4−1 JG4−2 | 20 | 290 | 260 | 133 | 12.5 |

Basic block size of SD2 Vibration cushion

**KQ PUMPS**

Flexible connection
(vibration isolator)
1.KD type connection board 1
2.vibration isolator 4

Flexible connection
(vibration cushion)
1.KD type connection board 1
2.vibration cushion 4 set
3.Foot bolts 4
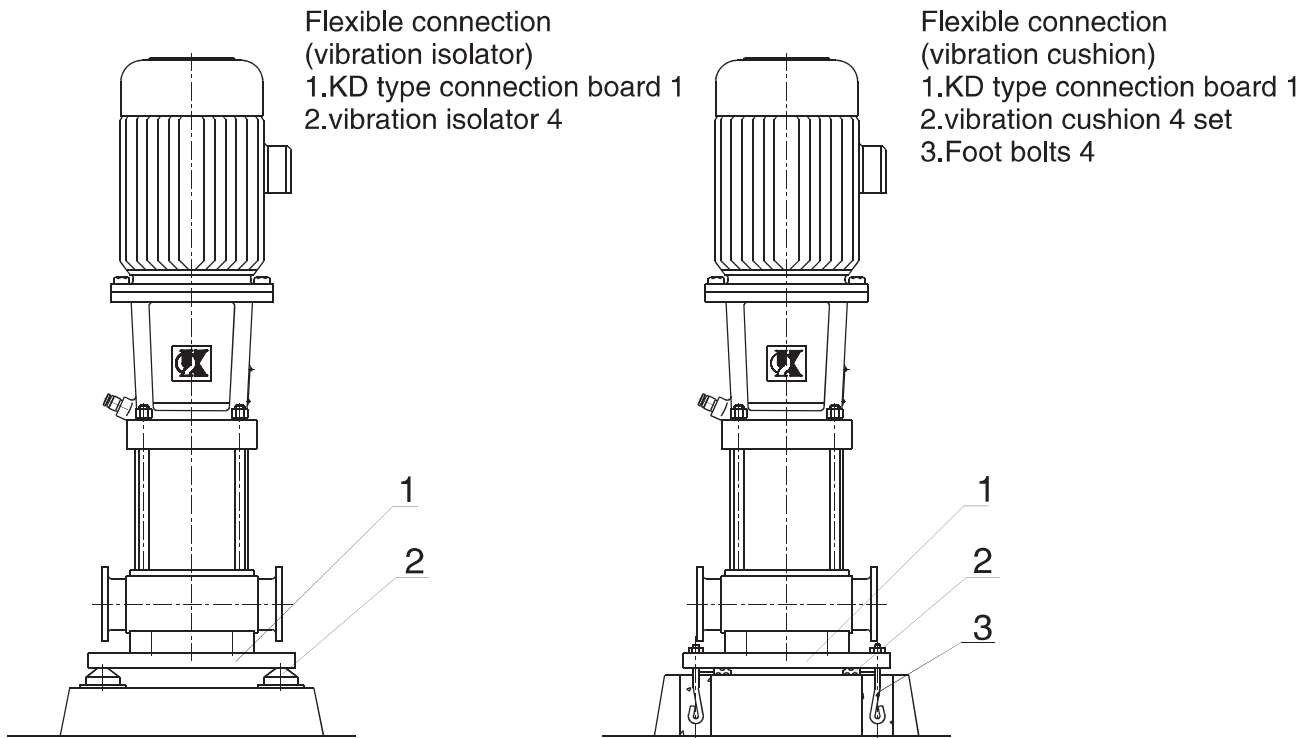


| KQDP(Q) Vibration Isolator configuration table | | | | | |
|---|---|---|---|---|---|
| Type | Head | KD type connection board | vibration isolator | vibration cushion | foot bolts |
| KQDP(Q)32–4 | 17~92 | KD–1/KQDP32 | JG2–1 | SD2–4–1–0.5 | M10x150 4 |
| | 101~217 | | JG2–2 | SD2–6–1–0.5 | |
| KQDP(Q)32–5 | 12~73 | | JG2–1 | SD2–4–1–0.5 | |
| | 81~212 | | JG2–2 | SD2–6–1–0.5 | |
| KQDP(Q)40–8 | 23~176 | KD–1/KQDP40 | JG2–2 | SD2–6–1–0.5 | |
| KQDP(Q)40–10 | 21~166 | | | | |
| KQDP(Q)50–12 | 25~94 | | | | |
| KQDP(Q)50–15 | 29~102 | | | | |
| KQDP(Q)50–16 | 28~100 | | | | |
| KQDP(Q)50–20 | 28~74 | | | | |
| KQDP(Q)40–8 | 188~236 | KD–1/KQDP50 | JG3–1 | SD2–6–1–1 | |
| KQDP(Q)40–10 | 178~226 | | | | |
| KQDP(Q)50–12 | 107~196 | | | | |
| KQDP(Q)50–15 | 117~212 | | | | |
| KQDP(Q)50–16 | 115~206 | | | | |
| KQDP(Q)50–20 | 90~195 | | | | |
| KQDP(Q)65–32 | 14~106 | KD–1/KQDP65 | JG3–1 | SD2–6–1–1 | M12x200 4 |
| | 123~220 | | JG3–2 | SD2–6–1–1.5 | |